DOE/CF-0096
Volume 1

Department of Energy
FY 2015 Congressional Budget Request

National Nuclear Security Administration

Federal Salaries and Expenses
Weapons Activities
Defense Nuclear Nonproliferation
Naval Reactors

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FY 2015 Congressional Budget

Volume 1

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(Discretionary dollars in thousands)

Department of Energy Budget by Appropriation	FY 2013 Current	FY 2014 Enacted	FY 2015 Request	FY 2015 vs. FY 2014 $	FY 2015 vs. FY 2014 %
Energy and Water Development and Related Agencies					
Energy Programs					
Energy Efficiency and Renewable Energy	1,691,757	1,900,641	2,316,749	+416,108	+21.9%
Electricity Delivery and Energy Reliability	129,196	147,242	180,000	+32,758	+22.2%
Nuclear Energy	708,429	888,376	863,386	-24,990	-2.8%
Fossil Energy Programs					
Clean Coal Technology	0	0	-6,600	-6,600	N/A
Fossil Energy Research and Development	498,715	561,931	475,500	-86,431	-15.4%
Naval Petroleum and Oil Shale Reserves	14,129	19,999	19,950	-49	-0.2%
Elk Hills School Lands Fund	0	0	15,580	+15,580	N/A
Strategic Petroleum Reserve	182,625	189,360	205,000	+15,640	+8.3%
Northeast Home Heating Oil Reserve	3,590	8,000	1,600	-6,400	-80.0%
Total, Fossil Energy Programs	***699,059***	***779,290***	***711,030***	***-68,260***	***-8.8%***
Uranium Enrichment D&D Fund	448,231	598,574	530,976	-67,598	-11.3%
Energy Information Administration	99,508	116,999	122,500	+5,501	+4.7%
Non-Defense Environmental Cleanup	223,457	231,741	226,174	-5,567	-2.4%
Science	4,681,195	5,066,372	5,111,155	+44,783	+0.9%
Advanced Research Projects Agency - Energy	250,636	280,000	325,000	+45,000	+16.1%
Departmental Administration	119,195	126,449	129,052	+2,603	+2.1%
Office of Indian Energy Policy and Programs	0	0	16,000	+16,000	N/A
Office of the Inspector General	39,803	42,120	39,868	-2,252	-5.3%
Title 17 - Innovative Technology					
Loan Guarantee Program	0	20,000	7,000	-13,000	-65.0%
Advanced Technology Vehicles Manufacturing Loan Program	5,686	6,000	4,000	-2,000	-33.3%
Total, Energy Programs	***9,096,152***	***10,203,804***	***10,582,890***	***+379,086***	***+3.7%***
Atomic Energy Defense Activities					
National Nuclear Security Administration					
Weapons Activities	6,966,855	7,781,000	8,314,902	+533,902	+6.9%
Defense Nuclear Nonproliferation	2,237,420	1,954,000	1,555,156	-398,844	-20.4%
Naval Reactors	994,118	1,095,000	1,377,100	+282,100	+25.8%
Federal Salaries and Expenses/1	377,457	377,000	410,842	+33,842	+9.0%
Cerro Grande Fire Activities	-61	0	0	0	N/A
Total, National Nuclear Security Administration	***10,575,789***	***11,207,000***	***11,658,000***	***+451,000***	***+4.0%***
Environmental and Other Defense Activities					
Defense Environmental Cleanup	4,627,054	5,000,000	5,327,538	+327,538	+6.6%
Other Defense Activities	760,030	755,000	753,000	-2,000	-0.3%
Defense Nuclear Waste Disposal	-727	0	0	0	N/A
Total, Environmental and Other Defense Activities	***5,386,357***	***5,755,000***	***6,080,538***	***+325,538***	***+5.7%***
Total, Atomic Energy Defense Activities	***15,962,146***	***16,962,000***	***17,738,538***	***+776,538***	***+4.6%***
Power Marketing Administrations					
Southeastern Power Administration	0	0	0	0	N/A
Southwestern Power Administration	11,243	11,892	11,400	-492	-4.1%
Western area Power Administration (CROM)	90,949	95,930	93,372	-2,558	-2.7%
Falcon and Amistad Operating and Maintenance Fund	220	420	228	-192	-45.7%
Colorado River Basins	-23,000	-23,000	-23,000	0	N/A
Transmission Infrastructure Program	0	0	0	0	N/A
Total, Power Marketing Administrations	***79,412***	***85,242***	***82,000***	***-3,242***	***-3.8%***
Federal Energy Regulatory Commission (FERC)	0	0	0	0	N/A
Subtotal, Energy and Water Development and Related Agencies	***25,137,710***	***27,251,046***	***28,403,428***	***+1,152,382***	***+4.2%***
Uranium Enrichment D&D Fund Discretionary Payments	0	0	-463,000	-463,000	N/A
Excess Fees and Recoveries, FERC	-279	-26,236	0	+26,236	+100.0%
Total, Discretionary Funding by Appropriation	**25,137,431**	**27,224,810**	**27,940,428**	**+715,618**	**+2.6%**

1/Formerly Office of the Administrator

National Nuclear Security Administration

Overview

	FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Request	FY 2015 vs. FY 2014 $	FY 2015 vs. FY 2014 %
	(Dollars in Thousands)					
National Nuclear Security Administration						
Office of the Administrator	377,457	377,000	377,000	0	-377,000	-100.0%
Federal Salaries and Expenses	0	0	0	410,842	410,842	0%
Weapons Activities	6,966,855	7,781,000	7,781,000	8,314,902	533,902	6.9%
Defense Nuclear Nonproliferation	2,237,420	1,954,000	1,954,000	1,555,156	-398,844	-20.4%
Naval Reactors	994,118	1,095,000	1,095,000	1,377,100	282,100	25.8%
Cerro Grande	-61	0	0	0	0	0%
Total, National Nuclear Security Administation	**10,575,789**	**11,207,000**	**11,207,000**	**11,658,000**	**451,000**	**4.0%**

The FY 2015 Request is $11.7 billion, an increase of $451 million, or 4 percent, above FY 2014 enacted levels to modernize the U.S. nuclear stockpile, execute the international nuclear nonproliferation agenda, and support U.S. Navy requirements. The request is designed to support a more agile governance model for the nuclear security enterprise, including the national laboratories, production plants, processing facilities, and the national security site, and to consistently succeed in meeting the National Nuclear Security Administration's (NNSA) diverse and critical mission in an effective and cost efficient manner.

NNSA Future-Years Nuclear Security Program[a]

	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
	(Dollars in Thousands)				
National Nuclear Security Administration					
Office of the Administrator	0	0	0	0	0
Federal Salaries and Expenses	410,842	408,786	416,643	424,778	434,781
Weapons Activities	8,314,902	8,907,239	9,261,422	9,476,640	9,702,327
Defense Nuclear Nonproliferation	1,555,156	1,694,479	1,700,815	1,734,831	1,743,505
Naval Reactors	1,377,100	1,271,496	1,303,120	1,334,751	1,366,387
Cerro Grande	0	0	0	0	0
Total, National Nuclear Security Administation	**11,658,000**	**12,282,000**	**12,682,000**	**12,971,000**	**13,247,000**

Public Law Authorizations

- P.L. 106-65, National Nuclear Security Administration Act, as amended
- P.L. 113-66, National Defense Authorization Act for Fiscal Year 2014
- P.L. 113-76, Consolidated Appropriations Act 2014

[a] The annual totals include an allocation to NNSA from the Department of Defense's five year budget plan. The amounts included are $1.4 billion in FY 2016, $1.6 billion in FY 2017, $1.7 billion in FY 2018, and $1.7 billion in FY 2019.

Appropriation Summary by Program

(Dollars in Thousands)

	FY 2013 Current	FY 2014 Enacted	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Office of the Administrator	**377,457**	**377,000**	**0**	**0**	**0**	**0**	**0**
Federal Salaries & Expenses	**0**	**0**	**410,842**	**408,786**	**416,643**	**424,778**	**434,781**
Weapons Activities Appropriation							
Directed Stockpile Work	1,930,057	2,442,033	2,746,604	2,833,519	2,969,494	3,325,671	3,408,814
Science Campaign	321,220	369,723	456,430	525,000	526,399	530,609	539,313
Engineering Campaign	124,414	149,911	136,005	138,151	133,575	147,667	154,925
Inertial Confinement Fusion Ignition and High Yield Campaign	456,676	513,957	512,895	517,600	509,536	512,220	512,723
Advanced Simulation and Computing Campaign	513,567	569,329	610,108	650,971	648,878	667,096	709,312
Readiness Campaign	115,311	55,407	125,909	135,114	86,883	55,985	61,500
Readiness in Technical Base and Facilities	2,089,417	2,067,425	2,055,521	2,458,905	2,770,355	2,645,436	2,764,392
Secure Transportation Asset	201,533	210,000	233,813	243,008	255,107	259,713	264,907
Nuclear Counterterrorism Incident Response	227,088	228,243	173,440	165,382	169,495	173,609	177,724
Counterterrorism & Counterproliferation Programs	0	0	76,901	82,121	84,163	86,206	88,249
Site Stewardship	69,497	87,326	82,449	84,377	84,520	84,485	85,181
Defense Nuclear Security	653,463	664,981	618,123	652,771	663,094	675,402	689,221
IT & Cybersecurity (NNSA CIO Activities in FY 2013)	151,184	145,068	179,646	151,661	153,431	155,481	158,662
National Security Applications	9,500	0	0	0	0	0	0
Legacy Contractor Pensions	170,191	279,597	307,058	268,659	206,492	157,060	87,404
Domestic Uranium Enrichment Research, Development and Demonstration	0	62,000	0	0	0	0	0
Use of Prior Year Balances	-66,263	0	0	0	0	0	0
Rescission of Prior Year Balances	0	-64,000	0	0	0	0	0
Total, Weapons Activities	**6,966,855**	**7,781,000**	**8,314,902**	**8,907,239**	**9,261,422**	**9,476,640**	**9,702,327**
Defense Nuclear Nonproliferation							
Global Threat Reduction Initiative	462,892	442,102	333,488	397,816	406,272	454,628	488,415
Nonproliferation and Verification R&D	420,509	398,838	0	0	0	0	0
Defense Nuclear Nonproliferation R&D	0	0	360,808	387,039	396,043	405,050	414,058
Nonproliferation and International Security	143,106	128,675	141,359	145,887	149,341	160,796	164,252
International Material Protection & Cooperation	527,925	419,625	305,467	361,509	360,000	334,000	312,000
Fissile Materials Disposition	663,754	526,057	311,125	312,187	319,951	327,717	335,484
Legacy Contractor Pensions	51,438	93,703	102,909	90,041	69,208	52,640	29,296
Use of Prior Year Balances	-32,204	-55,000	0	0	0	0	0
Total, Defense Nuclear Nonproliferation	**2,237,420**	**1,954,000**	**1,555,156**	**1,694,479**	**1,700,815**	**1,734,831**	**1,743,505**
Naval Reactors							
Naval Reactors	994,118	1,108,983	1,377,100	1,271,496	1,303,120	1,334,751	1,366,387
Use of Prior Year Balances	0	-13,983	0	0	0	0	0
Total, Naval Reactors	**994,118**	**1,095,000**	**1,377,100**	**1,271,496**	**1,303,120**	**1,334,751**	**1,366,387**
Cerro Grande	**-61**	**0**	**0**	**0**	**0**	**0**	**0**
Total, NNSA	**10,575,789**	**11,207,000**	**11,658,000**	**12,282,000**	**12,682,000**	**12,971,000**	**13,247,000**

NNSA Overview

Overview

The $11.7 billion request provides funding for NNSA to implement four major national security endeavors consistent with the Department of Energy's (DOE) Strategic Plan: (1) use science to maintain a safe, secure, and effective nuclear weapons stockpile that deters any adversary and protects our allies; (2) reduce the threat posed by nuclear proliferation and terrorism, including unsecured or excess nuclear and radiological materials both domestically and internationally; (3) prepare to respond to, and mitigate, nuclear and radiological incidents worldwide; and (4) provide safe and effective nuclear propulsion for the U.S. Navy.

The FY 2015 Budget Request also supports national security priorities articulated in the 2010 Nuclear Posture Review, the Stockpile Stewardship and Management Plan (SSMP), and the 2010 National Security Strategy of the United States. These priorities are reflected in the DOE Strategic Plan for 2014-2018 and guide decisions on allocation of resources in the President's Budget Requests.

FY 2015 Budget Request for **Weapons Activities** is $8.3 billion, a $534 million increase from FY 2014 Enacted levels to meet the Administration's commitments to the programs and capabilities required to maintain a safe, secure, and effective nuclear stockpile. The Weapons Activities appropriation supports DOE's pursuit of its Strategic Plan goal of Nuclear Security, playing a critical role in meeting DOE's Strategic Objectives 4 and 5 to, respectively, maintain the safety, security and effectiveness of the nation's nuclear deterrent without nuclear testing; and strengthen key science, technology, and engineering capabilities and modernize the national security infrastructure. Increases are requested for Directed Stockpile Work - particularly for the B61 life extension program and the Science Campaign. The Weapons Activities Request also includes funding for Defense Nuclear Security (DNS) to support DOE's physical security reform efforts to emphasize mission performance, responsibility, and accountability. In addition, there are increases in funding for the Information Technology and Cybersecurity program to research and develop information technology and cybersecurity solutions. Funding is also requested in this account to sustain emergency response and nuclear counterterrorism capabilities that are applied against a wide range of high-consequence nuclear or radiological incidents and threats. The Budget Request is closely aligned with the Department of Defense (DoD) requirements to ensure the U.S. nuclear deterrent continues to be safe, secure, and effective. The programs of the Weapons Activities appropriation are conducted primarily at eight sites by a workforce of approximately 30,000 people managed by a Federal workforce composed of civilian and military staffs.

The **Defense Nuclear Nonproliferation** FY 2015 Budget Request is $1.6 billion, a $399 million reduction from FY 2014 Enacted levels, to support U.S. leadership in nonproliferation initiatives both here and abroad. The Defense Nuclear Nonproliferation (DNN) appropriation supports DOE's pursuit of its Strategic Plan goal of Nuclear Security, playing a critical role in meeting DOE's Strategic Objective 6 to reduce global nuclear security threats. After the conclusion of the four-year accelerated effort, emphasis continues to be on efforts to secure or eliminate the world's most vulnerable nuclear weapon materials; dispose of excess nuclear weapon materials in the United States; support the development of new technologies for nonproliferation; promote the secure expansion of nuclear energy; and improve capabilities worldwide to deter and detect the illicit movement of nuclear and radiological materials. As part of an ongoing analysis of options to dispose of U.S. surplus plutonium, it has become apparent that the Mixed Oxide (MOX) Fuel Fabrication Facility will be significantly more expensive than anticipated, and therefore, the Budget Request places the MOX Facility in cold stand-by while the Department evaluates plutonium disposition options.

The **Naval Reactors** FY 2015 Budget Request is $1.4 billion, a $282 million increase from FY 2014 Enacted levels. The Naval Reactors (NR) appropriation supports DOE's pursuit of its Strategic Plan goal of Nuclear Security, playing a critical role in meeting DOE's Strategic Objective 7 to provide safe and effective integrated nuclear propulsion systems for the U.S. Navy. This funding is needed for the Navy's fleet of nuclear-powered aircraft carriers and submarines and funds three major projects – the *Ohio* Replacement, Land-based Prototype Refueling Overhaul, and Spent Fuel Handling Recapitalization which are needed to deliver Navy-established mission requirements.

The FY 2015 Budget Request for **NNSA Federal Salaries and Expenses** (formerly the Office of the Administrator account), is $411 million to support the staffing and Federal support needed to meet mission requirements. The Request constitutes a $33 million increase due largely to a Congressionally-directed functional transfer and a large one-time cost associated with a staff relocation. Funding for salaries and expenses is essentially unchanged from FY 2014 enacted levels, after adjusting for a $20 million Request to pay for moving to a different leased facility for the NNSA Albuquerque Complex and a Congressionally-directed functional transfer of $12 million out of Weapons Activities for Corporate Project Management.

In addition to the $11.7 billion requested by the Budget, the Opportunity, Growth, and Security Initiative (OGSI) would fund nearly $600 million to accelerate investment in key Research and Development (R&D), infrastructure, and cybersecurity activities. To accelerate modernization and maintenance of nuclear facilities, OGSI would accelerate funding for infrastructure planning and improvements found in the Readiness in Technical Base and Facilities program. OGSI would also accelerate key non-proliferation activities including: R&D to advance proliferation detection and nuclear detonation detection capabilities; efforts to remove and eliminate, or secure and safeguard vulnerable nuclear and radiological materials worldwide; and efforts to limit or prevent the illegal transfer and illicit trafficking of weapons-usable nuclear and other radiological materials. Funding would also be provided to further support cybersecurity initiatives.

Highlights and Major Changes in the FY 2015 Budget

Weapons Activities
The Weapons Activities Request for FY 2015 builds upon last year's DOE/NNSA and DoD prioritized plan to meet the key Nuclear Posture Review goals to modernize the stockpile and enterprise infrastructure within current fiscal constraints of the Bipartisan Budget Act. Programs funded within the WA appropriation support the nation's current and future defense posture, and its attendant nationwide infrastructure of science, technology, and engineering capabilities. Weapons Activities provides for the maintenance and refurbishment of nuclear weapons to sustain confidence in their safety, reliability, and performance; expansion of scientific, engineering, and manufacturing capabilities to enable certification of the enduring nuclear weapons stockpile; and manufacture of nuclear weapon components. Weapons Activities provides for continued maintenance and investment in the NNSA nuclear enterprise to be more responsive and cost effective. WA also provides protection for NNSA personnel, facilities, nuclear weapons, special nuclear material, and information from a full spectrum of insider and outsider threats.

The major elements of the FY 2015 - 2019 appropriation include:

- Complete production of the W76-1 warhead by FY 2019.
- Achieve the B61-12 LEP First Production Unit (FPU) by FY 2020.
- Achieve the W88 ALT 370 FPU by FY 2020.
- Defer the W78/88-1 LEP FPU by five years to FY 2030.
- Delay the Cruise Missile Warhead LEP FPU by three years to FY 2027 while evaluating the option to fund an earlier FPU if circumstances dictate.
- Continue funding engineering design for the Uranium Processing Facility, Y-12 and to study alternative approaches.
- Continue implementing the Plutonium Strategy to better align with DoD requirements while reducing safety risk in the Chemistry and Metallurgy Research Facility and PF-4.
- Maintain a risk-based security program and collaboration with the DoD, in support of nuclear security enterprise goals.
- Transform the computing environment by delivering the NNSA Network Vision (2NV) and NNSA Classified Network Vision (C2NV) and the Joint Cybersecurity Coordination Center (JC3) with the DOE CIO.
- Improve facility maintenance activities and reinvestment projects to arrest growth in deferred maintenance.
- Advance U.S. nuclear counterterrorism and counterproliferation goals through applied research and development to improve understanding of nuclear threat devices, provides technical insights and expertise to support USG policy and decision-making, and enables domestic and international nuclear counterterrorism engagements.
- Provide a versatile, capable, worldwide nuclear and radiological emergency response with the technical capability to respond to and manage any radiological/nuclear incident.

Defense Nuclear Nonproliferation
The Defense Nuclear Nonproliferation (DNN) funding will continue DOE efforts as the lead U.S. Government element for developing and implementing programs to limit or prevent the spread of nuclear and radiological materials and associated technology and expertise, to advance technologies that detect nuclear and radiological proliferation worldwide, and to eliminate or secure inventories of surplus materials and infrastructure usable for nuclear weapons. DNN participates in a whole-of-government policy process by formulating options and evaluating alternatives.

The major elements of the FY 2015 - 2019 appropriation include:

- Place the Mixed Oxide Fuel Fabrication Facility (MFFF) in cold stand-by to further study more efficient options for plutonium disposition. NNSA remains committed to the plutonium disposition mission and to the Plutonium Management and Disposition Agreement (PMDA) with Russia while we further study more efficient options for plutonium disposition.
- Continue remaining high-priority nuclear and radiological threat reduction efforts, following the accelerated four-year effort, including removal or confirmed disposition of an additional 315 kg of HEU and plutonium by end of FY 2015 – cumulative 5,332 kg since program inception in 2004.
- Provide IAEA with critical mission support and strengthens international nuclear safeguards system.
- Provide funding to address urgent emerging threats in unstable regions, particularly the Middle East.
- Advances satellite payload activities that support treaty monitoring and military missions.
- Implement the U.S. - Russia Protocol to the Framework Agreement on a Multilateral Nuclear Environmental Programme in the Russian Federation (MNEPR) and a subordinate Implementing Agreement signed on June 14, 2013. The MNEPR Protocol succeeds and replaces the 1992 U.S.-Russia Cooperative Threat Reduction (CTR) Agreement, which expired June 17, 2013.

Naval Reactors

Naval Reactors' (NR) FY 2015 Request continues achievement of NR's core objective of ensuring the safe and reliable operation of the Nation's nuclear fleet (72 submarines and 10 aircraft carriers), constituting over 40 percent of the Navy's major combatants. This Budget Request is consistent with the outcome of the 2012 joint DOE/DoD review and supports three major projects: *Ohio* Replacement, Land-based Prototype Refueling Overhaul, and Spent Fuel Handling Recapitalization Project. The Request seeks significantly more funding for the Spent Fuel Handling Recapitalization Project to ensure the Navy's capability to refuel and defuel aircraft carriers and submarines over the long-term, which is critical to maintaining the nuclear fleet's operational availability for national security missions and avoiding the Navy paying annual maintenance costs.

NNSA Federal Salaries and Expenses

In FY 2015, the Request proposes to rename the "Office of the Administrator" to "National Nuclear Security Administration Federal Salaries and Expenses" to better reflect the purpose for how funding will be used.

The FY 2015 Request builds upon changes made in the past year to improve the effectiveness and efficiency of NNSA federal oversight while reducing the number of full time equivalent (FTE) federal employees. In the past year, NNSA has implemented a more unified model of governance resulting in better NNSA mission integration between the NNSA Administrator and NNSA Field Office Managers and Lab/Plant Directors. As part of this "triangle" model, NNSA Field Managers now report directly to the Administrator's front office. In addition, NNSA created a new organization in FY 2013 – Program Review and Analysis (PR&A) – to both improve NNSA coordination with DoD Cost Assessment and Program Evaluation (CAPE) and manage NNSA's planning and programming phases of the budget process.

The FY 2015 Budget Request provides support for 1,710 FTEs – a 9.3 percent reduction relative to FY 2012 enacted levels – and other expenses of the NNSA Federal staff. The Request has been significantly downsized relative to prior Future Years Nuclear Security Programs (FYNSPs) consistent with NNSA's ongoing efforts to streamline operations and provide efficient and effective Federal oversight to our programs in close partnership with the national laboratories and production facilities.

The Request includes two new programmatic items relative to last year's request: $20 million to fund the move to a different leased facility for the NNSA Albuquerque Complex and $12 million associated with the transfer of Corporate Project Management from Weapons Activities, Site Stewardship to National Nuclear Security Administration Federal Salaries and Expenses, consistent with Congressional direction in the FY 2014 Omnibus appropriation.

Major Outyear Priorities and Assumptions

The total NNSA FYNSP for FY 2015 – 2019 is $62.8 billion, of which $11.7 billion is requested for FY 2015 and $51.2 billion is planned to be requested from FY 2016 – 2019. This FYNSP total is equal to the $62.8 billion identified in the FY 2014 – 2018 FYNSP. This level of funding is required to support the major elements of FYNSP work outlined above. If funding in any year is lower, NNSA may be required to readjust projected timelines to complete mission work.

Department of Energy (DOE) Working Capital Fund (WCF) Support
NNSA's projected support to the DOE WCF for FY 2015 is $80.7 million, of which $43.9 million will be paid for out of the FSE account, $27.1 million out of Weapons Activities, $5.9 million out of Defense Nuclear Nonproliferation, and $3.9 million out of Naval Reactors. DOE is working to achieve economies of scale through an enhanced WCF.

Legacy Contractor Pensions
NNSA requests $410 million in FY 2015 for Legacy Contractor Pensions split between Weapons Activities and Defense Nuclear Nonproliferation. These appropriations provide the annual NNSA share of the DOE's reimbursement of payments made to the University of California Retirement Plan (UCRP) for former University of California employees and annuitants who worked at LLNL and LANL. The UCRP benefit for these individuals is a legacy cost and DOE's annual payment to the UC is required by contracts. The amount of the annual payment is based on the actuarial valuation report and is covered by the terms described in the Appendix T section of the contracts. Funding for these contracts will be paid through the Legacy Contractor Pension line.

NNSA Graduate Fellowship Program (NGFP) Support
The NNSA manages a technical fellowship program to cultivate the next generation of future leaders in nonproliferation, nuclear security, and international security to create a pipeline of highly qualified professionals who will sustain expertise in these areas through future employment within the nuclear security enterprise. NNSA anticipates spending about $6.0 million in FY 2015, $3.0 million in DNN, $2.5 million in WA, and $500,000 in FSE.

Indirect Costs and Other Items of Interest

General Plant Projects (GPP)

Pursuant to Section 3121 of the Ike Skelton National Defense Authorization Act for FY 2011 (P.L. 111-383), notification is being provided for general plant projects with a total estimated cost of more than $5 million planned for execution in FY 2014 and FY 2015.

FY 2014 General Plant Projects

Weapons Activities – Sandia National Laboratories

Project Title	Program	TEC	Project Description	FY 2013 Current	FY 2014 Enacted	FY 2015 Request	Outyears	Construction Design Estimate
TTR: Building 03-57 Utility Tower Addition	NA-00	6,100,000	This 4-story 5,700 SF addition will support communications for LEP. It will house an elevator, restrooms, and new HVAC for control tower. It is needed for the mission critical control tower to meet ADA and egress requirements. HVAC, electrical, lightning protection, and security upgrades to this mission critical building are needed to mitigate ongoing risks to weapons test data. The 5,700 SF is offset under Freeze the Footprint.	0	360,000	5,740,000	0	360,000

Weapons Activities – Lawrence Livermore National Laboratory

Project Title	Program	TEC	Project Description	FY 2013 Current	FY 2014 Enacted	FY 2015 Request	Outyears	Construction Design Estimate
B-654 Livermore Computing Facility	NA-00	9,720,000	This project will construct a new building that will consist of a 2 level main computer structure with a 6,000 square foot machine space flanked on the sides by support space. The main computer structure is designed to be built incrementally to meet the demands of the computational technology advances and provides adequate [1/3 of total] space for disk arrays. The ceiling	0	3,060,000	3,380,000	3,280,000	400,000

Project Title	Program	TEC	Project Description	FY 2013 Current	FY 2014 Enacted	FY 2015 Request	Outyears	Construction Design Estimate
			height will be high enough to assure proper forced air circulation and adequate height for installation of utilities and the computers. The design will allow adequate space for air circulation, liquid cooling solutions, cabling, electrical, plumbing, and fire protection and detection. The building will be able to accommodate 5MW of computational capacity. It will be designed so that additional power and mechanical resources can be easily added as required as HPC technologies advance. Project is Design-Bid-Build under Firm Fixed Price. (Note: $980K will be held in reserve as contingency to assure no overruns beyond the $10M GPP limits.)					

Institutional General Plant Projects (IGPP)

Pursuant to Section 3121 of the Ike Skelton National Defense Authorization Act for FY 2011 (P.L. 111-383), notification is being provided for general plant projects with a total estimated cost of more than $5 million planned for execution in FY 2014 and FY 2015.

FY 2014 Institutional General Plant Projects

Weapons Activities – Sandia National Laboratories

Project Title	Program	TEC	Project Description	FY 2013 Current	FY 2014 Enacted	FY 2015 Request	Outyears	Construction Design Estimate
ABQ: Bldg. 705 IGPP	NA-00	9,700,000	The 26,000 SF building will house various organizations that support the Sandia National Security Mission in turnaround space over the next 20-30 years as existing facilities are replaced or renovated. Staff if Building 802 (approx. 100) will be the first relocated to this building, until the Weapons Evaluation Facility (WEF) is complete. At that time, staff in other buildings would relocate to this building during renovation/replacement of their building. The Acquisition strategy is a Firm Fixed Price design-build and will be designed/constructed to meet LEED Gold Certification. The 26,000 SF is offset under Freeze the Footprint. (Note: ~$700K will be held in reserve as contingency to assure no overruns beyond the $10M IGPP limit.)	0	600,000	9,100,000	0	600,000

Project Title	Program	TEC	Project Description	FY 2013 Current	FY 2014 Enacted	FY 2015 Request	Outyears	Construction Design Estimate
ABQ: Integrated Systems Analysis and Studies (ISAS) Building	NA-00	9,740,000	This 16,250 SF building replaces the 1976 T-39, T-14, T-15, T-16, T-17, T-18 and T-23 and provides updated space for systems studies and analyses that are integrated across National Security mission space (SMUs), integrated across Sandia's organizations, integrated across the external Nuclear Security Enterprise, and integrated with participation from external partners and customers. This 16,250 SF is offset under Freeze the Footprint.	0	600,000	8,000,000	1,140,000	600,000

FY 2015 General Plant Projects

Weapons Activities – Kansas City Plant

Project Title	Program	TEC	Project Description	FY 2013 Current	FY 2014 Enacted	FY 2015 Request	Outyears	Construction Design Estimate
Expansion of a portion of "White Space" supporting future weapons production	NA-00	8,000,000	The purpose of this project is to build out a portion of the existing NSC "white space" at the NSC facility to support new program development and production work at KCP (B61 LEP, W88 ALT 370). This project will enable support for new and developing programs as they evolve and require KCP hardware.	0	0	500,000	7,500,000	500,000

Weapons Activities – Los Alamos National Laboratory

Project Title	Program	TEC	Project Description	FY 2013 Current	FY 2014 Enacted	FY 2015 Request	Outyears	Construction Design Estimate
Environmental Testing Facilities ARMAG Upgrade	CBI	7,600,000	Facility upgrades to the Environmental Testing Facilities (K-Site) required for the B-61 and all future Life Extension Programs - ARMAG Capability, Operational and Lifesafety Investments (primarily fire protection)	0	0	3,000,000	2,100,000	500,000
TRUPACK III	NA-00	8,800,000	TRUPACT-III loading and shipping operations will to be located at the Radioassay and Non-Destructive Testing (RANT) facility. The LTP project will erect a structure to provide weather protection for the activity of loading compliantly packaged SLB2 into TRUPACT III Type B containers and will be designated as the TRUPACT III Loading Enclosure (TTLE). The TTLE will be installed in the existing RANT parking area. The TRUPACT III will have its own Documented Safety Analysis (DSA)	0	0	4,500,000	4,300,000	700,000

Project Title	Program	TEC	Project Description	FY 2013 Current	FY 2014 Enacted	FY 2015 Request	Outyears	Construction Design Estimate
			and is a Nuclear Regulatory Commission approved Type B shipping container to be used by the LANL TRU program to transfer TRU waste containers from LANL to the Waste Isolation Pilot Plant (WIPP). Open container remediation is one of the most hazardous and expensive operations performed by LTP so use of the larger SLB2 reduces the size reduction required for large TRU waste contaminated items. Approval of this project will remove a significant long-term liability for DOE/NNSA and the Laboratory. Disposition of TRU waste to WIPP and closure of TA-54 is a priority in the DOE Weapons Activities and EM Programs and is important to the long-term, continuing operation of the Laboratory in a stable and environmentally responsible manner.					

Weapons Activities – Pantex Plant

Project Title	Program	TEC	Project Description	FY 2013 Current	FY 2014 Enacted	FY 2015 Request	Outyears	Construction Design Estimate
Building 12-75 Electrical/Mechanical Upgrade	NA-00	9,200,000	Upgrade the electrical and mechanical systems to ensure power, generator, and Uninterrupted Power Supply (UPS) needs are met for additional upgrades and new technology implementations.	0	0	9,200,000	0	400,000

Weapons Activities – Savannah River Site

Project Title	Program	TEC	Project Description	FY 2013 Current	FY 2014 Enacted	FY 2015 Request	Outyears	Construction Design Estimate
Replace GTS Unloading Lasers	CBI	5,000,000	Replace the 25 year old laser system to unload Gas Transfer Systems (GTS) for tritium isotope recovery. The manufacturer has stopped providing system support to this obsolete equipment.	0	0	2,500,000	2,500,000	Greater than 600,000
Replace 234-7H Air Handling Unit (AHU)	NA-00	8,000,000	This project will replace currently existing AHUs that supply 234-7H. It will require new ventilation fans and a high efficiency new chilled water system. This modification will replace undersized equipment in 234-7H and add capacity for planned additional cooling needs. (Part of TRIM Program)	0	0	8,000,000	0	Greater than 600,000

50 US Code 2746 requires that if the total estimated cost for construction design in connection with any construction project exceeds $1,000,000, funds for that design must be specifically authorized by law. NNSA requests Congressional Authorization for eight General Plant Projects exceeding the $1,000,000 design threshold for the following projects**:**

Weapons Activities – Pantex Plant

Project Title	Program	TEC	Project Description	FY 2013 Current	FY 2014 Enacted	FY 2015 Request	Outyears	Construction Design Estimate
Container Stewardship Facility (Container Logistics Center)	NA-00	10,000,000	Construct a facility with processing capability to efficiently sustain the numerous types of containers used in the assembly, disassembly, transportation and storage of weapon components in a state of appropriate readiness to meet projected stockpile requirements.	0	0	10,000,000	0	1,500,000

Weapons Activities – Savannah River Site

Project Title	Program	TEC	Project Description	FY 2013 Current	FY 2014 Enacted	FY 2015 Request	Outyears	Construction Design Estimate
Modify Unloading B	CBI	8,000,000	Modify unloading B to allow for unloading of the W76 GTS System	0	0	1,500,000	4,000,000	1,200,000
Replace Leaking Catalyst Vessel System	MR&R	Approx. 5,300,000	Current system has a crack in the vessel. Evaluation is underway to determine a suitable replacement system.	0	0	1,300,000	2,000,000	1,500,000
Install Finishing in H-Area New Manufacturing (HANM) Facility	NA-00	6,000,000	This project will relocate specific operations of reservoir finishing that follows loading: Automatic Leak Detection, Calorimetry, Reservoir Stem Decontamination, Initial Fill Weight, and Radiography. These capabilities will be relocated from H-Area Old Manufacturing (HAOM) and installed in H Area New Manufacturing (HANM). This project will move some equipment out of a 50 year old facility to an existing facility to reduce costs and	0	0	2,800,000	3,200,000	1,500,000

Project Title	Program	TEC	Project Description	FY 2013 Current	FY 2014 Enacted	FY 2015 Request	Outyears	Construction Design Estimate
			co-locate finishing operations in one facility.					
Re-verification	NA-00	6,000,000	This project will relocate the equipment that periodically validates the Department of Transportation (DOT) integrity of the H1616 containers that are used to ship the Gas Transfer System (GTS) components. This capability will be relocated from H-Area Old Manufacturing (HAOM) and installed in 233-23H. An existing warehouse will be modified to provide a facility to certify the o-ring seal on all H1616 containers used to ship Gas Transfer Systems.	0	0	3,000,000	3,000,000	1,000,000
Reservoir Storage	NA-00	Approx. 7,800,000	This project will establish a new vault type room (VTR) location for storage of returned reservoirs prior to unloading. The new VTR will be located in the hardened Tritium Extraction Facility (TEF) and will include upgraded, safety controls. Current operations require a reduced inventory due to safety basis changes.	0	0	1,500,000	6,300,000	1,500,000

Weapons Activities – Nevada National Security Site

Project Title	Program	TEC	Project Description	FY 2013 Current	FY 2014 Enacted	FY 2015 Request	Outyears	Construction Design Estimate
Device Assembly Facility (DAF) Electrical & Control Systems	NA-00	9,000,000	Emergency Backup Power System: Refurbish/improve the DAF emergency power supply system major components consisting of the Uninterruptable Power Supply units, battery backup components,	0	0	1,400,000	7,600,000	1,400,000

Project Title	Program	TEC	Project Description	FY 2013 Current	FY 2014 Enacted	FY 2015 Request	Outyears	Construction Design Estimate
			Automatic Transfer Switches, Paralleling Gear, and the Emergency Diesels with new structural infrastructure and day tanks. This system is vital to DAF, but has passed its designed life with system failures being experienced and replacement parts no longer available and generally not fully supported by the vendor. Automated Energy Management System (AEMS): Replace/enhance the AEMS, also referred to as the DAF "METASYS". The AEMS remotely monitors and locally controls the ventilation and temperature levels of the DAF buildings. The majority of the system's components are significantly past their "end of life" expectations, and this pneumatic-component-based system has experienced difficulty, even through cannibalization, to keep the entire system up to design level specifications. Its antiquated technology and single-point failure issues constantly threaten the ability of System Engineers, Maintenance Technicians, and respected industry vendors to keep the AEMS functioning at a level sufficient to provide the required operation for the established DAF Safety Basis.					

Project Title	Program	TEC	Project Description	FY 2013 Current	FY 2014 Enacted	FY 2015 Request	Outyears	Construction Design Estimate
NNSS Water/Wastewater Systems	NA-00	8,500,000	Water/Wastewater Distribution Systems - Replace/improve water distribution system (lines, routing, service and physical emplacement) to the Control Point (CP) Water Tanks: The greatest potential problem within the water system is located at the Control Point (CP) tanks area where the water lines are currently exposed above ground level and have shifted. This system serves both nuclear and non-nuclear facilities located at the NNSS. The methods for repair could vary from pipeline busting technology to full replacement of the pipe. Appropriate planning will establish the correct replacement methodology. Mercury Sewer Replacement/Re-line: Recent video surveillance within the NNSS sewer system indicates that there are substantial leaks within the sewer system. This project would address the worst cases. Appropriate planning and design will determine the optimal repair/upgrade approaches to include re-lining existing pipes, full replacement in place, or potential system rerouting/enhancement.	0	0	1,200,000	7,300,000	1,200,000

Institutional General Plant Projects (IGPP)
Pursuant to Section 3121 of the Ike Skelton National Defense Authorization Act for FY 2011 (P.L. 111-383), notification is being provided for general plant projects with a total estimated cost of more than $5 million planned for execution in FY 2014 and FY 2015.

FY 2015 Institutional General Plant Projects

Weapons Activities – Nevada National Security Site

Project Title	Program	TEC	Project Description	FY 2013 Current	FY 2014 Enacted	FY 2015 Request	Outyears	Construction Design Estimate
Replace 138kV Power Transmission Line at Hill 200	NA-00	5,800,000	Replace 138kV power transmission line at Hill 200. Reroute line to maintain capability and prevent the line from potentially failing due to a fault, along the most isolated and riskiest areas to repair, on the 138kV route. Run as a radial feed system and accept risk of power outages when faults occur.	0	0	3,300,000	2,500,000	400,000 to 500,0000

Weapons Activities – Sandia National Laboratories

Project Title	Program	TEC	Project Description	FY 2013 Current	FY 2014 Enacted	FY 2015 Request	Outyears	Construction Design Estimate
CA: Site Reconfiguration IGPP	NA-00	9,700,000	This 18,000 SF building will be constructed in the General Access Area (GAA) and provide space for Human Resources, Financial and Facilities organizations currently located in C911 and C912. This will allow for C911 and C911 to serve as classified space for multi-program National Security mission. The 18,000 SF is offset under Freeze the Footprint. Acquisition is a Design-Bid-Build under Firm Fixed Price. (Note: ~$700K will be held in reserve as contingency to assure no overruns beyond the $10M IGPP limits.)	0	0	560,000	9,140,000	600,000

General Plant Projects for NNSA

(Dollars in Thousands)

	FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Request	FY 2015 vs FY 2014 Enacted
General Plant Projects					
Kansas City Plant	3,000	2,000	2,000	16,500	+14,500
Sandia National Laboratories	6,490	7,752	7,752	41,814	+34,062
Los Alamos National Laboratory	0	0	0	7,500	+7,500
Lawrence Livermore National Laboratory	0	3,000	3,000	22,650	+19,650
Pantex Plant	7,120	6,783	6,783	19,200	+12,417
Savannah River Site	2,291	3,876	3,876	33,250	+29,374
Y-12 National Security Complex	5,165	20,600	20,600	16,200	-4,400
Nevada National Security Site	3,588	4,761	4,761	9,600	+4,839
Bettis Atomic Power Laboratory	2,900	0	0	11,808	+11,808
Knolls Atomic Power Laboratory	0	0	0	12,573	+12,573
Total Site, GPP	**30,554**	**48,772**	**48,772**	**191,095**	**+142,323**

Outyears for NNSA

(Dollars in Thousands)

	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
General Plant Projects				
Kansas City Plant	25,000	16,000	13,500	13,500
Sandia National Laboratories	13,131	12,395	30,370	18,850
Los Alamos National Laboratory	6,400	2,500	0	0
Lawrence Livermore National Laboratory	18,000	20,000	20,000	20,000
Pantex Plant	0	0	0	0
Savannah River Site	51,250	36,750	26,050	22,900
Y-12 National Security Complex	5,400	7,500	5,500	2,000
Nevada National Security Site	17,400	900	19,400	14,000
Bettis Atomic Power Laboratory	1,276	4,488	13,863	29,896
Knolls Atomic Power Laboratory	7,977	19,588	13,993	27,221
Total Site, GPP	**145,834**	**120,121**	**142,676**	**148,367**

Institutional General Plant Projects for NNSA

(Dollars in Thousands)

	FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Request	FY 2015 vs FY 2014 Enacted
Institutional General Plant Projects					
Kansas City Plant	0	0	0	0	0
Sandia National Laboratories	28,223	3,678	3,678	70,910	+67,232
Los Alamos National Laboratory	0	0	0	0	0
Lawrence Livermore National Laboratory	1,965	1	1	4,375	+4,374
Pantex Plant	0	0	0	0	0
Savannah River Site	0	0	0	0	0
Y-12 National Security Complex	0	0	0	0	0
Nevada National Security Site	0	0	0	0	0
Bettis Atomic Power Laboratory	0	0	0	0	0
Knolls Atomic Power Laboratory	0	0	0	0	0
Total Site, IGPP	**30,188**	**3,679**	**3,679**	**75,285**	**+71,606**

Outyears for NNSA

(Dollars in Thousands)

	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Institutional General Plant Projects				
Kansas City Plant	0	0	0	0
Sandia National Laboratories	38,780	0	0	0
Los Alamos National Laboratory	0	0	0	0
Lawrence Livermore National Laboratory	4,375	0	0	0
Pantex Plant	0	0	0	0
Savannah River Site	0	0	0	0
Y-12 National Security Complex	0	0	0	0
Nevada National Security Site	0	0	0	0
Bettis Atomic Power Laboratory	0	0	0	0
Knolls Atomic Power Laboratory	0	0	0	0
Total Site, IGPP	**43,155**	**0**	**0**	**0**

Facilities Maintenance and Repair for NNSA

The Department's Facilities Maintenance and Repair activities are tied to the programmatic missions, goals, and objectives. Facilities Maintenance and Repair activities funded by NNSA are displayed below:

Directed-Funded Maintenance and Repair

(Dollars in Thousands)

	FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Request	FY 2015 vs FY 2014 Enacted
Directed-Funded Maintenance and Repair					
Kansas City Plant	33,533	26,788	26,788	21,159	-5,629
Sandia National Laboratories	4,004	46,594	46,594	57,249	+10,655
Los Alamos National Laboratory	76,367	76,725	76,725	77,137	+412
Lawrence Livermore National Laboratory	20,093	12,097	12,097	12,000	-97
Pantex Plant	97,046	76,272	76,272	62,841	-13,431
Savannah River Site	20,531	31,595	31,595	26,216	-5,379
Y-12 National Security Complex	37,228	43,304	43,304	44,885	+1,581
Nevada National Security Site	26,427	34,171	34,171	35,911	+1,740
Bettis Atomic Power Laboratory	12,072	17,666	17,666	21,853	+4,187
Knolls Atomic Power Laboratory	7,444	7,250	7,250	7,628	+378
Total, Directed-Funded Maintenance and Repair	**334,745**	**372,462**	**372,462**	**366,879**	**-5,583**

Outyears for NNSA

(Dollars in Thousands)

	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Directed-Funded Maintenance and Repair				
Kansas City Plant	17,469	17,618	17,889	18,209
Sandia National Laboratories	43,379	58,027	39,396	34,725
Los Alamos National Laboratory	78,679	80,252	81,857	83,494
Lawrence Livermore National Laboratory	12,000	12,000	12,000	12,000
Pantex Plant	59,087	59,056	56,537	68,055
Savannah River Site	28,438	27,254	27,933	30,067
Y-12 National Security Complex	44,681	47,492	48,318	50,160
Nevada National Security Site	30,360	24,817	25,283	25,457
Bettis Atomic Power Laboratory	20,567	18,367	25,871	26,018
Knolls Atomic Power Laboratory	8,046	6,944	8,086	8,266
Total, Directed-Funded Maintenance and Repair	**342,706**	**351,827**	**343,170**	**356,451**

Indirect-Funded Maintenance and Repair

(Dollars in Thousands)

	FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Request	FY 2015 vs FY 2014 Enacted
Indirected-Funded Maintenance and Repair					
Kansas City Plant	0	0	0	0	0
Sandia National Laboratories	75,384	108,438	108,438	106,910	-1,528
Los Alamos National Laboratory	84,927	107,627	107,627	109,315	1,688
Lawrence Livermore National Laboratory	104,624	106,378	106,378	106,378	0
Pantex Plant	0	0	0	0	0
Savannah River Site	3,696	2,618	2,618	2,975	357
Y-12 National Security Complex	31,814	31,350	31,350	31,946	596
Nevada National Security Site	52,702	52,538	52,538	78,644	26,106
Bettis Atomic Power Laboratory	6,951	7,149	7,149	7,084	-65
Knolls Atomic Power Laboratory	17,569	14,788	14,788	15,459	671
Total, Indirected-Funded Maintenance and Repair	**377,667**	**430,886**	**430,886**	**458,711**	**27,825**

Outyears for NNSA

(Dollars in Thousands)

	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Indirected-Funded Maintenance and Repair				
Kansas City Plant	0	0	0	0
Sandia National Laboratories	118,862	132,783	134,504	127,681
Los Alamos National Laboratory	111,057	112,834	114,647	116,496
Lawrence Livermore National Laboratory	106,000	106,000	106,000	106,000
Pantex Plant	0	0	0	0
Savannah River Site	3,028	2,980	2,982	3,374
Y-12 National Security Complex	32,553	33,172	33,802	34,444
Nevada National Security Site	64,569	71,814	68,898	70,502
Bettis Atomic Power Laboratory	7,596	7,944	7,919	7,680
Knolls Atomic Power Laboratory	18,087	11,938	12,120	12,404
Total, Indirected-Funded Maintenance and Repair	**461,752**	**479,465**	**480,872**	**478,581**

Report on FY 2013 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. This report compares the actual maintenance expenditures in FY 2013 to the amount planned for FY 2013, including congressionally directed changes.

Total Costs for Maintenance and Repair

(Dollars in Thousands)

	FY 2013 Actual Cost	FY 2013 Planned Cost
Maintenance and Repair		
Kansas City Plant	33,533	35,553
Sandia National Laboratories	79,388	69,479
Los Alamos National Laboratory	161,294	160,761
Lawrence Livermore National Laboratory	124,717	123,547
Pantex Plant	97,046	96,486
Savannah River Site	24,227	24,227
Y-12 National Security Complex	69,042	69,105
Nevada National Security Site	79,129	70,741
Bettis Atomic Power Laboratory	19,023	22,567
Knolls Atomic Power Laboratory	25,013	18,621
Total, Maintenance and Repair	**712,412**	**691,087**

Safeguards and Security Crosscut

	(Dollars in Thousands)				
	FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Request	FY 2015 vs FY 2014 Enacted
Safeguards and Security					
Protective Forces	382,646	398,931	398,931	370,485	-28,446
Physical Security Systems	77,100	85,934	85,934	79,866	-6,068
Information Security	34,499	37,536	37,536	30,432	-7,104
Personnel Security	29,339	34,810	34,810	34,151	-659
Material Control & Accountability	28,534	29,962	29,962	28,678	-1,284
Program Operations & Planning	72,184	77,808	77,808	74,511	-3,297
Construction [a]	29,161	0	0	0	0
Security Investigations [b]	26,500	27,000	27,000	30,000	3,000
Cyber Security [c]	128,184	119,441	119,441	154,805	35,364
Total, Safeguards and Security	**808,147**	**811,422**	**811,422**	**802,928**	**-8,494**

[a] No funds provided to support 14-D-170 Device Assembly Facility Argus Installation Project, NV

[b] NNSA Security Investigations is not funded under DNS/FS 20.

[c] Cyber Security is funded under a separate control level, FS 21 or MO01.

Homeland Security Crosscut

(Dollars in Thousands)

	FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Request	FY 2015 vs FY 2014 Enacted
National Nuclear Security Administration					
Weapons Activities					
Secure Transportation Asset	201,533	210,000	210,000	233,813	+23,813
Nuclear Counterterrorism Incident Response					
Emergency Response	134,733	143,748	143,748	139,077	-4,671
National Technical Nuclear Forensics	5,668	6,195	6,195	5,668	-527
Emergency Management	10,041	11,000	11,000	10,250	-750
Operations Support	8,373	8,350	8,350	11,850	+3,500
Nuclear Counterterrorism	62,040	51,950	51,950	0	-51,950
Total, Nuclear Counterterrorism Incident Response	**220,855**	**221,243**	**221,243**	**166,845**	**-54,398**
Nuclear Counterrorism/National Security Applications	**9,500**	**0**	**0**	**0**	**0**
Counterrorism & Counterproliferation Programs	**0**	**0**	**0**	**76,901**	**+76,901**
Defense Nuclear Security					
Protective Forces	382,646	398,931	398,931	370,485	-28,446
Physical Security Systems	77,100	85,934	85,934	79,866	-6,068
Information Security	34,499	37,536	37,536	30,432	-7,104
Personnel Security	29,339	34,810	34,810	34,151	-659
Materials Control and Accountability	28,534	29,962	29,962	28,678	-1,284
Security Program Operations & Planning	72,184	77,808	77,808	74,511	-3,297
Construction	29,161	0	0	0	0
Total, Defense Nuclear Security	**653,463**	**664,981**	**664,981**	**618,123**	**-46,858**
NNSA CIO Activities					
Cyber Security	12,000	0	0	0	0
Infrastructure Program	104,780	105,441	105,441	140,805	+35,364
Technology Application Development	0	4,000	4,000	4,000	0
Enterprise Security Computing	11,404	10,000	10,000	10,000	0
Federal Unclassified Information Technology	**[23,000]**	**[25,627]**	**[25,627]**	**[24,841]**	-786
Total, NNSA CIO Activities	128,184	119,441	119,441	154,805	+35,364
Total, Weapons Activities	**1,213,535**	**1,215,665**	**1,215,665**	**1,250,487**	**+34,822**
Defense Nuclear Nonproliferation					
Nonproliferation and Verification R&D					
Proliferation Detection	50,000	50,000	50,000	50,000	-786
Total, Nonproliferation and Verification R&D	**50,000**	**50,000**	**50,000**	**50,000**	**-786**
Global Threat Reduction Initiative					
Domestic Radiological Material Removal	20,532	20,600	20,600	20,645	+45
Domestic Material Protection	62,928	59,400	59,400	57,987	-1,413
Total, Global Threat Reduction Initiative	**83,460**	**80,000**	**80,000**	**78,632**	**-1,368**
Total, Defense Nuclear Nonproliferation	**133,460**	**130,000**	**130,000**	**128,632**	**-1,368**
Total, NNSA	**1,346,995**	**1,345,665**	**1,345,665**	**1,379,119**	**+33,454**

Site Estimates

(Dollars in Thousands)

Site	FY 2013 Current	FY 2014 Enacted	FY 2015 OA/FSE	FY 2015 WA	FY 2015 NN	FY 2015 NR	FY 2015 Total
Argonne National Laboratory	99,015	111,255	0	10,880	77,964	0	88,844
Bechtel Marine Propulsion Corporation	448	465	0	0	0	0	0
Bettis Atomic Power Laboratory	365,000	396,334	0	0	0	565,500	565,500
Brookhaven National Laboratory	21,019	13,769	0	1,140	14,468	0	15,608
Chicago Operations Office	80	1,500	0	0	0	0	0
Consolidated Business Center	3,093	0	0	0	0	0	0
General Atomics	0	21,889	0	23,500	0	0	23,500
Headquarters	1,012,098	1,122,500	308,925	755,710	198,253	102,096	1,364,984
Idaho National Laboratory	227,860	236,105	0	7,133	59,468	166,191	232,792
Idaho Operations Office	1,035	800	0	0	1,000	0	1,000
Kansas City Field Office	6,967	6,729	6,783	0	0	0	6,783
Kansas City Plant	471,236	563,942	0	610,464	2,800	0	613,264
Knolls Atomic Power Laboratory	384,492	438,607	0	0	0	523,213	523,213
Lawrence Berkeley National Laboratory	10,896	4,876	0	0	5,200	0	5,200
Lawrence Livermore National Laboratory	1,096,880	1,063,402	0	1,033,374	70,154	0	1,103,528
Livermore Field Office	17,815	17,277	17,426	0	0	0	17,426
Los Alamos Field Office	16,514	15,758	15,906	0	0	0	15,906
Los Alamos National Laboratory	1,536,023	1,609,107	0	1,417,592	185,428	0	1,603,020
National Energy Technology Laboratory	13,765	13,291	0	9,148	0	0	9,148
Naval Reactors Laboratory Field Office	20,996	18,515	0	0	0	20,100	20,100
Naval Research Laboratory	0	4,451	0	7,000	0	0	7,000
Nevada National Security Site	335,774	316,985	0	243,748	48,735	0	292,483
Nevada Field Office	87,903	90,723	16,862	71,346	0	0	88,208
New Brunswick Laboratory	717	804	0	0	800	0	800
NNSA ABQ Complex (all other sites)	434,166	612,969	0	469,788	86,462	0	556,250
NNSA Production Office	3,587	0	0	6,766	0	0	6,766
Oak Ridge Institute for Science and Engineering	14,620	20,701	0	18,726	0	0	18,726
Oak Ridge National Laboratory	133,223	108,261	0	5,135	92,885	0	98,020
Oak Ridge Operations Office	95,717	62,000	0	0	0	0	0
Office of Science and Technical Information	391	229	0	255	6	0	261
Pacific Northwest National Laboratory	333,275	317,048	0	19,769	229,672	0	249,441
Pantex Plant	544,373	590,817	0	611,719	5,450	0	617,169
Pantex Field Office	11,933	11,160	11,256	0	0	0	11,256
Princeton University	150	0	0	0	0	0	0
Richland Operations Office	1,601	6,150	0	6,045	0	0	6,045
Sandia National Laboratories	1,417,966	1,564,869	0	1,530,470	141,269	0	1,671,739
Sandia Field Office	15,374	15,718	15,850	0	0	0	15,850
Savannah River Operations Office	458,522	384,869	0	0	229,431	0	229,431
Savannah River Site	344,926	330,760	0	250,991	68,575	0	319,566
Savannah River Site Office	4,941	6,120	5,076	1,695	0	0	6,771
Stanford Linear Accelerator Center	4,430	0	0	0	0	0	0
University of Rochester/LLE	1,500	64,375	0	63,500	0	0	63,500
Westinghouse TRU Solutions (WIPP)	22	8,437	0	8,437	0	0	8,437
Y-12 National Security Complex	1,110,728	1,150,054	0	1,127,584	37,136	0	1,164,720
Y-12 Field Office	13,246	16,362	12,758	2,987	0	0	15,745
Grand Total	10,674,317	11,339,983	410,842	8,314,902	1,555,156	1,377,100	11,658,000

Federal Salaries and Expenses

Federal Salaries and Expenses

National Nuclear Security Administration Federal Salaries and Expenses (formerly "Office of the Administrator")
Proposed Appropriation Language

For necessary expenses for Federal Salaries and Expenses (previously Office of the Administrator) in the *National Nuclear Security Administration*, $410,842,000 to remain available until September 30, *2016,* including official reception and representation expenses not to exceed $12,000.

Explanation of Changes

In FY 2015, the request proposes to rename the "Office of the Administrator" to "National Nuclear Security Administration Federal Salaries and Expenses" to better reflect the purpose for how funding will be used.

The FY 2015 Budget Request provides funding for 1,710 full-time-equivalents and Federal support needed to meet mission requirements. The Request constitutes a $33,842,000 increase due largely to a congressionally directed functional transfer of $11,809,000 from the Weapons Activities account for Corporate Project Management and a one-time cost of $19,900,000 to pay for moving to a different leased facility for the NNSA Albuquerque Complex. After adjusting for these two requirements, funding for salaries and expenses is essentially unchanged from FY 2014 enacted levels.

Public Law Authorizations

- P.L. 106-65, National Nuclear Security Administration Act, as amended
- P.L. 113-66, National Defense Authorization Act for Fiscal Year 2014
- P.L. 113-76, Consolidated Appropriations Act 2014

National Nuclear Security Administration Federal Salaries and Expenses (formerly "Office of the Administrator")

(Dollars in Thousands)

FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Request
377,457	377,000	377,000	410,842

Overview

NNSA's **Federal Salaries and Expenses** provides for a well-managed and accountable organization by supporting a highly-educated and skilled federal workforce to provide effective federal program oversight and financial management in close partnership with the national laboratories and our production facilities. The NNSA workforce consists of a diverse cadre of scientists, engineers, foreign affairs specialists, and managers who execute the NNSA's critical nuclear and national security mission. This appropriation also funds mission support functions that provide financial management, human capital management, corporate project management, legal services, procurement and contract management, and security, safety and health. The account also funds many NNSA contributions to the Department's Working Capital Fund, NNSA space and occupancy expenses, and other administrative expenses.

In addition to headquarters and the Albuquerque complex, the organizational structure includes seven site offices across seven states that oversee NNSA laboratory and production facility operations located at Lawrence Livermore, Los Alamos, and Sandia National Laboratories; the NNSA Production Office including the Pantex Plant and the Y-12 National Security Complex; Kansas City Plant; the Savannah River Site; and the Nevada National Security Site.

Additionally, this appropriation funds mission support functions including program review and analysis functions (PR&A) – a new organization created in FY 2013 in coordination with Department of Defense Cost Assessment and Program Evaluation (CAPE) – procurement, financial management, human capital management, corporate project management, legal services and safety and health.

Highlights and Major Changes in the FY 2015 Budget Request

In FY 2015, the request proposes to rename the "Office of the Administrator" to "National Nuclear Security Administration Federal Salaries and Expenses" to better reflect the purpose for how funding will be used.

The request includes a $19,900,000 increase to fund the move to a different leased facility for the NNSA Albuquerque complex. The leased facility is needed due to inadequate building systems, including sewer, water, power, communications and gas distribution that are beyond their useful lives, resulting in an extensive backlog of repairs and maintenance.

The request also includes the functional transfer of $11,809,000 from Weapons Activities, Site Stewardship to NNSA Federal Salaries and Expenses for Corporate Project Management. This is consistent with the explanatory statement accompanying the P.L. 113-76, Consolidated Appropriation Act for 2014 which directs the NNSA to include future funding requests for corporate project management under NNSA Federal Salaries and Expenses.

The request is designed to support a more agile governance model for the nuclear security enterprise, including the national laboratories, production plants, processing facilities, and the national security site, and to consistently succeed in meeting the NNSA's diverse and critical mission in an effective and cost efficient manner. One of the many changes made in the past year includes implementing a more unified model of governance where there is better NNSA mission integration between the NNSA Administrator, NNSA Field Office Managers, and Lab/Plant Directors.

NNSA continues to identify management efficiencies, particularly in travel and support services, to provide a lean and efficient organization and to support the President's Executive Order "*Promoting Efficient Spending*". These administrative savings are reflected in the FY 2013-FY 2019 funding levels.

As responsible stewards of the taxpayer's money, NNSA has taken steps to reduce spending on Federal program direction. Some actions taken include: reducing Federal FTEs by 9.3 percent relative to FY 2012 enacted levels; by exercising extreme judiciousness in making selective hires/backfills; and further reducing travel and support services from previous requests.

In FY 2014 and FY 2015, NNSA will continue its on-going efforts to plan strategically to meet current and future workforce needs. We will analyze how changes in mission are affecting job requirements. In order to address reduced staffing levels, reshaping of the workforce over the next several years will be essential. In FY 2013, NNSA used the authority granted by the Office of Personnel Management to offer voluntary separation incentive payments and early retirements to help right-size its workforce and as a cost savings measure. NNSA will explore whether this is a good option to support workforce restructuring again in FY 2015. Because reshaping involves both obtaining the right size and getting the right skill sets, NNSA will plan to fill a number of mission critical positions in FY 2014 and FY 2015 while maintaining a workforce that is well below the FY 2012 levels of 1,886 FTEs.

Major Outyear Priorities and Assumptions

Outyear funding levels for the NNSA Federal Salaries and Expenses appropriation total $1,684,988 for FY 2016 through FY 2019. The five year funding plan assumes a Federal staffing level of 1,710 Full-Time Equivalents (FTEs) consistent with the anticipated FY 2015 staffing level. Adjustments to NNSA Federal Salaries and Expenses staffing will be made in the FYNSP requests as NNSA mission needs change. It also includes funding to support corporate project management.

Department of Energy (DOE) Working Capital Fund (WCF) Support

The NNSA Federal Salaries and Expenses appropriation projected contribution to the DOE WCF for FY 2015 is $43,866,000. This reflects no increase from the FY 2014 enacted levels. The Department is working to achieve economies of scale through an enhanced Working Capital Fund.

NNSA Graduate Fellowship Program (NGFP) Support

The NNSA manages a technical fellowship program to cultivate the next generation of future leaders in nonproliferation, nuclear security, and international security to create a pipeline of highly qualified professionals who will sustain expertise in these areas through future employment within the National nuclear security enterprise.

In FY 2015, the NNSA Federal Salaries and Expenses appropriation will provide up to approximately $500,000 for NGFP activities in the areas of international operations, nuclear safety and health, and NNSA program support.

National Nuclear Security Administration Federal Salaries and Expenses (formerly "Office of the Administrator")
Funding by Congressional Control

(Dollars in Thousands)

	FY 2013 Current	FY 2014 Enacted	FY 2014 Adjustments	FY 2014 Current	FY 2015 Request	FY 2015 vs FY 2014 Enacted
Office of the Administrator	**377,457**	**377,000**	**0**	**377,000**	**0**	**-377,000**
NNSA Federal Salaries and Expenses	**0**	**0**	**0**	**0**	**410,842**	**+410,842**

Outyears for NNSA Federal Salaries and Expenses

(Dollars in Thousands)

	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
NNSA Federal Salaries and Expenses	**408,786**	**416,643**	**424,778**	**434,781**

National Nuclear Security Administration Federal Salaries and Expenses (formerly "Office of the Administrator")
Budget Structure Changes

In FY 2015, the Office of the Administrator is proposing to rename National Nuclear Security Administration Federal Salaries and Expenses. The current name is misleading in that it appears to describe only those functions supporting the Office of the Administrator directly. Instead, the account funds all Federal employees and related expenses in support of the mission of the National Nuclear Security Administration, except for program direction of Naval Reactors and the Office of Secure Transportation. The new name will more appropriately describe the function of the account and what it supports.

In FY 2015, Corporate Project Management is transferred from the Weapons Activities Appropriation to the NNSA Federal Salaries and Expenses Appropriation. This is consistent with the explanatory statement accompanying P.L. 113-76, Consolidated Appropriation Act for 2014 which directs the NNSA to include future funding requests for corporate project management in NNSA Federal Salaries and Expenses. The Corporate Project Management program was established to address long-standing needs identified by the Department, Congress and GAO to strengthen project management.

FY 2015 Budget Structure

	National Nuclear Security Administration Federal Salaries and Expenses				
	Salaries and Benefits	**Travel**	**Support Services**	**Other Related Expenses**	**Total**
FY 2014 Budget Structure					
Office of the Administrator					399,033
Salaries and Benefits					
Travel					
Support Services					
Other Related Expenses					
Total, Office of the Administrator					**399,033**
Weapons Activities					
Site Stewardship			11,809		11,809
Corporate Project Management					
Total Weapons Activities			**11,809**		
Total, OA and WA					**410,842**

National Nuclear Security Administration Federal Salaries and Expenses (formerly "Office of the Administrator")

Overview

Salaries and Benefits: Provides for the Federal staff that oversees the operations of the national security missions related to the safety and reliability of the nuclear weapons stockpile, emergency response, nuclear nonproliferation coordination, safeguards and security oversight, strategic coordination of counterterrorism and counter-proliferation initiatives, providing safe, secure, and compliant facilities and infrastructure, and mission support to include: program review and analysis (PR&A), procurement, financial management, human capital management, legal services and safety and health.

Travel: Supports domestic and foreign travel necessary to conduct NNSA business. Domestic travel provides management oversight, public outreach, and national security assistance and interface with the Field Offices, Headquarters, the laboratories and plants, and local governments. International travel is a key element of the nonproliferation work with international agencies, the former Soviet Union republics, and other international partners.

Support Services: Includes Management and Professional Services to assist, advise, or train staff to achieve efficient and effective management and operation of organizations, activities, and systems, including administrative support; Studies, Analyses, and Evaluations to support policy development, decision-making, management, or administration; and Engineering and Technical Services to assist NNSA Federal staff in highly specialized areas, including services essential to planning, research and development, production, and maintenance of major acquisition, weapon system, or other major systems. Also, beginning in FY 2015, Corporate Project Management is included in NNSA Federal Salaries and Expenses, Support Services. Funding for this activity was transferred from the Weapons Activities Appropriation to the NNSA Federal Salaries and Expenses Appropriation consistent with the explanatory statement accompanying the P.L. 113-76, Consolidated Appropriation Act for 2014 which directs the NNSA to include future funding requests for corporate project management under NNSA Federal Salaries and Expenses.

Other Related Expenses: Provides funding for Space and Occupancy costs for Headquarters and Field Offices, including NNSA Federal Salaries and Expenses contribution to the DOE Working Capital Fund and overall operations and maintenance of both rented and federally owned space; necessary training and skills maintenance of the NNSA Federal staff; funding for the E-Gov initiative; and miscellaneous procurements.

Highlights of the FY 2015 Budget Request

In accordance with the explanatory statement accompanying P.L. 113-76, Consolidated Appropriation Act for 2014, in FY 2015, Corporate Project Management is transferred from the Weapons Activities Appropriation (Site Stewardship) to Support Services within the NNSA Federal Salaries and Expenses Appropriation. The Corporate Project Management program was established to address long-standing needs identified by the Department, Congress and GAO to strengthen project management.

National Nuclear Security Administration Federal Salaries and Expenses (formerly "Office of the Administrator")

Program Direction

(dollars in thousands)

	FY 2013 Current	FY 2014 Enacted	FY 2015 Request	FY 2015 vs FY 2014 Enacted
NNSA Federal Salaries and Expenses				
Headquarters				
Salaries and Benefits	206,511	194,309	195,562	+1,253
Travel	9,605	12,076	12,076	0
Support Services	11,312	10,713	22,522	+11,809
Other Related Expenses	45,190	58,865	78,765	+19,900
Total, Headquarters	272,618	275,963	308,925	+32,962
Total, Full Time Equivalents	1,198	1,180	1,180	0
Livermore Field Office				
Salaries and Benefits	15,461	14,918	15,067	+149
Travel	186	235	235	0
Support Services	574	585	585	0
Other Related Expenses	1,594	1,539	1,539	0
Total, Livermore Field Office	17,815	17,277	17,426	+149
Total, Full Time Equivalents	88	84	84	0
Los Alamos Field Office				
Salaries and Benefits	15,641	14,834	14,982	+148
Travel	180	200	200	0
Support Services	204	210	210	0
Other Related Expenses	489	514	514	0
Total, Los Alamos Field Office	16,514	15,758	15,906	+148
Total, Full Time Equivalents	96	88	88	0

National Nuclear Security Administration Federal Salaries and Expenses (formerly "Office of the Administrator")

Program Direction, Continued

(dollars in thousands)

	FY 2013 Current	FY 2014 Enacted	FY 2015 Request	FY 2015 vs FY 2014 Enacted
Sandia Field Office				
Salaries and Benefits	12,563	13,207	13,339	+132
Travel	310	260	260	0
Support Services	431	175	175	0
Other Related Expenses	2,070	2,076	2,076	0
Total, Sandia Field Office	15,374	15,718	15,850	+132
Total, Full Time Equivalents	80	83	83	+0
Nevada Field Office				
Salaries and Benefits	15,581	14,616	14,762	+146
Travel	190	243	243	0
Support Services	649	350	350	0
Other Related Expenses	1,629	1,507	1,507	0
Total, Nevada Field Office	18,049	16,716	16,862	+146
Total, Full Time Equivalents	90	84	84	0
NNSA Production Office (NPO)				
NPO Pantex				
Salaries and Benefits	10,313	9,564	9,660	+96
Travel	238	302	302	0
Support Services	267	213	213	0
Other Related Expenses	1,115	1,081	1,081	0
Total, NPO Pantex	11,933	11,160	11,256	+96
Full Time Equivalents	65	60	60	0

National Nuclear Security Administration Federal Salaries and Expenses (formerly "Office of the Administrator")
Program Direction, Continued

(dollars in thousands)

	FY 2013 Current	FY 2014 Enacted	FY 2015 Request	FY 2015 vs FY 2014 Enacted
NPO Y12				
Salaries and Benefits	11,624	10,812	10,920	+108
Travel	232	295	295	0
Support Services	309	171	171	0
Other Related Expenses	1,081	1,372	1,372	0
Total, NPO Y12	13,246	12,650	12,758	+108
Full Time Equivalents	72	68	68	0
Total, NNSA Production Office	25,179	23,810	24,014	+204
Total, Full Time Equivalents	137	128	128	0
Kansas City Field Office				
Salaries and Benefits	5,714	5,420	5,474	+54
Travel	118	191	191	0
Support Services	203	296	296	0
Other Related Expenses	932	822	822	0
Total, Kansas City Field Office	6,967	6,729	6,783	+54
Total, Full Time Equivalents	38	35	35	0
Savannah River Field Office				
Salaries and Benefits	4,613	4,683	4,730	+47
Travel	149	140	140	0
Support Services	84	87	87	0
Other Related Expenses	95	119	119	0
Total, Savannah River Field Office	4,941	5,029	5,076	+47
Total, Full Time Equivalents	30	28	28	0

National Nuclear Security Administration Federal Salaries and Expenses (formerly "Office of the Administrator")

Program Direction, Continued

(dollars in thousands)

	FY 2013 Current	FY 2014 Enacted	FY 2015 Request	FY 2015 vs FY 2014 Enacted
NNSA Federal Salaries and Expenses				
Salaries and Benefits	298,021	282,363	284,496	+2,133
Travel	11,208	13,942	13,942	0
Support Services	14,033	12,800	24,609	+11,809
Other Related Expenses	54,195	67,895	87,795	+19,900
Total, NNSA Federal Salaries and Expenses	377,457	377,000	410,842	+33,842
Total, FTEs	1,757	1,710	1,710	0

National Nuclear Security Administration Federal Salaries and Expenses (formerly "Office of the Administrator")

Support Services and Other Related Expenses

(dollars in thousands)

	FY 2013 Current	FY 2014 Enacted	FY 2015 Request	FY 2015 vs FY 2014 Enacted
Support Services				
Management and Professional Services	12,677	11,279	11,279	0
Studies, Analyses, and Evaluations	800	1,025	1,025	0
Engineering and Technical Services				
Other Technical Support	268	208	208	0
ES&H Support	52	52	52	0
Project Management Support	236	236	236	0
Total, Engineering and Technical Services	556	496	496	0
Corporate Project Management	0	0	11,809	+11,809
Total, Support Services	**14,033**	**12,800**	**24,609**	**+11,809**
Other Related Expenses				
Training	3,567	4,124	4,124	0
Space and Occupancy Costs	15,745	15,469	35,369	+19,900

National Nuclear Security Administration Federal Salaries and Expenses (formerly "Office of the Administrator")

Support Services and Other Related Expenses, Continued

(dollars in thousands)

	FY 2013 Current	FY 2014 Enacted	FY 2015 Request	FY 2015 vs FY 2014 Enacted
Headquarters Working Capital Fund (WCF)				
Supplies	443	502	429	-73
Mail Services	671	676	676	0
Copying Service	604	730	713	-17
Printing and Graphics	310	367	362	-5
Building Occupancy	13,423	19,157	18,949	-208
Telecommunications	3,383	5,160	5,237	+77
Procurement (DCAA)	0	210	184	-26
Corporate Training Services	47	218	273	+55
Project Management (PMCDP)	367	368	364	-4
iMANAGE	1,087	3,463	3,750	+287
Financial Statement Audits	0	77	0	-77
Internal Control (A-123)	0	36	0	-36
Indirect	1,934	0	0	0
Pensions	0	65	0	-65
Overseas Representation	0	10,246	10,246	0
Interagency Transfers to GSA	0	2,199	2,250	+51
Health Services	0	392	433	+41
TOTAL, Headquarters Working Capital Fund (WCF)	22,269	43,866	43,866	0
Other Expenses				
International Offices	4,669	0	0	0
Other Services	7,933	4,424	4,424	0
Reception and representation	12	12	12	0
Subtotal, Other Expenses	12,614	4,436	4,436	0
Total, Other Related Expenses	**54,195**	**67,895**	**87,795**	**+19,900**

National Nuclear Security Administration Federal Salaries and Expenses (formerly "Office of the Administrator")

Program Direction

	(dollars in thousands)			
	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
NNSA Federal Salaries and Expenses				
Headquarters				
Salaries and Benefits	200,451	205,462	210,599	215,864
Travel	12,318	12,564	12,815	13,071
Support Services	22,972	23,431	23,900	24,378
Other Related Expenses	68,644	68,243	67,915	69,251
Total, Headquarters	304,385	309,700	315,229	322,564
Total, Full Time Equivalents	1,180	1,180	1,180	1,180
Livermore Field Office				
Salaries and Benefits	15,444	15,830	16,226	16,632
Travel	240	245	250	255
Support Services	597	609	621	633
Other Related Expenses	1,570	1,601	1,633	1,666
Total, Livermore Field Office	17,851	18,285	18,730	19,186
Total, Full Time Equivalents	84	84	84	84
Los Alamos Field Office				
Salaries and Benefits	15,357	15,741	16,135	16,538
Travel	204	208	212	216
Support Services	214	218	222	226
Other Related Expenses	524	534	545	556
Total, Los Alamos Field Office	16,299	16,701	17,114	17,536
Total, Full Time Equivalents	88	88	88	88

National Nuclear Security Administration Federal Salaries and Expenses (formerly "Office of the Administrator")

Program Direction, Continued

	(dollars in thousands)			
	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Sandia Field Office				
Salaries and Benefits	13,672	14,014	14,364	14,723
Travel	265	270	275	281
Support Services	179	183	187	191
Other Related Expenses	2,118	2,160	2,203	2,247
Total, Sandia Field Office	16,234	16,627	17,029	17,442
Total, Full Time Equivalents	83	83	83	83
Nevada Field Office				
Salaries and Benefits	15,131	15,509	15,897	16,294
Travel	248	253	258	263
Support Services	357	364	371	378
Other Related Expenses	1,537	1,568	1,599	1,631
Total, Nevada Field Office	17,273	17,694	18,125	18,566
Total, Full Time Equivalents	84	84	84	84
NNSA Production Office (NPO)				
NPO Pantex				
Salaries and Benefits	9,902	10,150	10,404	10,664
Travel	308	314	320	326
Support Services	217	221	225	230
Other Related Expenses	1,103	1,125	1,148	1,171
Total, NPO Pantex	11,530	11,810	12,097	12,391
Full Time Equivalents	60	60	60	60

National Nuclear Security Administration Federal Salaries and Expenses (formerly "Office of the Administrator")

Program Direction, Continued

(dollars in thousands)

	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
NPO Y12				
Salaries and Benefits	11,193	11,473	11,760	12,054
Travel	301	307	313	319
Support Services	174	177	181	185
Other Related Expenses	1,399	1,427	1,456	1,485
Total, NPO Y12	13,067	13,384	13,710	14,043
Full Time Equivalents	68	68	68	68
Total, NNSA Production Office	24,597	25,194	25,807	26,434
Total, Full Time Equivalents	128	128	128	128
Kansas City Field Office				
Salaries and Benefits	5,611	5,751	5,895	6,042
Travel	195	199	203	207
Support Services	302	308	314	320
Other Related Expenses	838	855	872	889
Total, Kansas City Field Office	6,946	7,113	7,284	7,458
Total, Full Time Equivalents	35	35	35	35
Savannah River Field Office				
Salaries and Benefits	4,848	4,969	5,093	5,220
Travel	143	146	149	152
Support Services	89	91	93	95
Other Related Expenses	121	123	125	128
Total, Savannah River Field Office	5,201	5,329	5,460	5,595
Total, Full Time Equivalents	28	28	28	28

National Nuclear Security Administration Federal Salaries and Expenses (formerly "Office of the Administrator")

Program Direction, Continued

	(dollars in thousands)			
	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
NNSA Federal Salaries and Expenses				
Salaries and Benefits	291,609	298,899	306,373	314,031
Travel	14,222	14,506	14,795	15,090
Support Services	25,101	25,602	26,114	26,636
Other Related Expenses	77,854	77,636	77,496	79,024
Total, NNSA Federal Salaries and Expenses	408,786	416,643	424,778	434,781
Total, FTEs	1,710	1,710	1,710	1,710

National Nuclear Security Administration Federal Salaries and Expenses (formerly "Office of the Administrator")

Support Services and Other Related Expenses

	(dollars in thousands)			
	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Support Services				
Management and Professional Services	11,505	11,735	11,969	12,209
Studies, Analyses, and Evaluations	1,046	1,066	1,088	1,109
Engineering and Technical Services				
Other Technical Support	212	216	221	225
ES&H Support	53	54	55	56
Project Management Support	241	246	250	255
Total, Engineering and Technical Services	506	516	526	537
Corporate Project Management	12,045	12,286	12,532	12,782
Total, Support Services	**25,101**	**25,603**	**26,115**	**26,638**
Other Related Expenses				
Training	4,206	4,291	4,376	4,464
Space and Occupancy Costs	24,381	23,092	21,862	22,275

National Nuclear Security Administration Federal Salaries and Expenses (formerly "Office of the Administrator")
Support Services and Other Related Expenses, Continued

	(dollars in thousands)			
	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Headquarters Working Capital Fund (WCF)				
Supplies	438	446	455	464
Mail Services	690	703	717	732
Copying Service	727	742	757	772
Printing and Graphics	369	377	384	392
Building Occupancy	19,328	19,715	20,109	20,511
Telecommunications	5,342	5,449	5,558	5,669
Procurement (DCAA)	188	191	195	199
Corporate Training Services	278	284	290	296
Project Management (PMCDP)	371	379	386	394
iMANAGE	3,825	3,902	3,980	4,059
Financial Statement Audits	0	0	0	0
Internal Control (A-123)	0	0	0	0
Indirect	0	0	0	0
Pensions	0	0	0	0
Overseas Representation	10,451	10,660	10,873	11,091
Interagency Transfers to GSA	2,295	2,341	2,388	2,435
Health Services	442	450	460	469
TOTAL, Headquarters Working Capital Fund	44,743	45,638	46,551	47,482
Other Expenses				
International Offices	0	0	0	0
Other Services	4,512	4,603	4,695	4,789
Reception and representation	12	12	13	13
Subtotal, Other Expenses	4,525	4,615	4,708	4,802
Total, Other Related Expenses	**77,856**	**77,636**	**77,497**	**79,023**

National Nuclear Security Administration Federal Salaries and Expenses (formerly "Office of the Administrator")
Program Direction

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs. FY 2014 Enacted
Salaries and Benefits		
• Provide support for an NNSA Federal staff of 1,710 full-time equivalents (FTEs).	• Provide support for an NNSA Federal staff of 1,710 full-time equivalents (FTEs). Includes payroll escalation including benefits, performance pay increases, +1.0% for the calendar year 2015 pay raise. Pay and benefit escalation will be offset with attrition backfill savings. **FY 2016-FY 2019** • Continues to provide support for a steady staffing level of 1,710. • NNSA will continue to reshape the workforce across the FYNSP to ensure future mission needs are met.	• The increase reflects the projected +1% pay raise. Pay and benefit escalation will be offset with attrition backfill savings. In FY 2015, NNSA will continue to reshape the workforce to ensure accomplishment of the NNSA mission while at a reduced Federal staffing level.
Travel		
• Supports domestic and foreign travel necessary to conduct NNSA business. • Reflects NNSA efficiencies achieved in support of the President's Executive Order "Promoting Efficient Spending."	• Supports domestic and foreign travel necessary to conduct NNSA business • Reflects NNSA efficiencies achieved in support of the President's Executive Order "Promoting Efficient Spending." **FY 2016-FY 2019** • Continue at the reduced level.	• No change
Support Services		
• Includes Management and Professional Services; Studies, Analyses, and Evaluations; and Engineering and Technical Services to support the NNSA Federal staff. • Reflects the FY 2013 support service reduction based on Sequestration and efficiencies achieved in support of the President's Executive Order "Promoting Efficient Spending."	• Includes Management and Professional Services; Studies, Analyses, and Evaluations; and Engineering and Technical Services; and Corporate Project Management to support the NNSA Federal staff • Reflects efficiencies achieved in support of the President's Executive Order "Promoting Efficient Spending."	• Increase reflects the functional transfer of $11,809,000 from Weapons Activities, Site Stewardship to NNSA Federal Salaries and Expenses consistent with congressional direction contained in the P.L. 113-76, Consolidated Appropriation Act for 2014.

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs. FY 2014 Enacted
	• Includes the transfer of $11,809,000 from Weapons Activities, Site Stewardship *to* NNSA Federal Salaries and Expenses consistent with congressional direction contained in the P.L. 113-76, Consolidated Appropriation Act for 2014. **FY 2016-FY 2019** • Continue at the reduced level.	
Other Related Expenses		
• Provides funding for Space and Occupancy costs for Headquarters and the field including the NNSA Federal Salaries and Expenses contribution to the Working Capital Fund and overall operations and maintenance of both rented and federally owned space; necessary training and skills maintenance of the NNSA Federal staff; funding for the E-Gov initiative; and miscellaneous procurements.	• Provides funding for Space and Occupancy costs for Headquarters and the field including the NNSA DOE Federal Salaries and Expenses contribution to the DOE Working Capital Fund and overall operations and maintenance of both rented and federally owned space; necessary training and skills maintenance of the NNSA Federal staff; funding for the E-Gov initiative; and miscellaneous procurements. • Includes $19,900,000 to fund the move to a different leased facility for the NNSA Albuquerque complex. The facility is needed due to inadequate building systems, most beyond useful life with extensive backlog of needed repairs and maintenance. **FY 2016-FY 2019** • Working Capital Fund estimates for the outyears are not provided by the Department. Therefore, NNSA's Request assumes that contributions will continue at the FY 2015 level with escalation.	• Increase reflects an addition of $19,900,000 to fund the move to a different leased facility for the NNSA Albuquerque complex. The leased facility is needed due to inadequate building systems, most beyond useful life with extensive backlog of needed repairs and maintenance. The current assumption is that the replacement facility will be a multi-year GSA lease. The FY 2015 amount is for the upfront costs to implement, e.g. GSA fee; IT and phone equipment; physical security equipment; new furniture; tenant improvements; relocation services; and stasis of old buildings; and increased annual operating costs. • The DOE Working Capital Fund contribution is straight-lined from FY 2014.

National Nuclear Security Administration Federal Salaries and Expenses (formerly "Office of the Administrator")
Performance Measures

In accordance with the GPRA Modernization Act of 2010, the Department sets targets for, and tracks progress toward, achieving performance goals for each program. For more information, refer to the Department's FY 2013 Annual Performance Report.

	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Federal Administrative Costs - Maintain NNSA Federal Salaries and Expenses Federal administrative costs as a percentage of total Weapons Activities and Defense Nuclear Nonproliferation program costs at less than 6%.							
Target	5.9 %	5.9 %	5.9 %	5.9 %	5.9 %	5.9 %	5.9 %
Result	**Exceeded** – 4.2						
Endpoint Target	In keeping with OMB and DOE expectations that administrative costs be minimized, maintain the NNSA Federal Salaries and Expenses Federal administrative costs as a percentage of total Weapons Activities and Defense Nuclear Nonproliferation program costs at less than 6%.						

Department Of Energy
FY 2015 Congressional Budget
Funding By Appropriation By Site
($K)

Office of the Administrator	FY 2013 Current	FY 2014 Enacted	FY 2015 Request
Kansas City Site Office			
Office of the Administrator			
Office of the Administrator	6,967	6,729	0
Total, Kansas City Site Office	**6,967**	**6,729**	**0**
Livermore Site Office			
Office of the Administrator			
Office of the Administrator	17,815	17,277	0
Total, Livermore Site Office	**17,815**	**17,277**	**0**
Los Alamos Site Office			
Office of the Administrator			
Office of the Administrator	16,514	15,758	0
Total, Los Alamos Site Office	**16,514**	**15,758**	**0**
Nevada Site Office			
Office of the Administrator			
Office of the Administrator	18,049	16,716	0
Total, Nevada Site Office	**18,049**	**16,716**	**0**
NNSA Production Office (NPO)			
Office of the Administrator			
Office of the Administrator	25,179	23,810	0
Total, NNSA Production Office (NPO)	**25,179**	**23,810**	**0**
Sandia Site Office			
Office of the Administrator			
Office of the Administrator	15,374	15,718	0
Total, Sandia Site Office	**15,374**	**15,718**	**0**
Savannah River Site Office			
Office of the Administrator			
Office of the Administrator	4,941	5,029	0
Total, Savannah River Site Office	**4,941**	**5,029**	**0**
Washington Headquarters			
Office of the Administrator			
Office of the Administrator	272,618	275,963	0
Total, Washington Headquarters	**272,618**	**275,963**	**0**
Total, Office of the Administrator	**377,457**	**377,000**	**0**

Department Of Energy
FY 2015 Congressional Budget
Funding By Appropriation By Site
($K)

Federal Salaries and Expenses	FY 2013 Current	FY 2014 Enacted	FY 2015 Request
NNSA Production Office (NPO)			
Federal Salaries and Expenses			
Federal Salaries and Expenses	0	0	24,014
Total, NNSA Production Office (NPO)	**0**	**0**	**24,014**
Total, Federal Salaries and Expenses	**0**	**0**	**24,014**

Weapons Activities

Weapons Activities

FY 2015 Congressional Budget Request

Weapons Activities

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Weapons Activities
Proposed Appropriation Language

For Department of Energy expenses, including the purchase, construction, and acquisition of plant and capital equipment and other incidental expenses necessary for atomic energy defense weapons 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 the purchase of not to exceed 4 passenger vehicles,* $8,314,902,000 to remain available until expended.

Explanation of Change

The FY 2015 Request provides an increase from the FY 2014 Enacted level. Increases are requested in support of the Nuclear Weapons Council (NWC) approved “3+2” strategy, which aims to implement NPR guidance to reduce the number and types of weapons in the stockpile while maintaining a safe, secure and effective deterrent. The request also continues to invest in the scientific and engineering foundation and in critical infrastructure.

Public Law Authorizations

- P.L. 106-65, National Nuclear Security Administration Act, as amended
- P.L. 113-66, National Defense Authorization Act for Fiscal Year 2014
- P.L. 113-76, Consolidated Appropriations Act 2014

Weapons Activities

(Dollars in Thousands)			
FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Request
6,966,855	**7,781,000**	**7,781,000**	**8,314,902**

Overview

The Weapons Activities appropriation includes funding for activities that respond directly to the National Security Strategy of the United States, and are central to the Department of Energy's pursuit of its Strategic Plan Goal of Nuclear Security, playing a critical role in meeting DOE's Strategic Objective 4 to maintain the safety, security and effectiveness of the nation's nuclear deterrent without nuclear testing. Specifically, DOE/NNSA provides for the advanced science, engineering, and technology capabilities and their application to assess, maintain, and where necessary extend the life of the nuclear weapons stockpile. To accomplish this stockpile stewardship and management, the appropriation provides for modernization and maintenance of high security, technical and unique facilities and infrastructure. This appropriation is closely aligned with the Department of Defense (DoD) requirements to ensure the U.S. nuclear deterrent continues to be safe, secure, and effective.

The programs of the Weapons Activities appropriation are conducted primarily at eight sites by a workforce of approximately 30,000 people. These programs are managed by a federal workforce, composed of civilian and military staffs that are ultimately accountable to Congress, the President, and the public. Details about these programs are found in the FY 2015 Stockpile Stewardship and Management Plan.

Highlights and Major Changes in the FY 2015 Budget

Programs funded within the Weapons Activities appropriation support the nation's current and future defense posture, and its attendant nationwide infrastructure of science, technology and engineering capabilities. Weapons Activities provides for the maintenance and refurbishment of nuclear weapons to sustain confidence in their safety, reliability, and performance; expansion of scientific, engineering, and manufacturing capabilities to enable certification of the enduring nuclear weapons stockpile; and manufacture of nuclear weapon components. Weapons Activities provides for continued maintenance and investment in the NNSA nuclear security enterprise to be more responsive and cost effective. Weapons Activities also provides protection and prevention for NNSA personnel, facilities, nuclear weapons, special nuclear material, and information from a full spectrum of insider and outsider threats. The major elements of the program include the following:

<u>Directed Stockpile Work</u>

Encompasses all activities that directly support the nuclear weapons stockpile. These activities include: maintenance and surveillance; planned refurbishment; reliability assessment; weapon dismantlement and disposal; and research, development, and certification technology efforts to meet stockpile requirements.

<u>Campaigns</u>

Focuses on scientific, technical, and engineering efforts to develop and maintain critical capabilities, tools, and processes needed to support science based stockpile stewardship, refurbishment, and continued certification of the stockpile over the long-term in the absence of underground nuclear testing.

<u>Readiness in Technical Base and Facilities</u>

Provides the underlying physical infrastructure and operational readiness for the nuclear security enterprise, ensuring that facilities are operational, safe, secure, and compliant with regulatory requirements. RTBF plans, prioritizes, and constructs state-of-the-art facilities, infrastructure, and scientific tools for the enterprise while also maintaining the existing infrastructure and planning for the disposition of legacy infrastructure.

<u>Secure Transportation Asset</u>

Provides for the safe, secure movement of nuclear weapons, special nuclear material, and weapon components to meet projected DOE, DoD, and other customer requirements. The Program Direction in this account provides for the secure transportation workforce, including the Federal agents.

Site Stewardship
Site Stewardship ensures the overall health and viability of the nuclear security enterprise, with a focus on: long-term stewardship activities under the Environmental Projects and Operations program necessary to meet Federal and State environmental regulatory requirements identified in legally enforceable site permits, cleanup agreements, and legislation to ensure safe cleanup levels are met; stabilization, consolidation, packaging and disposition of nuclear materials under the Nuclear Materials Integration program; and research and education enhancements at under-represented colleges and universities funded by the Minority Serving Institution Partnership Programs (MSIPP) to develop the needed skills and talent for NNSA's enduring technical workforce at the laboratories and production plants.

Nuclear Counterterrorism Incident Response
Provides technical assets from the nuclear security enterprise to resolve and manage nuclear and radiological incidents, especially those involving terrorism, by maintaining and using response teams comprised of technical specialists to respond to and manage the consequences domestically or internationally should an attack result in radiation exposure to the public. NCTIR conducts training programs to train and equip response organizations and uses strategies that integrate NNSA expertise with law enforcement or military capabilities to locate, identify, and disable a terrorist nuclear device. It also manages the effects of an attack by collaborating with Federal, State, and local emergency management organizations

Counterterrorism and Counterproliferation
Promotes the understanding of nuclear threat devices, including improvised nuclear devices, foreign nuclear weapons (with emphasis on loss of custody), and their constituents (namely nuclear and energetic materials). Key CTCP technical activities sustain and exercise the U.S. Government's ability to understand and prevent nuclear terrorism and to counter nuclear device proliferation.

Defense Nuclear Security
Provides protection for NNSA personnel, facilities, and nuclear weapons from a full spectrum of threats, most notably terrorism. Provides for all safeguards and security requirements including protective forces and systems at all NNSA sites.

Information Technology and Cybersecurity
Provides for research and development of information technology and cybersecurity solutions such as identity, credential, and access management to help meet energy security, proliferation resistance, and climate goals.

NNSA's request reflects the partnership between NNSA and the DoD to maintain and modernize the nuclear deterrent. The DoD's NNSA Program Support account has the amounts for Weapons Activities that are shown in the table below, underscoring the close link between these activities and DoD nuclear weapons-related requirements and missions. The OMB will ensure that future budget year allocations to NNSA occur in the required amounts. Total Weapons Activities funding for each year will thereby equal the amounts projected in the table below with the amounts above.

Major Outyear Priorities and Assumptions
Outyear funding levels for the Weapons Activities appropriation total $37,347,628,000 for FY 2016 through FY 2019.

The priorities for the Weapons Activities appropriation are:
- Accomplish all required stockpile maintenance activities to sustain the existing stockpile
- Pursue the B61-12, with completion of a first production unit no later than FY second-quarter (Q2) 2020.
- Complete W76-1 production by FY 2019, while supporting U.S. Navy W76-1 fleet deployment requirements.
- Complete a W88 arming, fuzing, and firing (AF&F) first production unit in FY first-quarter (Q1) 2020 to avoid impacting U.S. Navy operational forces and support the W78 and W87 fuze activities.
- Continue to study the cruise missile warhead LEP with an LEP first production unit no later than FY 2027.
- Execute a plutonium strategy that achieves a 30 pit per year capacity by 2026.
- Continue funding a 90% engineering design for the Uranium Processing Facility project through October 2014. With an external peer review process, study alternative approaches including phased approaches and a smaller facility that will eliminate the need for Bldg 9212 by 2025 and constrain total project cost to no more than $6.5 billion.
- Execute RDT&E activities that both support the priorities listed above and sustain the associated workforce.
- Maintain a risk-based security program and collaboration with the DoD, in support of nuclear security enterprise goals.
- Transform the computing environment by delivering the NNSA Network Vision (2NV) and the Joint Cyber Security Coordination Center (JC3).

- Improve facility maintenance activities and reinvestment projects to arrest growth in deferred maintenance.

Department of Energy (DOE) Working Capital Fund (WCF) Support

DOE Working Capital Fund (WCF) Support from the NNSA Weapons Activities appropriation projected contribution to the DOE Working Capital Fund for FY 2015 is $27.056 million. DOE is working to achieve economies of scale through an enhanced Working Capital Fund (WCF).

Legacy Contractor Pensions

This program provides the annual Weapons Activities share of the DOE's reimbursement of payments made to the University of California Retirement Plan (UCRP) for former University of California employees and annuitants who worked at the LLNL and LANL. The UCRP benefit for these individuals is a legacy cost and DOE's annual payment to the UC is required by the contracts. The amount of the annual payment is based on the actuarial valuation report and is covered by the terms described in the Appendix T section of the contracts. Funding for these contracts will be paid through the Legacy Contractor Pension line.

NNSA Graduate Fellowship Program (NGFP) Support

The NNSA manages a technical fellowship program to cultivate the next generation of future leaders in nonproliferation, nuclear security, and international security to create a pipeline of highly qualified professionals who will sustain expertise in these areas through future employment within the nuclear security enterprise.

The majority of the efforts directly support program activities, and programs funded in the Weapons Activities appropriation plan up to approximately $2.5 million in FY 2015, in areas including nuclear weapons surety and quality, research and development, science and manufacturing, nuclear weapons stockpile, and air delivered system acquisitions.

Weapons Activities
Funding by Congressional Control

(Dollars in Thousands)

	FY 2013 Current	FY 2014 Enacted	FY 2014 Adjustments	FY 2014 Current	FY 2015 Request	FY 2015 vs FY 2014 Enacted
Weapons Activities						
Directed Stockpile Work						
B61 Life Extension Program	0	537,044	0	537,044	643,000	+105,956
W76 Life Extension Program	0	248,454	0	248,454	259,168	+10,714
W78 Life Extension Program	0	38,000	0	38,000	0	-38,000
W88 Alt 370	0	169,487	0	169,487	165,400	-4,087
Cruise Missile Warhead Life Extension Program	0	0	0	0	9,418	+9,418
Total	**0**	**992,985**	**0**	**992,985**	**1,076,986**	**+84,001**
Life Extension Programs						
B61 Life Extension Program	324,320	0	0	0	0	0
W76 Life Extension Program	218,286	0	0	0	0	0
Total, Life Extension Programs	**542,606**	**0**	**0**	**0**	**0**	**0**
Stockpile Systems						
B61 Stockpile Systems	60,222	83,536	0	83,536	109,615	+26,079
W76 Stockpile Systems	46,713	47,187	0	47,187	45,728	-1,459
W78 Stockpile Systems	94,151	54,381	0	54,381	62,703	+8,322
W80 Stockpile Systems	43,728	50,330	0	50,330	70,610	+20,280
B83 Stockpile Systems	61,410	54,948	0	54,948	63,136	+8,188
W87 Stockpile Systems	72,336	101,506	0	101,506	91,255	-10,251
W88 Stockpile Systems	132,775	62,600	0	62,600	88,060	+25,460
Total, Stockpile Systems	**511,335**	**454,488**	**0**	**454,488**	**531,107**	**+76,619**
	40,736	**54,264**	**0**	**54,264**	**30,008**	**-24,256**

Weapons Dismantlement and Disposition	FY 2013 Current	FY 2014 Enacted	FY 2014 Adjustments	FY 2014 Current	FY 2015 Request	FY 2015 vs FY 2014 Enacted
Stockpile Services						
Production Support	321,551	345,000	0	345,000	350,942	+5,942
Research and Development Support	26,917	24,928	0	24,928	29,649	+4,721
Research and Deveopment Certification and Safety	186,272	151,133	0	151,133	201,479	+50,346
Managemement, Technology, and Production	176,833	214,187	0	214,187	241,805	+27,618
Plutonium Sustainment	123,807	0	0	0	144,575	+144,575
Plutonium Infrastructure Sustainment	0	125,048	0	125,048	0	-125,048
Tritium Readiness	0	80,000	0	80,000	140,053	+60,053
Total, Stockpile Services	**835,380**	**940,296**	**0**	**940,296**	**1,108,503**	**+168,207**
Total, Directed Stockpile Work	**1,930,057**	**2,442,033**	**0**	**2,442,033**	**2,746,604**	**+304,571**
Science Campaign						
Advanced Certification	39,922	58,747	0	58,747	58,747	0
Primary Assessment Technologies	86,212	92,000	0	92,000	112,000	+20,000
Dynamic Materials Properties	89,301	104,000	0	104,000	117,999	+13,999
Advanced Radiography	27,129	29,509	0	29,509	79,340	+49,831
Secondary Assessment Technologies	78,656	85,467	0	85,467	88,344	+2,877
Total, Science Campaign	**321,220**	**369,723**	**0**	**369,723**	**456,430**	**+86,707**
Engineering Campaign						
Enhanced Surety	40,080	51,771	0	51,771	52,003	+232
Weapon Systems Engineering Assessment Technology	16,036	23,727	0	23,727	20,832	-2,895
Nuclar Survivability	16,484	19,504	0	19,504	25,371	+5,867
Enhanced Surveillance	51,814	54,909	0	54,909	37,799	-17,110
Total, Engineering Campaign	**124,414**	**149,911**	**0**	**149,911**	**136,005**	**-13,906**

(Dollars in Thousands)

	(Dollars in Thousands)					
	FY 2013 Current	FY 2014 Enacted	FY 2014 Adjustments	FY 2014 Current	FY 2015 Request	FY 2015 vs FY 2014 Enacted
Ignition and High Yield Campaign						
Ignition	83,798	80,245	0	80,245	77,994	-2,251
Support of Other Stockpile Programs	15,503	15,001	0	15,001	23,598	+8,597
Diagnostics, Cryogenics and Experimental Support	82,263	59,897	0	59,897	61,297	+1,400
Pulsed Power Inertial Confinement Fusion	5,468	5,024	0	5,024	5,024	0
Joint Program in High Energy Density Laboratory Plasmas	7,552	8,198	0	8,198	9,100	+902
Facility Operations and Target Production	262,092	345,592	0	345,592	335,882	-9,710
Total, Inertial Confinement Fusion Ignition and High Yield Campaign	**456,676**	**513,957**	**0**	**513,957**	**512,895**	**-1,062**
Advanced Simulation and Computing Campaign	**513,567**	**569,329**	**0**	**569,329**	**610,108**	**+40,779**
Readiness Campaign						
Nonnuclear Readiness	55,407	55,407		55,407	125,909	70,502
Tritium Readiness	59,904	0		0	0	0
Total, Readiness Campaign	**115,311**	**55,407**	**0**	**55,407**	**125,909**	**+70,502**

(Dollars in Thousands)

	FY 2013 Current	FY 2014 Enacted	FY 2014 Adjustments	FY 2014 Current	FY 2015 Request	FY 2015 vs FY 2014 Enacted
Readiness in Technical Base and Facilities						
Operating						
Operations of Facilities						
Kansas City Plant	155,506	135,834	0	135,834	125,000	-10,834
Lawrence Livermore National Laboratory	165,142	77,287	0	77,287	71,000	-6,287
Los Alamos National Laboratory	368,991	213,707	0	213,707	198,000	-15,707
Nevada National Security Site	112,132	100,929	0	100,929	89,000	-11,929
Pantex Plant	163,446	81,420	0	81,420	75,000	-6,420
Sandia National Laboratory	143,458	115,000	0	115,000	106,000	-9,000
Savannah River Site	103,925	90,236	0	90,236	81,000	-9,236
Y-12 National Security Complex	210,109	170,042	0	170,042	151,000	-19,042
Total, Operations of Facilities	**1,422,709**	**984,455**	**0**	**984,455**	**896,000**	**-88,455**
Program Readiness	109,044	67,259	0	67,259	136,700	+69,441
Material Recycle and Recovery	109,895	125,000	0	125,000	138,900	+13,900
Containers	24,524	26,000	0	26,000	26,000	0
Storage	35,487	35,000	0	35,000	40,800	+5,800
Maintenance and Repair of Facilities	0	227,591	0	227,591	205,000	-22,591
Recapitalization	0	180,000	0	180,000	209,321	+29,321
Total, Operating	**1,701,659**	**1,645,305**	**0**	**1,645,305**	**1,652,721**	**+7,416**
Construction	**387,758**	**422,120**	**2,500**	**424,620**	**402,800**	-19,320
Total, Readiness in Technical Base and Facilities	**2,089,417**	**2,067,425**	**2,500**	**2,069,925**	**2,055,521**	**-11,904**
Secure Transportation Asset (STA)						
Operations and Equipment	**109,494**	**112,882**	**0**	**112,882**	**132,851**	**+19,969**
Program Direction	**92,039**	**97,118**	**3,619**	**100,737**	**100,962**	**+3,844**
Total, STA	**201,533**	**210,000**	**3,619**	**213,619**	**233,813**	**+23,813**

	(Dollars in Thousands)					
	FY 2013 Current	FY 2014 Enacted	FY 2014 Adjustments	FY 2014 Current	FY 2015 Request	FY 2015 vs FY 2014 Enacted
Nuclear Counterterrorism Incident Response Program	**227,088**	**228,243**	**0**	**228,243**	**173,440**	**-54,803**
Counterterrorism and Counterproliferation Programs	**0**	**0**	**0**	**0**	**76,901**	**+76,901**
Site Stewardship	**69,497**	**87,326**	**0**	**87,326**	**82,449**	**-4,877**
Defense Nuclear Security						
Operations and Maintenance	**624,302**	**664,981**	**0**	**664,981**	**618,123**	**-46,858**
Construction	**29,161**	**0**	0	**0**	**0**	**0**
Total, Defense Nuclear Security	**653,463**	**664,981**	**0**	**664,981**	**618,123**	**-46,858**
Cybersecurity	**12,000**	**0**	**0**	**0**	**0**	**0**
Information Technology and Cyber scurity (formerly NNSA CIO Activities)	**139,184**	**145,068**	**0**	**145,068**	**179,646**	**+34,578**
National Security Applications	**9,500**	**0**	**0**	**0**	**0**	**0**
Legacy Contractor Pensions	**170,191**	**279,597**	**46,008**	**325,605**	**307,058**	**+27,461**
Domestic Uranium Enrichment Research, Development and Demonstration	**0**	**62,000**	**0**	**62,000**	**0**	**-62,000**
Subtotal, Weapons Activities	**7,033,118**	**7,845,000**	**52,127**	**7,897,127**	**8,314,902**	**+469,902**
Use of Prior Year Balances	**-66,263**	**0**	**-52,127**	**-52,127**	**0**	**0**
Rescission of Prior Year Balances	**0**	**-64,000**	**0**	**-64,000**	**0**	**+64,000**
Total, Weapons Activities	**6,966,855**	**7,781,000**	**0**	**7,781,000**	**8,314,902**	**+533,902**

Outyears for Weapons Activities [a]

	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
	(Dollars in Thousands)			
Weapons Activities				
Directed Stockpile Work				
B61 Life Extension Program	641,000	620,200	729,500	726,200
W76 Life Extension Program	252,199	249,200	244,500	123,000
W78 Life Extension Program	0	0	0	0
W88 Alt 370	157,400	159,700	145,600	163,363
Cruise Missile Warhead Life Extension Program	27,987	55,143	165,000	225,000
	1,078,586	**1,084,243**	**1,284,600**	**1,237,563**
Life Extension Programs				
B61 Life Extension Program	0	0	0	0
W76 Life Extension Program	0	0	0	0
Total, Life Extension Programs	**0**	**0**	**0**	**0**
Stockpile Systems				
B61 Stockpile Systems	80,740	76,306	76,296	82,324
W76 Stockpile Systems	49,854	49,508	45,509	48,125
W78 Stockpile Systems	56,816	59,774	62,915	60,456
W80 Stockpile Systems	98,135	101,484	93,845	87,810
B83 Stockpile Systems	69,333	66,204	69,385	71,984
W87 Stockpile Systems	91,375	86,682	87,176	75,846
W88 Stockpile Systems	89,814	91,401	128,400	137,326
Total, Stockpile Systems	**536,067**	**531,359**	**563,526**	**563,871**
Weapons Dismantlement and Disposition	**46,787**	**47,028**	**63,637**	**70,952**

[a] The annual totals in Weapons Activities include an allocation to NNSA from the Department of Defense's five year budget plan. The amounts included are $1,130,193,000 in FY 2016, $1,132,763,000 in FY 2017, $1,271,473,000 in FY 2018, and $1,299,796,000 in FY 2019.

	(Dollars in Thousands)			
	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Stockpile Services				
Production Support	371,799	404,466	438,261	450,455
Research and Development Support	36,092	44,953	47,884	54,437
Research and Deveopment Certification and Safety	224,671	271,054	341,009	428,282
Managemement, Technology, and Production	257,424	279,773	305,596	327,043
Plutonium Sustainment	174,698	179,888	141,069	155,767
Plutonium Infrastructure Sustainment	0	0	0	0
Tritium Readiness	107,395	126,730	140,089	120,444
Total, Stockpile Services	**1,172,079**	**1,306,864**	**1,413,908**	**1,536,428**
Total, Directed Stockpile Work	**2,833,519**	**2,969,494**	**3,325,671**	**3,408,814**
Science Campaign				
Advanced Certification	63,997	64,133	64,614	65,667
Primary Assessment Technologies	122,009	122,077	122,788	124,745
Dynamic Materials Properties	128,545	128,903	196,005	210,118
Advanced Radiography	114,210	114,814	50,000	40,000
Secondary Assessment Technologies	96,239	96,472	97,202	98,783
Total, Science Campaign	**525,000**	**526,399**	**530,609**	**539,313**
Engineering Campaign				
Enhanced Surety	44,400	38,358	43,885	44,891
Weapon Systems Engineering Assessment Technology	19,262	18,981	21,349	23,650
Nuclar Survivability	26,689	25,597	27,935	30,340
Enhanced Surveillance	47,800	50,639	54,498	56,044
Total, Engineering Campaign	**138,151**	**133,575**	**147,667**	**154,925**

	(Dollars in Thousands)			
	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Inertial Confinement Fusion Ignition and High Yield Campaign				
Ignition	77,994	77,538	78,252	77,999
Support of Other Stockpile Programs	26,000	25,795	27,147	27,047
Diagnostics, Cryogenics and Experimental Support	61,297	60,816	62,201	61,981
Pulsed Power Inertial Confinement Fusion	5,524	5,479	5,733	5,706
Joint Program in High Energy Density Laboratory Plasmas	9,600	9,530	9,887	9,849
Facility Operations and Target Production	337,185	330,378	329,000	330,141
Total, Inertial Confinement Fusion Ignition and High Yield Campaign	**517,600**	**509,536**	**512,220**	**512,723**
Advanced Simulation and Computing Campaign	**650,971**	**648,878**	**667,096**	**709,312**
Readiness Campaign				
Nonnuclear Readiness	135,114	86,883	55,985	61,500
Tritium Readiness	0	0	0	0
Total, Readiness Campaign	**135,114**	**86,883**	**55,985**	**61,500**

	(Dollars in Thousands)			
	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Readiness in Technical Base and Facilities				
Operating				
Operations of Facilities				
Kansas City Plant	129,000	133,000	120,000	124,000
Lawrence Livermore National Laboratory	73,000	75,000	77,000	79,000
Los Alamos National Laboratory	204,000	210,000	216,000	222,000
Nevada National Security Site	92,000	95,000	98,000	101,000
Pantex Plant	77,000	79,000	81,000	83,000
Sandia National Laboratory	109,000	112,000	115,000	118,000
Savannah River Site	83,000	85,000	88,000	91,000
Y-12 National Security Complex	156,000	160,000	165,000	170,000
Total, Operations of Facilities	**923,000**	**949,000**	**960,000**	**988,000**
Program Readiness	187,405	190,425	206,760	211,099
Material Recycle and Recovery	141,200	142,078	143,054	145,598
Containers	27,000	28,000	29,000	30,000
Storage	41,400	41,683	42,965	43,758
Maintenance and Repair of Facilities	211,000	218,000	224,000	231,000
Recapitalization	351,900	513,169	331,857	386,437
Total, Operating	**1,882,905**	**2,082,355**	**1,937,636**	**2,035,892**
Construction	576,000	688,000	707,800	728,500
Total, Readiness in Technical Base and Facilities	**2,458,905**	**2,770,355**	**2,645,436**	**2,764,392**
Secure Transportation Asset (STA)				
Operations and Equipment	**137,670**	**146,512**	**149,066**	**152,069**
Program Direction	**105,338**	**108,595**	**110,647**	**112,838**
Total, STA	**243,008**	**255,107**	**259,713**	**264,907**

	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
	(Dollars in Thousands)			
Nuclear Counterterrorism Incident Response Program	**165,382**	**169,495**	**173,609**	**177,724**
Counterterrorism and Counterproliferation Programs	**82,121**	**84,163**	**86,206**	**88,249**
Site Stewardship	**84,377**	**84,520**	**84,485**	**85,181**
Defense Nuclear Security				
Operations and Maintenance	**652,771**	**663,094**	**675,402**	**689,221**
Construction	**0**	**0**	**0**	**0**
Total, Defense Nuclear Security	**652,771**	**663,094**	**675,402**	**689,221**
Information Technology and Cyber Security (formerly NNSA CIO Activities)	**151,661**	**153,431**	**155,481**	**158,662**
National Security Applications	**0**	**0**	**0**	**0**
Legacy Contractor Pensions	**268,659**	**206,492**	**157,060**	**87,404**
Subtotal, Weapons Activities	**8,907,239**	**9,261,422**	**9,476,640**	**9,702,327**
Use of Prior Year Balances	**0**	**0**	**0**	**0**
Rescission of Prior Year Balances	**0**	**0**	**0**	**0**
Total, Weapons Activities	**8,907,239**	**9,261,422**	**9,476,640**	**9,702,327**

Research and Development

The Office of Management and Budget (OMB) Circular No. A-11, "Preparation, Submission, and Execution of the Budget," dated July 2013, requires the reporting of research and development (R&D) data. Consistent with this requirement, R&D activities funded by NNSA are displayed below.

	(Dollars in Thousands)			
	FY 2013 Current	**FY 2014 Enacted**	**FY 2015 Request**	**FY 2015 vs FY 2014 Enacted**
Research and Development (R&D)				
Basic	6,620	3,547	6,160	+2,613
Applied	2,141,562	2,267,769	2,559,594	+291,825
Development	744,653	812,892	884,927	+72,035
Subtotal, R&D	**2,892,835**	**3,084,208**	**3,450,681**	**+366,473**
Equipment	52,610	53,767	54,950	+1,183
Construction	22103	23275	25,281	+2006
Total, R&D	**2,967,548**	**3,161,250**	**3,530,912**	**+369,662**

Directed Stockpile Work (DSW)

Overview

The Directed Stockpile Work (DSW) program is responsible for ensuring the safety, security and effectiveness of the nation's nuclear weapons stockpile. DSW maintains a continued effective deterrent while enforcing and enhancing the safety and security of the stockpile, without underground nuclear testing. The DSW program directly contributes to meeting the DOE strategic goal for "Nuclear Security" and plays a critical role in meeting Strategic Objective 4 to "Maintain the safety, security and effectiveness of the nation's nuclear deterrent without nuclear testing.

DSW derives nuclear weapons stockpile requirements from the President's Nuclear Weapon Stockpile Plan (NWSP). In accordance with this directive, DSW will: (1) provide unique skills, equipment, testers, and logistics to enable nuclear weapons operations; (2) develop, produce and replace limited life components (LLCs); (3) conduct scheduled weapons maintenance; (4) conduct surveillance and evaluations to assess weapons reliability as well as detect and anticipate potential weapons issues; (5) quantify margins of uncertainty in order to assess and certify the nuclear stockpile; (6) develop options for enhanced safety, security, and effectiveness for insertion into current modifications/alterations; (7) efficiently extend the life of existing weapons systems through authorized modifications to address technical issues and enhance safety, security, and effectiveness; (8) provide dismantlement and disposition of weapons and components for weapons retired from the stockpile, thereby sustaining nonproliferation goals and international commitments; (9) compile and analyze information during the Annual Assessment process to identify and address potential issues; (10) develop the next generation of technologies (neutron generators (NGs), gas transfer systems (GTSs), code management systems, power sources, etc.) for multiple system applications to reduce life cycle costs while leveraging against near term and long term stockpile development needs; (11) sustain the plutonium infrastructure to meet long-term national requirements; and (12) produce tritium necessary for the national inventory and required for the nuclear weapons mission.

DSW fulfills the above responsibilities through four subprograms: (1) Life Extension Programs (LEPs) and Major Alterations (Alts), which extend the lifetime of the nation's nuclear stockpile and enable the nuclear security enterprise to respond to threats of the 21st century without developing new weapon systems; (2) Stockpile Systems, which directly executes sustainment activities for all enduring weapons systems in the stockpile (B61, W76, W78, W80, B83, W87, and W88); (3) Weapons Dismantlement and Disposition (WDD), which oversees the removal of retired weapons and components from the stockpile; and (4) Stockpile Services, which provides the foundation for the research, development, and production within the nuclear security enterprise to meet national requirements.

The Department of Energy's Directed Stockpile Work (DSW) budget request for FY 2015, $2.7 billion, represents a 12.5% or $304.6M increase above the FY 2014 Consolidated Appropriations Act. The increase will enable continued efforts to extend the life of the W76-1 LEP and continue the activities necessary to meet the B61-12 LEP and W88 Alt 370 Arming, Fuzing, and Firing First Production Unit (FPU) schedule as approved by Nuclear Weapons Council (NWC). This budget defers the W78/88-1 LEP to resume some time beyond FY 2019. The 12.5% increase also represents a ramp-up in surveillance activities that were deferred from prior years, and allows for baseline production of planned NGs. The change in the production activities mainly focuses on the production of the Large Ferro Electric Neutron Generator, production of the Small Ferro Electric and the Electronic Neutron Generators, modification to the surveillance requirements due to an aging stockpile, acquisition and installation of new equipment for Plutonium (Pu) Sustainment to modernize the base capability while developing alternative pit manufacturing processes, and realignment of Tritium Readiness from the Readiness Campaign to Stockpile Services and associated increase due to increased costs for unobligated reactor fuel, excess uranium, and operational costs at Tennessee Valley Authority (TVA) and the Tritium Extraction Facility (TEF). In addition, the increase reflects a ramp-up of technology maturation activities to mature components needing modernization/replacement due to performance issues, aging, or surety enhancement to the required technology readiness level to enable use by systems and/or LEPs.

Highlights of the FY 2015 Budget Request

- Maintain progress toward meeting the B61-12 LEP first production unit.
- Execute the W76-1 LEP to meet the current deliverables in agreement with the Department of the Navy and in sustainment of submarine deployment requirements.
- Execute the W88 Alt 370 which will address lifetime requirements by modernizing the AF&F system, improving surety, and incorporating a lightning arrestor connector. It will also provide required logistical spares for maintaining the life of the system.

- The Cruise Missile Warhead program will enter into Phase 6.1 for the weapon development cycle.
- Complete production of all LLCs, NGs, and GTSs required for maintenance.
- Complete all maintenance required to sustain the active stockpile numbers.
- Complete all approved surveillance requirements.
- Provides only a base capability for dismantlement of retired weapons. Some component disposition will be deferred.
- Complete Annual Assessment Cycle for the active stockpile.
- Complete irradiation of 704 Tritium-Producing Burnable Absorbing Rods (TPBARS) in Watts Bar Unit 1 (WBN1) Cycle 13.

Major Outyear Priorities and Assumptions

Outyear funding levels for DSW total $12.5B for FY 2016 through FY 2019. The priorities for DSW are:

- Execute the W76-1 LEP, B61-12 LEP, and W88 ALT 370 activities.
- Defer the W78/88-1 LEP to some date beyond FY 2019.
- Sustain activities that support Stockpile Maintenance, Surveillance, and Assessment.
- Provide the foundation for capabilities and capacity within the nuclear security enterprise necessary to sustain Directed Stockpile Work activities.
- Continue nuclear weapons refurbishment activities through the 6.X process for a cruise missile warhead in coordination with the Air Force long range standoff (LRSO) program.
- Continue to invest in manufacturing equipment (acquire, install, configure and authorize for operation) to modernize the base capability for pits while progressing towards the development, qualification, and certification of alternative pit manufacturing processes.
- Continue to provide an assured supply of tritium to meet national defense needs and demonstrate successful production capacity to meet requirements.
- Continue ongoing activities that directly support the internal design laboratory site-specific research and development (R&D) activities. This includes management activities that support stockpile studies and programmatic work for multiple systems or non-weapon specific systems.
- Continue ongoing activities that support the stockpile by designing and developing limited life components not directly attributable to a specific warhead, such as NGs, GTSs, and other components; performing hydrodynamic test and subcritical experiments; and surety development.
- Continue to support the Annual Assessment process.

FY 2013 Accomplishments

- Delivered all scheduled LLCs for the B61, W76, W78, W80, B83, W87, and W88. LLCs include GTSs, NGs, and alteration kits delivered to the Department of Defense (DoD) and the Pantex Plant to maintain the nuclear weapons stockpile.
- Conducted surveillance programs for all weapon systems using data collection from flight tests, laboratory tests, and component evaluations sufficient to assess stockpile reliability without nuclear testing. Surveillance culminated in completing all Annual Assessment Reports and Laboratory Director Letters to the President.
- Completed all FY 2013 Joint Test Assembly (JTA) builds and flight tests, including the first successful B61 transmitting JTA and production of two W80-1 JTA3 Cost Reduced (JTA3CR) Hi-Fidelity JTAs.
- Completed all scheduled deliveries for the W76-1 LEP to the Department of the Navy (DoN), and completed 74% of the FY 2013 War Reserve Build requirements despite significant obstacles that had to be overcome during FY 2013. For example, sequestration, Continuing Resolution, and safety analysis at Pantex.
- Successfully completed an extraction of 120 TPBARs at the TEF in the third quarter of FY 2013.
- Completed two shipments of TPBARS from WBN1 Cycle 11 to the TEF.
- Completed all B61-12 LEP component conceptual design reviews, fabricated version 1.0 functional hardware, and began B61-12 LEP system-level functional and environmental testing. Completed two successful drop tests validating the new B61-12 LEP radar system in realistic environments.
- Successfully fired two hydrodynamic tests at the Los Alamos National Laboratory (LANL) Dual-Axis Radiographic Hydrodynamic Test Facility (DARHT) as part of the B61-12 LEP qualification effort.
- Successfully re-fabricated PBX 9502 explosive for the B61-12 LEP after a 20-year break in production.
- Successfully completed first integration testing of B61-12 LEP bomb assembly and tail kit assembly interfaces.
- Completed all W88 ALT 370 component conceptual design reviews, fabricated prototype functional hardware, and began component and AF&F level qualification testing.
- Completed a down-select to the W87-like pit type for the first interoperable warhead, W78/88-1.
- Achieved the First Production Unit for the Small Ferroelectric Neutron Generator for the W87 program.

- Archived past weapons data and converted sunset technology files to state-of-the-art data storage/security systems.
- Completed seven planned JASPER plutonium shots, five Phoenix experiments, and one weapon system hydrodynamic experiment.
- At the end of FY 2013, the Weapons Dismantlement and Disposition (WDD) program was 14% ahead of the plan to complete dismantlement of weapons retired prior to FY 2009 by the end of FY 2022.
- Completed the Annual Assessment Process and Independent Nuclear Weapon Assessment Process (INWAP) activities.
- Submitted Weapons Reliability Reports to DoD.

Directed Stockpile Work
Funding

(Dollars in Thousands)

	FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Request	FY 2015 vs FY 2014 Enacted
Directed Stockpile Work					
B61 Life Extension Program	0	537,044	537,044	643,000	+105,956
W76 Life Extension Program	0	248,454	248,454	259,168	+10,714
W78 Life Extension Program	0	38,000	38,000	0	-38,000
W88 Alt 370	0	169,487	169,487	165,400	-4,087
Cruise Missile Warhead Life Extension Program	0	0	0	9,418	+9,418
Total	**0**	**992,985**	**992,985**	**1,076,986**	**+84,001**
Life Extension Programs					
B61 Life Extension Program	324,320	0	0	0	0
W76 Life Extension Program	218,286	0	0	0	0
Total, Life Extension Programs	**542,606**	**0**	**0**	**0**	**0**
Stockpile Systems					
B61 Stockpile Systems	60,222	83,536	83,536	109,615	+26,079
W76 Stockpile Systems	46,713	47,187	47,187	45,728	-1,459
W78 Stockpile Systems	94,151	54,381	54,381	62,703	+8,322
W80 Stockpile Systems	43,728	50,330	50,330	70,610	+20,280
B83 Stockpile Systems	61,410	54,948	54,948	63,136	+8,188
W87 Stockpile Systems	72,336	101,506	101,506	91,255	-10,251
W88 Stockpile Systems	132,775	62,600	62,600	88,060	+25,460
Total, Stockpile Systems	**511,335**	**454,488**	**454,488**	**531,107**	**+76,619**
Weapons Dismantlement and Disposition	**40,736**	**54,264**	**54,264**	**30,008**	**-24,256**
Stockpile Services					
Production Support	321,551	345,000	345,000	350,942	+5,942
Research and Development Support	26,917	24,928	24,928	29,649	+4,721
Research and Deveopment Certification and Safety	186,272	151,133	151,133	201,479	+50,346
Managemement, Technology, and Production	176,833	214,187	214,187	241,805	+27,618
Plutonium Sustainment	123,807	0	0	144,575	+144,575
Plutonium Infrastructure Sustainment	0	125,048	125,048	0	-125,048
Tritium Readiness	0	80,000	80,000	140,053	+60,053
Total, Stockpile Services	**835,380**	**940,296**	**940,296**	**1,108,503**	**+168,207**
Total, Directed Stockpile Work	**1,930,057**	**2,442,033**	**2,442,033**	**2,746,604**	**+304,571**

Outyears for Directed Stockpile Work

	(Dollars in Thousands)			
	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Directed Stockpile Work				
B61 Life Extension Program	641,000	620,200	729,500	726,200
W76 Life Extension Program	252,199	249,200	244,500	123,000
W78 Life Extension Program	0	0	0	0
W88 Alt 370	157,400	159,700	145,600	163,363
Cruise Missile Warhead Life Extension Program	27,987	55,143	165,000	225,000
	1,078,586	**1,084,243**	**1,284,600**	**1,237,563**
Life Extension Programs				
B61 Life Extension Program	0	0	0	0
W76 Life Extension Program	0	0	0	0
Total, Life Extension Programs	**0**	**0**	**0**	**0**
Stockpile Systems				
B61 Stockpile Systems	80,740	76,306	76,296	82,324
W76 Stockpile Systems	49,854	49,508	45,509	48,125
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Total, Stockpile Systems	**536,067**	**531,359**	**563,526**	**563,871**
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Stockpile Services				
Production Support	371,799	404,466	438,261	450,455
Research and Development Support	36,092	44,953	47,884	54,437
Research and Deveopment Certification and Safety	224,671	271,054	341,009	428,282
Managemement, Technology, and Production	257,424	279,773	305,596	327,043
Plutonium Sustainment	174,698	179,888	141,069	155,767
Plutonium Infrastructure Sustainment	0	0	0	0
Tritium Readiness	107,395	126,730	140,089	120,444
Total, Stockpile Services	**1,172,079**	**1,306,864**	**1,413,908**	**1,536,428**
Total, Directed Stockpile Work	**2,833,519**	**2,969,494**	**3,325,671**	**3,408,814**

Directed Stockpile Work
Explanation of Major Changes
(Dollars in Thousands)

	FY 2015 vs. FY 2014 Enacted
Directed Stockpile Work	
Life Extension Programs and Major Alterations: The B61-12 LEP increase of $106.0M reflects the initial ramp-up at NNSA production plants in preparation for Pre-Production Engineering activities in FY 2016, while maintaining development engineering activities at B61-12 LEP design laboratories including component and system testing of B61-12 LEP functional hardware. The comprehensive testing in FY 2015 will enable the design laboratories to baseline the bomb design in FY 2016 prior to entry into Phase 6.4 and maintain progress toward a 2020 First Production Unit (FPU). NNSA will also ramp-up the purchase of long lead commercial off the shelf parts, equipment, tooling, and testers that will be utilized in War Reserve production, and will begin flight testing on Air Force test aircraft. The W76-1 LEP increase of $10.7M is due to the KCRIMS re-qualification and re-establishment of the W76-1 LEP component hardware production at the new KCP Botts Road Facility. This will result in the W76-1 LEP ramp-up to return to steady state production rates in FY 2015. The W78-1 LEP decrease of $38.0M is due to delayed implementation of the 3+2 nuclear strategy and defers the program beyond the FYNSP. Closeout of the program will occur in FY 2014. The W88 ALT 370 decrease of $4.1M represents a slight decline in engineering development and steady state production development. The Cruise Missile Warhead LEP increase of $9.4M reflects entering into Phase 6.1 for the weapon development cycle.	**+84,001**
Stockpile Systems: The $76.6M increase in Stockpile Systems allows for a necessary increase in Neutron Generator (NG) and Gas Transfer System (GTS) activities that are critical components of nuclear weapons maintenance, and ensure the reliability of our nuclear deterrent. This includes day-to-day stockpile maintenance activities for limited life components, including the production and delivery of these components for each weapon type. The increase also allows for the recovery of deferred stockpile surveillance and assessment activities.	**+76,619**
Weapons Dismantlement and Disposition: The decrease of $24.3M reflects the following changes within the Dismantlement and Disposition work scope: reduce Pantex dismantlement by 40% and develop a new plan for dismantlement of weapons retired prior to FY 2009; slowing the disposition of parts that are made available through dismantlement activities. Y-12's dismantlement rate will be maintained at a level that provides materials as required by internal and external customers (e.g., Naval Reactors and B61-12 LEP); Continue with dismantlement deliverables for the W80 ALT 369 and W76-1 LEP.	**-24,256**
Stockpile Services: The Production Support increase of $5.9M funds additional deferred maintenance at Y-12 for Lithium Direct Material Manufacturing; and will also be applied to the maintenance and upkeep of production equipment in aging facilities which now must be maintained rather than retired with the delay in Uranium Production Facility completion. The Research and Development (R&D) Support increase of $4.7M reflects additional upgrade of computers and software to replace obsolete/outdated hardware and software and increased archiving of past weapon data (converting sunset technology files to state-of-the-art data storage and security systems). Research and Development Certification and Safety (R&D C&S) increase of $50.3M restores support for multi-application component technology maturation critical to long term sustainment of stockpile support equipment and to future stockpile life extension programs; and develops and implements options to mitigate known weapon surety risks across the nuclear weapons enterprise. The increase will be applied to progress technology readiness levels of GTS advanced designs, code management system,	**+168,207**

	FY 2015 vs. FY 2014 Enacted
surety development, development of advanced power sources, and development of other key components used in multiple weapon systems. The increase also funds additional hydrodynamic and dynamic plutonium experiments. The Manufacturing, Technology, and Production (MTP) increase of \$27.6M funds critical deferred multi-system surveillance activities. The Weapon Evaluation Test Laboratory schedule will return from the 18-month cycle to the required 12-month cycle for most weapon systems. Multi-system weapon response and external production resources will be added to provide safety studies for un-interrupted assembly/disassembly operations at production plants. The increase also funds the design effort for Use Control technology and Code Management System upgrades entering design stage from concept studies. The Plutonium Infrastructure Sustainment increase of \$19.5M reflects additional investment in base capability modernization and pit certification capability. The Tritium Readiness increase of \$60.1M reflects increased costs for unobligated reactor fuel and excess uranium and other costs at TVA that are tied to 18-month nuclear reactor cycles (TVA increase of \$34M), infrastructure projects for direct stacking, zinc-65 abatement, and worker protection systems at the TEF, and preparations to ramp-up production (from 544 to 704 TPBARS) to meet stockpile requirements.	
Total, Directed Stockpile Work	**+304,571**

Directed Stockpile Work
Life Extension Programs and Major Alterations

Description

Life Extension Programs (LEPs) and Major Alterations is the stockpile management program activity necessary to extend the expected life of stockpile systems for an additional 20 to 30 years. The NNSA, in conjunction with the DoD, executes an LEP following the procedural guidelines of the Phase 6.X process. The Phase 6.X process provides a framework to conduct and manage refurbishment activities for existing weapons. For the purposes of this justification, the term "refurbishment" refers to all nuclear weapon alterations and modifications to include life extension, modernization, and revised military requirements. It makes the maximum use of the established structure, flow, and practices from the traditional phase process. It is not intended to replace Phase 6 (Quantity Production and Stockpile) activities such as routine maintenance, stockpile evaluation, enhanced surveillance, baselining, and annual certification. Therefore, this process is actually an expanded subset of the Quantity Production and Stockpile phase (Phase 6) of the traditional process and has accordingly been termed the Phase 6.X process. Phase 6.1 (Concept Assessment) should provide sufficient information for the Nuclear Weapon Council to authorize Phase 6.2 (Feasibility Study and Option Down-Select). Follow-on phases include: Phase 6.2A (Design Definition and Cost Study, Phase 6.3 (Development Engineering), Phase 6.4 (Production Engineering), Phase 6.5 (First Production) and Phase 6.6 (Full-Scale Production). All phases are conducted in accordance with the Department of Energy (DOE) Procedural Guidelines for the Phase 6.X Process.

B61-12 Life Extension Program

On February 27, 2012, the Nuclear Weapons Council authorized Phase 6.3 (Development Engineering) for the B61-12 LEP. This LEP will address multiple components that are nearing end of life and address military requirements for reliability, service life, field maintenance, safety and use control. NNSA, in coordination with the Air Force, studied a number of design alternatives to address the military's requirements, ranging from component replacement alterations to full-scope nuclear and non-nuclear refurbishments. The joint effort also included a separate study to assess the schedule and costs for each alternative. The selected option includes refurbishment of both nuclear and non-nuclear components to address aging, assure extended service life, and improve the safety, effectiveness, and security of the bomb. With these upgrades and the addition of new Air Force components, the B61-12 LEP will consolidate and replace the B61-3, -4, -7, and -10 bombs. The consolidation will enable a reduction in the number of gravity bombs consistent with the Nuclear Posture Review Report (DoD 2010) objectives. The scope incorporates component reuse where possible and omits higher-risk technologies to reduce costs and schedule risks. The first production unit is planned for FY 2020.

W76-1 Life Extension Program

The W76-1 LEP extends the life of the W76 for an additional 30 years. The first production unit (FPU) was completed in FY 2008. The NNSA completes the reentry body assembly and delivery components to the DoD for integration into the Trident II D5 Strategic Weapon System. It is part of the Submarine Launched Ballistic Missile (SLBM) force.

W78 Life Extension Program

NNSA does not propose further funding for the W78 LEP, and any funds remaining from the FY 2014 appropriation will complete the orderly suspension of W78 LEP activities. In June 2012, the Nuclear Weapons Council (NWC) authorized a Phase 6.2 study for a W78/88-1 LEP interoperable warhead. NNSA, based on revised NWC guidance, has deferred this program beyond the FYNSP with a new projected FPU in FY 2030.

W88 Alt 370

On October 9, 2012, the NWC authorized Phase 6.3 (Development Engineering) for the W88 ALT 370. This Alteration will address lifetime requirements by modernizing the AF&F system, improving surety, and incorporating a lightning arrestor connector. It will also provide required logistical spares for maintaining the life of the system. The design of the Arming and Fuzing portion of the AF&F is planned to be forward compatible with future Air Force and/or LEPs. The maintenance programs for neutron generator and gas transfer system replacement will be funded under the W88 enduring stockpile system, but actual replacement will be performed concurrently with the Alteration operation.

Cruise Missile Warhead Life Extension Program

NNSA and the AF completed the Analysis of Alternatives study for an Air Force cruise missile. This study considered various warhead options based on reuse, refurbishment, and replacement of nuclear and non-nuclear components. In addition, NNSA commissioned a 90-day conceptual design study in October 2012 to inform NNSA and the Air Force of potential cruise missile warhead options for consideration in LEPs. Participants in this study included LANL, LLNL, SNL, and the Air Force.

Key design requirements established for this tasking included using: IHE for all primaries, maximizing use of common non-nuclear components, including common approaches for LEP, designs (e.g., the B61-12, W76-1, and W78/88-1), exploring options for enhanced surety (intrinsic and external), complying with the 2010 Nuclear Posture Review Report and concurrent engineering with the Air Force on Warhead/Missile interface. In November 2013, the NWC, using the results of these studies eliminated the B61 as an option for the Cruise Missile Warhead. Variations of the W80 and W84 will be developed for further consideration.

FY 2016-FY 2019 Key Milestones

B61-12 Life Extension Program

- **System Engineering & Integration**: Phase 6.4 production engineering will begin in FY 2016 following the completion of system-level baseline design reviews and associated phase gates reviews. The Air Force will hold a preliminary design review and acceptance group (PDRAAG) in FY 2016 to assess design and qualification against military requirements. Process prove-in (PPI) activities will continue in FY 2016 through FY 2018. Completion of the final design review, independent peer reviews, and system final design release will be completed in FY 2018. Joint qualification activities will continue into 2019 to enable release of system qualification and associated aircraft compatibility documents. Phase 6.5 will occur in FY 2019 following the completion of production readiness review and the Pre Pilot Production Gate Review. First production will occur in FY 2020.
- **Component Development & Production**: Phase 6.4 production engineering activities will initiate in FY 2016 at NNSA production plants to assure all production hardware meets war reserve quality requirements. PPI and qualification activities will continue in FY 2016 through FY 2019 for all major components and assemblies, including new firing, arming and safing components, radar and weapon controller, nuclear explosives package components, system II interface, limited life components, power supplies, thermal batteries, and use control components. All component qualifications will be completed in FY 2019 and all war reserve hardware will be required to be shipped to Pantex in FY 2020 to support the first production unit.
- **System Testing & Qualification**: Development flight testing will continue in FY 2016 utilizing B61-12 LEP functional hardware from component development lots produced in FY 2015 and FY 2016. Joint testing is required with the Air Force to demonstrate compatibility with the tail kit assembly (TKA) and selected aircraft platforms. Phase 6.4 production engineering activities will initiate in FY 2016. System qualification testing, including both joint flight tests with the Air Force tail kit assembly (TKA) and ground test against normal and abnormal environments will be conducted in FY 2016 through FY 2019. NNSA and Air Force will conduct aircraft compatibility testing to certify the B61-12 LEP nuclear bomb on required aircraft platforms. Laboratories will continue modeling, simulations and analysis of test data to support system qualification in FY 2019. A system qualification report will be published documenting the qualification of the B61-12 LEP nuclear bomb in preparation for the first production unit in FY 2020. The final design review and acceptance group (DRAAG) reviews will be scheduled for FY 2020, and the final weapon development report will follow in FY 2021.

W76-1 Life Extension Program

- Perform Annual Assessment for the W76-1 LEP.
- Continue efforts for improving the manufacturability of the components and reducing costs.
- Meet production and delivery schedules.

W88 Alteration 370 Program

- **System Engineering & Integration**: Phase 6.4 production engineering will ramp up in FY 2016. The completion of system-level baseline design review and phase gate review are expected. The Navy will hold a Preliminary Design Review and Acceptance Group (PDRAAG) in FY 2016 to assess design and qualification against military requirements. Process prove-in (PPI) activities will continue in FY 2016 through FY 2018. Completion of the final design review, independent peer reviews, and system final design release will be completed in FY 2018. Phase 6.5 will begin at the beginning of FY 2020 following completion of production readiness review and the Pre Pilot Production Gate Review in FY 2019. First production will occur in December FY 2020.
- **Component Development & Production**: Phase 6.4 production engineering activities will ramp up in FY 2016 at NNSA production plants to assure all production hardware meets war reserve quality requirements. PPI and qualification activities will continue in FY 2016 through FY 2018 for all major components and assemblies, including new arming, fuzing, and firing system (AF&F) and Lightning Arrestor Connector (LAC). All component qualifications will be completed in FY 2018 and all war reserve hardware will be required to be shipped to Pantex in FY 2019 to support the first production unit.

- **System Testing & Qualification**: Development flight testing will continue in FY 2016 utilizing final development prototype functional hardware. Joint ground and flight testing which includes normal and abnormal environments will be coordinated and conducted throughout FY16 to FY18 with the Department of Navy. Laboratories will continue modeling, simulations and analysis of test data to support system qualification in FY 2018. A system qualification report will be published documenting the qualification of the W88 ALT 370 Weapon System in preparation for the first production unit in FY 2020. The final DRAAG review will be scheduled for FY 2020, followed by release of the final weapon development report in FY 2021.

Cruise Missile Warhead Life Extension Program

- Phase 6.1 will commence in fourth quarter FY 2014 for duration of 12 months, with no technology maturation.
- Phase 6.2 will commence fourth quarter FY 2015 (18-24 month duration) with limited technology maturation.
- Phase 6.2a will commence in FY 2017 for a 6 month duration, with full technology maturation as a parallel activity.
- Phase 6.3 will start in FY 2018. Current funding profile supports a FPU no earlier than 2027.

Activities and Explanation of Changes

<table>
<tr><th>FY 2014 Enacted</th><th>FY 2015 Request</th><th>Explanation of Changes
FY 2015 vs. FY 2014 Enacted</th></tr>
<tr><td colspan="3">B61-12 Life Extension Program</td></tr>
<tr><td>• System Engineering & Integration: Phase 6.3 development engineering will continue in FY 2014 for the B61 life extension program, which includes refurbishment of nuclear and non-nuclear components and consolidation of the B61-3/4/7/10 into the B61-12 LEP. In FY 2014, NNSA will continue system design and integration efforts between the nuclear bomb assembly components and the Air Force tail kit assembly, including design and production of functional Compatibility Test Units (CTUs) for integration testing with Air Force nuclear certified aircraft. Work will continue on NNSA and DoD trainers including development and delivery of prototype trainers and associated handling gear. System test results from FY 2013 and FY 2014 will be evaluated and assessed against requirements in preparation for component and system baseline design reviews scheduled for FY 2015 and FY 2016.
• Component Development & Production: Phase 6.3 development engineering activities will continue in FY 2014 with focus on testing and analysis of functional hardware produced in FY 2013 for all bomb components, including firing, arming and safing components, radar and weapon controller, nuclear explosives package components, System II interface, limited life components, power supplies, thermal batteries, and use control components. Testing will evaluate performance of the components against normal and abnormal requirements to verify technology readiness levels have been achieved. Analysis of test results will be utilized to update and baseline component designs in preparation for system</td><td>• System Engineering & Integration: Phase 6.3 development engineering will continue in FY 2015 for the B61 life extension program. System design and integration of nuclear bomb components and the Air Force tail kit assembly will continue including assembly of functional Compatibility Test Units (CTUs) for integration testing on required aircraft platforms. Complete system functionality will also be tested for the first time through three drops of Developmental Flight Test Units (DFTUs) from Air Force test aircraft. Work will continue on NNSA and DoD trainers including development and delivery of prototype trainers and associated handling gear. System test results from FY 2013 through FY 2015 will be evaluated and assessed against requirements in preparation for system baseline design reviews scheduled for FY 2016.
• Component Development & Production: Phase 6.3 development engineering activities will continue in FY 2015 with focus on updating and baselining the design of functional hardware produced in FY 2013 and FY 2014 for all bomb components. Component baseline design reviews will be competed in preparation for system baseline design review in FY 2016. Production Plants will begin procurement of long lead items, tooling and testers for production activities. Laboratory and production plants will continue to mature technology readiness and manufacturing readiness including development of component tooling and testers to assure readiness for Phase 6.4 activities in FY 2016.
• System Testing & Qualification: NNSA will continue system development testing and start</td><td>• The $106.0M increase (9.7%) reflects the initial acceleration at NNSA production plants in preparation for Pre-Production Engineering activities in FY 2016, while maintaining development engineering activities at NNSA design laboratories including component and system testing utilizing B61-12 LEP functional hardware. The comprehensive testing in FY 2015 will enable the design laboratories to baseline the bomb design in FY 2016 prior to entry into Phase 6.4 and maintain progress toward a 2020 FPU. NNSA will also ramp-up the purchase of long lead commercial off the shelf parts, equipment, tooling, and testers that will be utilized in War Reserve production, and will begin flight testing on Air Force test aircraft.</td></tr>
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FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs. FY 2014 Enacted
baseline design reviews in FY 2016. Laboratory and production plants will continue to mature manufacturing readiness including development of component tooling and testers to assure readiness for Phase 6.4 activities in FY 2016. • **System Testing & Qualification**: NNSA will ramp-up system development testing in FY 2014. Sandia National Laboratories will lead and conduct over 20 system-level joint, ground and aircraft integration tests in FY 2014. Joint tests will integrate the NNSA bomb assembly and the Air Force tail kit assembly utilizing functional hardware produced in FY 2013. The system testing will be used to assess and validate functional requirements and mechanical, thermal and electrical environments in preparation of baselining the system design in FY 2016. FY 2014 testing will also validate readiness to begin first joint development flight in FY15. Los Alamos National Laboratory will assemble its first B61-12 LEP design hydrodynamic testing to assess certification, and both laboratories will continue to utilize modeling and simulation capabilities to support component and system design margin analysis.	flight testing on required aircraft platforms in FY 2015. Sandia National Laboratories will lead and conduct over 20 system-level joint, ground, aircraft integration, and flight tests in FY 2015. Joint tests will integrate the NNSA bomb assembly and the Air Force tail kit assembly utilizing functional hardware produced in FY 2013 and FY 2014. The system testing will be used to assess and validate functional requirements and mechanical, thermal and electrical environments in preparation of baselining the system design in FY 2016. NNSA will also conduct the first Compatibility Test Unit (CTU) flight test in FY 2015 to assess integration with required aircraft platforms, and the first three joint development flight tests in FY 2015 to assess full system functionality in a normal environment when dropped from Air Force test aircraft. Los Alamos National Laboratory and Sandia National Laboratory will continue to utilize modeling and simulation capabilities to support component and system design margin analysis.	
W76-1 Life Extension Program		
• Perform Annual Assessment for the W76-1 LEP. • Continue efforts for improving the manufacturability of the components and reducing costs. • Continue disassembly of W76-0 for the W76-1 LEP feedstock. • Complete Retrofit Evaluation System Tests (REST) of LEP production components and war reserve hardware. • Complete production of replacement components destructively tested and rebuild of war reserve	• Perform Annual Assessment for the W76-1 LEP. • Continue efforts for improving the manufacturability of the components and reducing costs. • Continue disassembly of W76-0 for the W76-1 LEP feedstock. • Complete Retrofit Evaluation System Tests (REST) of W76-1 LEP production components and war reserve hardware. • Complete production of replacement components destructively tested and rebuild of war reserve	• The $10.7M increase (4.3%) is due to the KCRIMS re-qualification and re-establishment of the W76-1 LEP component hardware production at the new KCP Botts Road Facility. This will result in the W76-1 LEP ramp-up to return to steady state production rates in FY 2015.

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs. FY 2014 Enacted
after REST and stockpile surveillance through the life of the program. • Continue the purchase of materials in economic lot sizes to reduce costs at KCP. • Establish requirements for process transfers, executed activities to assure continuity of production at Pantex during process transfer, and provided for provision of components; materials; containers; special tooling; and certification of test equipment for the move to new facility at Botts Road. • Complete the activities to establish continuous production at KCP by the end of FY 2014. These purchases supported production rates contained in the Requirements and Planning Document (RPD) and schedules to meet the current deliverables in agreement with the Department of the Navy (DoN) and in support of submarine deployment requirements. • The program will continue to execute production builds at an approved rate and realign the production of replacement components with the production schedule, to include components for the nuclear explosive package, AF&F assembly, 2X Acorn Gas Transfer System, Neutron Generator, and associated cables, elastomers, valves, pads, cushions, foam supports, telemetries, and miscellaneous parts.	after REST and stockpile surveillance through the life of the program. • Continue the purchase of materials in economic lot sizes to reduce costs at KCP. • Establish requirements for process transfers, executed activities to assure continuity of production at Pantex during process transfer, and provided for provision of components; materials; containers; special tooling; and certification of test equipment for the move to new facility at Botts Road. • Complete the activities to establish continuous production at KCP by the end of FY 2015. These purchases supported production rates contained in the Requirements and Planning Document (RPD) and schedules to meet the current deliverables in agreement with the Department of the Navy (DoN) and in support of submarine deployment requirements. • The program will continue to execute production builds at an approved rate and realign the production of replacement components with the production schedule, to include components for the nuclear explosive package, AF&F assembly, 2X Acorn Gas Transfer System, Neutron Generator, and associated cables, elastomers, valves, pads, cushions, foam supports, telemetries, and miscellaneous parts.	
W78 Life Extension Program		
• Program will complete FY 2014 developmental engineering activities including a customer requirements review, a surety down select, a nuclear explosive package down select, and system engineering activities to establish design themes and assign budgets for mass, volume, and other physical characteristics that define flight characteristics for a W78 life extension program.	• No program activities in FY 2015.	• The $38.0M decrease reflects the completion of the W78 LEP investigation, the transition of the W78/W88-1 LEP activities to the W78 LEP, and closeout activities in FY 2014 for the W78/W88-1 LEP until it is rescheduled.

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs. FY 2014 Enacted
The program will document the results of Phase 6.2 activities for the W78/88-1 LEP through end of FY 2014, archive program files, and develop a re-start plan for use if/when future funding is allocated to the program.		
W88 Alteration Alt 370		
• Complete Phase 6.3 activities which is a finalization of development activities as stated in FY 2013. • System Engineering & Integration: Phase 6.3 development engineering will continue in FY 2014 for the W88 Alt 370 program, which includes a new AF&F Assembly and Lightning Arrestor Connector. FY 2014 systems engineering and integration activities include assessment and integration of component development efforts in preparation to baseline the W88 Alt 370 design in FY 2015. Work will continue on development and testing of new joint test assemblies to support joint flight testing with the Navy. Type 3 and Type 5 trainers and associated H-gear/T-gear designs will be developed. Joint system integration activities with the Navy will continue including finalization of Interface Control Documents (ICD). • Component Development & Production: Phase 6.3 development engineering activities will continue in FY 2014 for major components and subsystems. Included in this development are the new AF&F assembly, stronglinks, radar, firing subsystem, thermal batteries, impact fuze, and launch accelerometer, lightning arrestor connector, and joint flight test assemblies. Production and delivery of development components and hardware will continue to support component and system level qualification and testing in FY 2014. The	• System Engineering & Integration: Phase 6.4 production engineering will begin in FY 2015 following the completion of component and system-level baseline design reviews. The Navy will hold a preliminary Design Review and Acceptance Group (PDRAAG) in early FY 2015 to assess design and qualification against military requirements. Early Type 5 trainers will be produced in FY 2016 to support production readiness at the Pantex Plant. Process Prove-In (PPI) activities will begin in FY 2016 and continue through early FY 2018. Completion of the final design review, independent peer reviews, and system final design release will be completed in FY 2017. Phase 6.5 authorization will occur in late FY 2017 following the completion of final design review. The first production unit will occur by December FY 2019. • Component Development & Production: Phase 6.4 production engineering activities will initiate in FY 2015 at NNSA production plants to assure all production hardware meets war reserve quality requirements. Process prove-in (PPI) and qualification activities will continue in FY 2016 through early FY 2018 for all major components and assemblies, including new AF&F Assembly, stronglinks, radar, firing subsystem, thermal batteries, impact fuze, and launch accelerometer, lightning arrestor connector, and joint flight test assemblies. All component qualification will be completed in FY 2017 and all war reserve hardware will be required to ship to Pantex in	• The $4.1M decrease (-2.4%) in funding represents a slight decline in engineering development and steady state production development.

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs. FY 2014 Enacted
component Product Realization Teams will conduct their component Baseline Design Reviews (BDRs) in FY 2014 in support of the system BDR scheduled for early FY 2015. Baseline design development of component tooling and testers will continue to support readiness for Phase 6.4 activities in FY 2015. • System Testing & Qualification: Phase 6.3 development engineering activities will continue in FY 2014 with the preparation of ground and flight joint test assemblies. Ground testing will continue in FY 2014 to assess mechanical and thermal environments. Development flight testing will begin in FY 2014 and will utilize functional radar hardware from component development lots produced in FY 2013. Joint testing is required with the Navy to demonstrate compatibility with the Trident D5 missile system.	mid to late FY 2018 to support the first production unit. • System Testing & Qualification: Phase 6.4 production engineering activities will initiate in FY 2015. System qualification testing, including both joint flight tests with the Navy and ground test against normal and abnormal environments will be conducted in FY 2015 through FY 2018. NNSA and the Navy will conduct compatibility testing to certify the W88 Alt 370 with the Trident II D5 missile system. Laboratories will continue modeling and simulations and analysis of test data to support system qualification in FY 2017. A system qualification report will be published documenting the qualification of the W88 Alt 370 in preparation for the first production unit in December FY 2019. The final weapon design report and final design review and acceptance group (DRAAG) reviews will be scheduled for late to mid FY 2019.	
Cruise Missile Warhead Life Extension Program		
• Planning for Phase 6.1 activities will occur during second and third quarters of FY 2014 along with limited, continued support for Air Force missile development activities. • ICD development will continue and Phase 6.1 will commence fourth quarter FY 2014 utilizing FY 2013 carry over dollars from the W78 Stockpile Systems. • FY 2014 Phase 6.1 activities will concentrate on developing a plan for increasing W84 surveillance knowledge, understanding how to assess surety options between the W80 and W84, and further develop system architecture concepts for warhead subsystems. These activities are expected to consume the remaining FY 2013 funding.	• ICD development will continue. • Current funding profile supports a FPU no earlier than 2027. • FY 2015 Phase 6.1 activities will include efforts to increase W84 surveillance data, evaluating surety options for the W80 and W84, continued development of warhead subsystem architectures, writing the Phase 6.1 final study report, developing a comprehensive plan for Phase 6.2 activities including scope, schedule, and cost, and continuing to refine the draft Military Characteristics (MC's) and Stockpile to Target Sequence (STS). • Phase 6.1 activities are being planned in accordance with the requested budget of $9.4M. Changes to the actual allocation will determine the	• The $9.4M increase reflects full year engagement in 6.X activities (Phase 6.1 and 6.2) during FY 2015.

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs. FY 2014 Enacted
	depth of surveillance and surety analysis and architecture development that will be executed. • Phase 6.2 will commence fourth quarter FY 2015 with limited technology maturation. • Phase 6.2a will commence in FY 2017 with full technology maturation as a parallel activity. Phase 6.3 will start in FY 2018.	

Directed Stockpile Work
Stockpile Systems

Description

Stockpile Systems directly executes sustainment activities for the total (active and inactive) stockpile for the B61, W76, W78, W80, B83, W87, and W88 weapons. Safety, security and effectiveness assessments are performed to determine whether an underground nuclear test is required by 50 United States Code 2525 which mandates an Annual Stockpile Assessment and Memorandum to the President. Sustainment activities for each weapon system are identified by four major subprograms that support the enduring stockpile system, as well as LEPs and Major Program Alterations:

Current U.S. nuclear weapons and associated delivery systems

Warheads—Strategic Ballistic Missile Platforms					
Type [a]	***Description***	***Carrier***	***Laboratories***	***Mission***	***Military***
W78	Reentry vehicle warhead	Minuteman III intercontinental ballistic missile	LANL/SNL	Surface to surface	Air Force
W87	Reentry vehicle warhead	Minuteman III intercontinental ballistic missile	LLNL/SNL	Surface to surface	Air Force
W76-0/1	Reentry body warhead	D5 submarine-launched ballistic missile Trident submarine	LANL/SNL	Underwater to surface	Navy
W88	Reentry body warhead	D5 submarine-launched ballistic missile Trident submarine	LANL/SNL	Underwater to surface	Navy
Bombs—Aircraft Platforms					
Type [a]	***Description***	***Carrier***	***Laboratories***	***Mission***	***Military***
B61-3/4/10	Non-strategic bomb	F-15, F-16, certified NATO aircraft	LANL/SNL	Air to surface	Air Force/ Select NATO forces
B61-7	Strategic bomb	B-52 and B-2 bombers	LANL/SNL	Air to surface	Air Force
B61-11	Strategic bomb	B-2 bomber	LANL/SNL	Air to surface	Air Force
B83-1	Strategic bomb	B-52 and B-2 bombers	LLNL/SNL	Air to surface	Air Force
Warheads—Cruise Missile Platforms					
Type [a]	***Description***	***Carrier***	***Laboratories***	***Mission***	***Military***
W80-1	Air-launched cruise missile strategic weapons	B-52 bomber	LLNL/SNL	Air to surface	Air Force

LANL = Los Alamos National Laboratory
LLNL = Lawrence Livermore National Laboratory
NATO = North Atlantic Treaty Organization
SNL = Sandia National Laboratories
[a] The suffix associated with each warhead or bomb type (*e.g.*, “-0/1” for the W76) represents the modification associated with the respective weapon.

(1) Weapon Maintenance: includes production of Limited Life Components (LLCs) which include Gas Transfer Systems (GTS) and Neutron Generators (NGs) as required in accordance with National Requirements Documents and/or Directive Schedules; day-to-day stockpile maintenance/repair activities; production and delivery of components for each weapon type; refurbishment and replacement of aging components to maintain stockpile life; and rebuilds.

(2) Weapon Surveillance: includes new material laboratory tests, new material flight tests, retrofit evaluation system laboratory and flight tests, stockpile laboratory tests, stockpile flight tests, quality evaluations, special testing, and surveillance of weapon systems to support assessment of the safety, security, and effectiveness of the nuclear weapons stockpile and also contribute to the Annual Assessment and memorandum to the President.

(3) Weapon Assessment and Support: includes activities associated with management of the fielded weapon system including: project/program management (time management, milestone management, cost management, human resources management, risk management, management reviews, reports, interfaces, and contracts); system engineering (requirements, design, analysis, technical decisions, system integration, weapon project reviews, engineering documentation, and design definition); and joint NNSA/DoD activities (Unsatisfactory Report responses, Project Officer and Project Officer Group POG meetings and activities, and technical publications support). Provide systems and component engineering support, support the planning, resolution, and documentation of SFIs to include assessment of root cause, extent of conditions, and impact t to system effectiveness or safety. Also includes activities associated with planning, developing, and updating the technical basis for the materials, components, and weapons and performing the weapon assessments including: computational simulation and physical simulation for normal environments, abnormal environments, and nuclear safety; performance of component and system Quantification of Margins and Uncertainties (QMU) analysis and reports. Finally, activities associated with preparation, writing, and coordination of Annual Assessment Reports (AARs) and Weapon Reliability Report and activities needed to assess/resolve system-specific weapon response issues and to provide support to the Nuclear Explosive Safety (NES) and the Nuclear Weapon Safety Study Groups (NWSSG) as required.

(4) Development Studies/Capability Improvements: includes activities associated with improved surveillance, technical basis improvements, technology maturation for insertion or replacement, and system/surety studies.

B61 Stockpile Systems

The B61 aircraft delivered gravity bombs are the oldest weapons in the enduring stockpile. The B61 family includes five modifications with two distinct categories. The strategic category includes the B61 Modifications -7 and -11, with Modification-11 being the only active earth penetrating weapon. The non-strategic category includes the B61 Modifications -3, -4, and -10 supporting our extended nuclear commitment.

W76 Stockpile Systems

The W76-0 is the warhead integrated into the Trident II D5 Strategic Weapon System. It is part of the Submarine Launched Ballistic Missile (SLBM) force. The W76-0/Mk4 is completed by NNSA as a Reentry Body Assembly and delivered to the DoD.

W78 Stockpile Systems

The W78 is a warhead integrated into the Air Force's Mk12A re-entry vehicle deployed on the Minuteman III Intercontinental Ballistic Missile (ICBM). It is part of the ICBM force.

W80 Stockpile Systems

The W80 is a warhead used in the Air Launched Cruise Missile deployed by the Air Force and the Tomahawk Land Attack Missile-Nuclear (TLAM-N) deployed by the Navy.

B83 Stockpile Systems

The B83 is an aircraft delivered, strategic gravity bomb deployed by the Air Force.

W87 Stockpile Systems

The W87 is a warhead integrated into the Air Force's Mk21 re-entry vehicle deployed on the Minuteman III ICBM. It is part of the ICBM force.

W88 Stockpile Systems

The W88 is integrated into the Trident II D5 Strategic Weapon System. It is part of the Submarine Launched Ballistic Missile (SLBM) force. The W88/Mk5 is completed by NNSA as Reentry Body Assembly and delivered to the DoD.

FY 2016-FY 2019 Key Milestones

B61 Stockpile Systems

- **Weapon Maintenance:** Continue to produce LLCs and achieve first production on electronic neutron generator qualified for B61-11 in FY 2019.
- **Weapon Surveillance:** Continue surveillance activities to include but not limited to: disassembly and inspections, system-level laboratory tests, joint flight testing, component and material evaluations, and assessment.
- **Weapon Assessment and Support:** Continue weapon assessment activities necessary to complete Weapon Reliability and Annual Assessment Reports, which include: laboratory testing and analysis, and significant finding investigations as required.
- **Development Studies/Capability Improvements:** Continue feasibility studies as required and in conjunction with the DoD as necessary.

W76 Stockpile Systems

- **Weapon Maintenance:** Continue scheduled activities as stated in FY 2014.

- **Weapon Surveillance:** Continue and complete W76-0 and continue to conduct W76-1 stockpile surveillance to include: disassembly and inspection (D&I), system-level laboratory and joint flight testing, component and material evaluations (CME), and platform compatibility and testing activities.
- **Weapon Assessment and Support:** Continue annual activities as stated in FY 2014.
- **Development Studies/Capability Improvements:** Continue annual activities as stated in FY 2014.

W78 Stockpile Systems

- **Weapon Maintenance:** Continue annual activities and Execute repair, maintenance and replacement of aging components as required.
- **Weapon Surveillance:** Continue annual activities as stated in FY 2014.
- **Weapon Assessment and Support:** Continue annual activities as stated in FY 2014.
- **Development Studies/Capability Improvements:** Conduct feasibility studies as required and in conjunction with the DoD as necessary.

W80 Stockpile Systems

- **Weapon Maintenance:** Continue production of LLCs and Alt 369 which includes neutron generator replacement.
- **Weapon Surveillance:** Continue annual activities FY 2014.
- **Weapon Assessment and Support:** Continue annual activities FY 2014.
- **Development Studies/Capability Improvements:** Continue annual activities as stated in FY 2014.

B83 Stockpile Systems

- **Weapon Maintenance:** Continue annual activities as stated in FY 2014.
- **Weapon Surveillance:** Continue annual activities as stated in FY 2014.
- **Weapon Assessment and Support:** Continue annual activities as stated in FY 2014.
- **Development Studies/Capability Improvements:** Continue annual activities as stated in FY 2014.

W87 Stockpile Systems

- **Weapon Maintenance:** Continue annual activities as stated in FY 2014 to include neutron generator replacement.
- **Weapon Surveillance:** Continue annual activities as stated in FY 2014.
- **Weapon Assessment and Support:** Continue annual activities as stated in FY 2014.
- **Development Studies/Capability Improvements:** Continue annual activities as stated in FY 2014. Continue Gas Transfer System development activities through FY 2018.

W88 Stockpile Systems

- **Weapon Maintenance:** Achieve First Production Unit build of new Neutron Generator. Continue to execute repair, maintenance, and replacement of aging weapon components. Full scale production of Neutron Generators begins in FY 2018.
- **Weapon Surveillance:** Continue annual activities FY 2014.
- **Weapon Assessment and Support:** Continue annual activities FY 2014.
- **Development Studies/Capability Improvements:** Continue and complete System level NG qualification activities to replace legacy W88 System NG. Conduct feasibility studies in conjunction with the DoD; provide laboratory and management expertise to the POG and DoD Safety Studies.

Stockpile Systems

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs. FY 2014 Enacted
B61 Stockpile Systems		
• **Weapon Maintenance:** Continue development activities toward joint qualification of the Electronic Neutron Generator for the B61 and B83. Continue to produce LLCs. • **Weapon Surveillance:** Continue surveillance activities, including, but not limited to: disassembly and inspections, system-level laboratory tests, joint flight tests, component and material evaluations, and assessment. Continue development activities on Joint Test Assembly Modernization program toward a first production unit (FPU) in FY 2015. Continue activities in support of cable pulldown test for B61-11. Complete qualification activities on the Weapons Evaluation Test Laboratory (WETL) Tester Upgrade project to complete a Qualification Engineering Release (QER) for the B61-3/4 in FY 2014. • **Weapon Assessment and Support:** Continue weapon assessment activities necessary to complete Weapon Reliability and Annual Assessment Reports, to include: laboratory testing and analysis, and conduct significant finding investigations as required. • **Development Studies/Capability Improvements:** Transfer of responsibility for the Electronic Neutron Generator development from the B83. Continue feasibility studies as required and in conjunction with the DoD as necessary.	• **Weapon Maintenance:** Continue to produce LLCs. Continue ELNG development and qualification activities to achieve a first production unit for the B61-11 in FY 2019. • **Weapon Surveillance:** Continue surveillance activities, including, but not limited to: disassembly and inspections, system-level laboratory tests, joint flight tests, component and material evaluations, and assessment. Achieve first production unit (FPU) for the JTA Modernization program. • **Weapon Assessment and Support:** Continue weapon assessment activities necessary to complete Weapon Reliability and Annual Assessment Reports, which include: laboratory testing and analysis, and significant finding investigations as required. • **Development Studies/Capability Improvements:** Continue design activities for the Electronic Neutron Generator. Continue feasibility studies as required and in conjunction with the DoD as necessar*y*.	• The $26.1M increase (+31%) accounts for the transfer of the Electronic Neutron Generator (ELNG) joint (B83/B61) development and qualification responsibilities from the B83 program to the B61 program in the amount of $10M. Along with this change includes the base Neutron Generator infrastructure costs that were tied to the B83 program which will now be carried by the B61 in the amount of $16M. These changes were made to the B61 program as a result of the NWC decision on July 8th, 2013 which modified the requirements for the B83-1.
W76 Stockpile Systems		
• **Weapon Maintenance:** Continue to produce LLCs. • **Weapon Surveillance:** Conduct W76-1 and restart W76-0 surveillance activities to include: disassembly and inspection (D&I), system-level	• **Weapon Maintenance:** Continue to produce LLCs. • **Weapon Surveillance:** Conduct W76-0 and W76-1 surveillance to include: disassembly and inspection (D&I), system-level laboratory and joint	• The $1.5M decrease (-3%) represents a change in scope of program deliverables that are slightly reduced due to the change in production of surveillance replacements of the MC4380A

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs. FY 2014 Enacted
laboratory and joint flight testing, component and material evaluations (CME), and platform compatibility and testing activities. • **Weapon Assessment and Support:** Continue to conduct weapon assessment activities necessary to complete Weapon Reliability and Annual Assessment Reports to include: laboratory/site testing and analysis, trainer refurbishments, and SFIs. • **Development Studies/Capability Improvements:** Provide laboratory and management expertise to POG and DoD Safety Studies. W76 development studies and capabilities will be focused toward the on-going LEP.	flight testing, component and material evaluations (CME), and platform compatibility and testing activities. • **Weapon Assessment and Support:** Continue to conduct weapon assessment activities necessary to complete Weapon Reliability and Annual Assessment Reports to include: laboratory/site testing and analysis, trainer refurbishments, and SFIs. • **Development Studies/Capability Improvements:** Provide laboratory and management expertise to POG and DoD Safety Studies. W76 development studies and capabilities will be focused toward the on-going LEP.	Neutron Generator previously planned for FY 2015. Additional production of MC4380As was completed in FY 2013 due to workload restructuring caused by the W87 Neutron Generator production issues.
W78 Stockpile Systems		
• **Weapon Maintenance:** Continue to produce LLCs and obtain authorization to execute repair; and perform maintenance and replacement of aging components as required. • **Weapon Surveillance:** Continue surveillance activities include but not limited to: disassembly and inspections, system-level laboratory tests, joint flight testing, component and material evaluations, and assessment. • **Weapon Assessment and Support:** Continue weapon assessment activities necessary to complete Weapon Reliability and Annual Assessment Reports, to include: laboratory testing and analysis, and Significant Finding Investigations as required. • **Development Studies/Capability Improvements:** Conduct feasibility studies as required and in conjunction with the DoD as necessary. The Cruise Missile Warhead LEP requires no additional funding in FY 2014. ICD development will continue. Phase 6.1 will commence fourth quarter FY 2014 utilizing FY 2013 carryover balances from	• **Weapon Maintenance:** Continue annual activities and Execute repair, maintenance and replacement of aging components as required. • **Weapon Surveillance:** Continue surveillance activities include but not limited to: disassembly and inspections, system-level laboratory tests, joint flight testing, component and material evaluations, and assessment. • **Weapon Assessment and Support:** Continue weapon assessment activities necessary to complete Weapon Reliability and Annual Assessment Reports, to include: laboratory testing and analysis, and Significant Finding Investigations as required. • **Development Studies/Capability Improvements:** Conduct feasibility studies as required and in conjunction with the DoD as necessary	• The $8.3M increase (+15%) in scope of program deliverables reflects the activities to support the ramp-up for the authorization basis activities for W78 at the Pantex Plant, weapon repairs, and the production of the MC4381 Neutron Generators.

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs. FY 2014 Enacted
W78 Stockpile Systems.		
W80 Stockpile Systems		
• **Weapon Maintenance:** Continue to produce LLCs. Continue NG development, PPI, CER, and design/producibility reviews in preparation for the FY 2015 NG FPU. Continue ALT 369 activities in preparation of the FY 2015 FPU and reacceptance of W80-1 WES components. • **Weapon Surveillance:** Continue surveillance activities include: disassembly and inspection, system-level laboratory and joint flight testing, component and material evaluations, and platform compatibility and testing activities. • **Weapon Assessment and Support:** Continue weapon assessment activities necessary to complete Weapon Reliability and Annual Assessment Reports, to include: laboratory/site testing, modeling and analysis, trainer refurbishments, POG and DoD safety studies, significant finding investigations. • **Development Studies/Capability Improvements:** Continue feasibility studies as required in conjunction with the DoD; provide NG subassembly, detonator and timer driver design, and development lots as well as system qualification and transportation testing at Sandia National Laboratories to meet First Production Unit in FY 2015.	• **Weapon Maintenance:** Continue annual activities in FY 2014. Top program priority is the production of LLCs to include the reaching FPU of the new W80 NG. Continue ALT 369 activities in preparation of the FY 2015 FPU and reacceptance of W80-1 WES components • **Weapon Surveillance:** Continue annual activities as stated in FY 2014. • **Weapon Assessment and Support:** Continue annual activities as stated in FY 2014. • **Development Studies/Capability Improvements:** Continue annual activities as stated in FY 2014. Complete FPU of NG in FY 2015.	• The $20.3M increase (+40%) reflects System Base Neutron Generator infrastructure costs and production costs resulting from the transition from Neutron Generator development to NG production. Start-up activities at Pantex to establish an SS-21 process that support a January 2016 ALT369 FPU at Pantex are also included in the increase.
B83 Stockpile Systems		
• **Weapon Maintenance:** Continue production of LLCs. Continue work on ALT 353 (replacement Gas Transfer System) toward an efficient pause in FY 2014 to prepare for re-start in FY 2017 timeframe. Continue production and gas bottle fills for the Life Storage Program. • **Weapon Surveillance:** Continue surveillance	**Weapon Maintenance:** Continue production of LLCs. • **Weapon Surveillance:** Continue surveillance activities, including, but not limited to: disassembly and inspections, system-level laboratory tests, joint flight tests, component and material evaluations, and assessment. Complete activities for a Qualification Engineering Release	• The $8.2M increase (+15%) reflects the telemetry flight test assets in inventory that will accommodate flight testing through FY 2018 at a minimum flight test requirement of two per year. The increase will allow the program to develop telemetry assets to sustain the flight test program beyond

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs. FY 2014 Enacted
activities, including, but not limited to: disassembly and inspections, system-level laboratory tests, joint flight tests, component and material evaluations, and assessment. Continue qualification activities for Weapons Evaluation Test Laboratory (WETL) Tester Upgrade program to achieve a Qualification Engineering Release (QER) for the B83 in FY 2015. • **Weapon Assessment and Support:** Continue weapon assessment activities necessary to complete Weapon Reliability and Annual Assessment Reports, to include: laboratory testing and analysis, and significant finding investigations as required. • **Development Studies/Capability Improvements:** Continue feasibility studies as required and in conjunction with the DoD as necessary. Transfer responsibility for the Electronic Neutron Generator (ELNG) development over to the B61. Continue to participate in the design, development and qualification activities for the ELNG (ALT 753). Prepare for restart of development activities for Joint Test Assembly Sustainment.	(QER) for the WETL Tester Upgrade in FY 2015 to support continued B83 system laboratory testing. • **Weapon Assessment and Support:** Continue weapon assessment activities necessary to complete Weapon Reliability and Annual Assessment Reports, to include: laboratory testing and analysis, and significant finding investigations as required. • **Development Studies/Capability Improvements:** Continue feasibility studies as required and in conjunction with the DoD as necessary. Continue to participate in the design, development and qualification activities for the Electronic Neutron Generator (ALT 753). Restart development activities for Joint Test Assembly Sustainment.	FY 2018 (at two per year).
W87 Stockpile Systems		
• **Weapon Maintenance:** Continue to produce LLCs; and execute repair, maintenance, and replacement of aging weapon components to include completion of Neutron Generator development and transition to full scale production. • **Weapon Surveillance:** Continue surveillance activities include: disassembly and inspection, system-level laboratory and joint flight testing, component and material evaluations, and platform compatibility and testing activities. In addition, Retrofit Evaluation System Tests for the W87 Limited Life Component Exchange and Firing	• **Weapon Maintenance:** Continue to produce LLCs; and execute repair, maintenance, and replacement of aging weapon components to include completion of Neutron Generator development and transition to full scale production. • **Weapon Surveillance:** Continue surveillance activities include: disassembly and inspection, system-level laboratory and joint flight testing, component and material evaluations, and platform compatibility and testing activities. In addition, Retrofit Evaluation System Tests for the W87 Limited Life Component Exchange and Firing	• The $10.3M decrease (-10%) in scope of program deliverable is due to completion of engineering evaluation and problem solving for the technical issues encountered in FY 2013 and the transition of steady state production for the W87 Neutron Generator production as compared with FY 2014. However, the decrease is partially offset with increased funding for completion of WR repairs, the production of replacement firing sets, and the engineering and development effort for the replacement Gas Transfer System required to sustain the W87 stockpile.

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs. FY 2014 Enacted
Set Rebuilds will commence in FY 2014. • **Weapon Assessment and Support:** Continue weapon assessment necessary to complete Weapon Reliability and Annual Assessment Reports, to include: laboratory/site testing and analysis, Project Officer Group and Department of Defense safety studies, and Significant Finding Investigations. • **Development Studies/Capability Improvement**s: Continue feasibility studies as required in conjunction with the Department of Defense. Continue Gas Transfer System replacement activities.	Set Rebuilds will commence in FY 2014. • **Weapon Assessment and Support:** Continue weapon assessment necessary to complete Weapon Reliability and Annual Assessment Reports, to include: laboratory/site testing and analysis, Project Officer Group and Department of Defense safety studies, and Significant Finding Investigations. • **Development Studies/Capability Improvement**s: Continue feasibility studies as required in conjunction with the Department of Defense. Continue Gas Transfer System replacement activities.	
W88 Stockpile Systems		
• **Weapon Maintenance:** Continue to execute repair, maintenance, and replacement of aging weapon components. • **Weapon Surveillance:** Continue surveillance activities to include: D&I, system-level laboratory and joint flight testing, CME, and platform compatibility and testing activities. • **Weapon Assessment and Support:** Continue weapon assessment activities necessary to complete Weapon Reliability and Annual Assessment Reports, to include: laboratory/site testing and analysis, trainer refurbishments, and SFIs. • **Development Studies/Capability Improvements:** Begin critical NG Timer/Driver Development and Integration activities to replace legacy W88 System NG. Conduct feasibility studies in conjunction with the DoD; provide laboratory and management expertise to the POG and DoD Safety Studies.	• **Weapon Maintenance:** Achieve First Production Unit build of new Neutron Generator. Continue to execute repair, maintenance, and replacement of aging weapon components. Full scale production of Neutron Generators begins in FY 2018. • **Weapon Surveillance:** Continue surveillance activities to include: D&I, system-level laboratory and joint flight testing, CME, and platform compatibility and testing activities. • **Weapon Assessment and Support:** Continue weapon assessment activities necessary to complete Weapon Reliability and Annual Assessment Reports, to include: laboratory/site testing and analysis, trainer refurbishments, and SFIs. • **Development Studies/Capability Improvements:** Continue critical minimal NG Timer/Driver Development/Integration and start System level NG qualification activities to replace legacy W88 System NG. Conduct feasibility studies in conjunction with the DoD; provide laboratory and management expertise to the POG and DoD Safety Studies.	• The $25.5M increase (+41%) in scope of program deliverable is due to the ramp-up of surveillance and Neutron Generator Development/Integration activities to meet First Production Unit date of August 2019.

Directed Stockpile Work
Weapons Dismantlement and Disposition

Description

Weapons Dismantlement and Disposition (WDD) is a critical element of NNSA's integrated effort to transform the enterprise and the stockpile. Specific activities include weapons disassembly, characterization of components to identify both hazards and classification issues, disposition of retired warhead system components, and surveillance of selected components from retired warheads. Other supporting activities specific to retired warheads include: conducting hazard assessments; issuing safety analysis reports; conducting laboratory and production plant safety studies; procuring shipping and storage equipment; and declassification and sanitization of component parts. WDD relies on several enabling programs to complete its mission, such as Stockpile Services Production Support for shipping, receiving, and equipment maintenance, and Readiness in Technical Base and Facilities (RTBF) for infrastructure sustainment and containers, and the Office of Secure Transportation for movement of weapons and weapons components.

FY 2016-FY 2019 Key Milestones and Assumptions

Key Milestones

- Y-12 will complete development of a post FY 2015 recovery plan.
- Pantex will complete development of a post FY 2015 recovery plan.
- Continue annual activities as stated in the annual Dismantlement Program Plan.
- NNSA will develop a new schedule for dismantlement of weapons retired prior to FY 2009.

Assumptions

- B53 component dismantlement at Y-12 will be delayed.
- Delay in the installations of W71 process equipment for dismantlement at Y-12.
- No increase in the backlog of components for disposition.

Weapons Dismantlement and Disposition

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs. FY 2014 Enacted
Weapons Dismantlement and Disposition (WDD)		
• Pursue a balanced approach to dismantling warheads and Canned Sub-Assemblies (CSAs) with the disposition of excess weapon components throughout the nuclear security enterprise. • Pantex and Y-12 will continue to maintain through-put via efficiencies and the flexibility to use multi-shift operations when possible. • Pantex will continue an accelerated dismantlement plan for the W76-0 to meet Navy requested stockpile reductions to include additional returns from the Navy. • Continue to provide parts for the life extension programs (B61 and W80-1).	• Y-12 will dismantle CSAs as feedstock for internal and external customers (e.g. Naval Reactors). • Pantex will dismantle weapons such that material and component requirements are met (e.g., W80-1 Alt 369 and W76-1). • Y-12 will receive the minimum number of CSA to sustain the Pantex dismantlement line. • Pantex will reduce weapon dismantlement workload by 40%. • KCP and Savannah River will continue annual disposition activities. • The Lawrence Livermore, Los Alamos, and Sandia National Laboratories will provide technical expertise for system in dismantlement. • Pantex will get the W84 authorized for known state dismantlement. • Sites will not disposition legacy components. • Continue planning efforts to receive additional W76-0s.	• The $24.3M decrease (-45%) is consistent with NNSA's plan to use the dismantlement program as a workload leveler across all programs. The reduced FY 2015 funding does not necessarily mean NNSA will not meet its 2022 goal as the funding comes back up to expected levels later in the FYNSP.

Directed Stockpile Work
Stockpile Services

Description
Stockpile Services provide the logistical, mechanical and support foundation for all DSW operations that are not unique to an individual weapon system. This support for all weapon systems and continued sustainment for all DSW operations includes: Production Support and R&D Support, essential for plant and laboratory critical skills, material, quality controls, and surveillance and evaluation activities for the nuclear stockpile; R&D Certification and Safety, essential technology maturation activities for replacement of components across multiple weapon systems due to performance issues, aging, or needed surety enhancements; Management, Technology, and Production, providing quality engineering and plant management, technology, maintenance and/or replacement of weapons related equipment, and production services; Plutonium Infrastructure Sustainment, enabling activities to achieve and maintain a cost-effective plutonium capability; and Tritium Readiness, producing tritium necessary to maintain required national security inventory of tritium which decays at a rate of 5.5% per year.

Production Support (PS)
Production Support is the backbone for the manufacturing capability of the stockpile and includes those activities that provide the capability and capacity to sustain the nuclear security enterprise's production mission. The production mission is defined as weapon assembly, weapon disassembly, component production, and weapon safety and reliability testing. Production Support funding not only sustains current DSW capabilities, but enables the modernization of the production capabilities to improve efficiency and to prepare manufacturing operations to meet future requirements. As indicated previously, this mission requires close coordination with the Readiness Campaign, which is charged with development and initial deployment of new manufacturing and production capabilities.

The Production Support mission scope includes:

(1) Engineering Operations – Internal plant-wide activities that establish product process flows and improvements, develop and maintain operating procedures, determine critical design parameter and manufacturing process capabilities, establish process controls, metrics and quality indices, and develop process safety controls/assessments;

(2) Manufacturing Operations – Activities that manage and provide oversight to manufacturing departments and includes all internal non-weapon-type specific manufacturing operations and processes, material controls, supervision, planning and scheduling, inventory control, internal production-related transportation and internal production related safety activities. It also includes classified manufacturing operations that cannot be associated with a particular warhead;

(3) Quality, Supervision, and Control – Includes activities dealing with quality control of operating expenses, supervision of general in-line inspection and radiography, procedures development and execution, process control certification for War Reserve (WR) products, measurement standards and calibration techniques, calibration of equipment, tooling, gages and testers, and QA-related equipment/process for certification;

(4) Tool, Gage, and Equipment Services – Activities that include preparation of specifications and designs for non-weapon-type specific tooling (tools, gages, jigs and fixtures) and test equipment, as well as, design and development of tester software (including tester control and product assurance). This category also includes work related to verification/qualification of hardware and software, and procurement processes and maintenance (corrective and preventative) that directly support production-related equipment/process components;

(5) Purchasing, Shipping, and Materials Management – Planning, engineering, supplier management and logistics activities associated with the materials supply chain; and

(6) Electronic Product Flow – Activities that include internal plant-wide purchase, design, development, installation, configuration, testing, training and maintenance of computer systems (hardware and software) directly linked to the performance of site-specific production functions, but are separate and distinct from general-use administrative/office automated systems. Supported systems are in both unclassified and classified environments that enable manufacturing and quality assurance functions. In these environments, information technology elements are directly linked to plant-wide production.

Research and Development (R&D) Support

R&D Support includes ongoing activities that directly enable the internal design laboratory R&D activities at that specific site, including management activities which support stockpile studies and programmatic work for multiple system and or nonspecific systems. R&D Support also provides the necessary administrative or organizational infrastructure to support internal design laboratory work the scope described below within a specific laboratory.

The R&D Support mission scope includes:

(1) R&D Infrastructure Support – Includes the internal-laboratory work that maintains the technical and scientific base (equipment, people, and facilities). Specific activities include maintaining and upgrading computer systems; developing and providing the R&D staff with technical skills and knowledge necessary to conduct the core base of tests and experiments; and applying any tax which may be levied on an R&D program for building and capital use.

(2) Program Management and Integration for R&D Activities – Includes maintaining financial databases; milestone tracking; risk analyses; and R&D support for the Project Officers Group (POG) and Nuclear Weapons Safety Study Group. Specific activities include management activities focused on the aspects of DSW Program Management; assignment of R&D laboratory personnel/assignees to external/offsite federal organizations; and activities associated with managing and executing R&D support service contracts.

(3) Laboratory Research and Development Support to the Production Agencies – Covers laboratory work required to ensure that the production agencies can commence and continue directed R&D work.

(4) Nuclear Component Surveillance - Provides multi-system surveillance support and analysis to gain a better understanding of nuclear explosive package components and anomalies, including activities for surveillance transformation.

(5) Quality Control for Research and Development - Ensures that quality control, procedures, methods, instructions, certifications, calibration, and processes are implemented in R&D activities.

Research and Development Certification and Safety (RDCS)

RDCS provides the infrastructure (through personnel and technology) for both specific and core capabilities necessary to support the maintenance for a reliable and operable stockpile. These activities conducted at the design laboratories and the Nevada National Security Site include the basic research required for developing and maturing surety, NGs, GTSs, and other components to enable use by multiple systems. RDCS also supports surveillance, and base capability for conducting hydrodynamic experiments, and an experimental program for plutonium and subcritical experiments.

The R&D C&S mission scope includes:

(1) Weapon Component Development – Includes activities associated with integrated system concepts and development for components not identified with a specific warhead. These components include, but are not limited to NGs, GTS, LLCs, and power sources. Warhead specific component development is managed by tail number under Stockpile Systems. Weapon Component Development funds the development and early maturation stages of components that will be required by the stockpile due to performance issues, aging, or needed surety enhancement. Weapon Component Development matures new technologies for multiple system application to required technology readiness levels that enable individual systems within the enduring stockpile to further mature components to meet system specific needs. Weapon component development activities include:

- System Engineering and Integration: Activities required to ensure integration of system concepts and revised architecture engineering for refurbished weapons.

- Surety Systems: Activities associated with development and upgrades of fielded safety and use control systems including development of system-level context for future surety systems to ensure contemporary and evolving threats and safety issues are properly addressed over the lifetime of the enduring stockpile.

- Gas Transfer Systems: Activities associated with enhancing the design and capabilities of limited life components to significantly offset weapon aging and uncertainty issues. Neutron Generators: Activities required for continual development and improvements associated with NG technologies to offset aging effects (e.g., components and materials); development and qualification of improved rad-hard Ferro-electric and electronic neutron generator designs.

- Arming, Fuzing and Firing: Required R&D activities needed to modernize arming, fuzing, and firing subsystems to incorporate contemporary electronics and control systems and additional functions.

- Nuclear Explosives Package (NEP) and Related Components: R&D activities in support of technologies required for next generation components and materials required to ensure safety, security, reliability and performance of the aging nuclear explosive packages of the enduring stockpile.

(2) Research and Development (R&D) Studies – Includes non-warhead-specific R&D activities, studies, assessments, and analyses that support weapon certification and safety processes; nuclear and explosives operations and facilities; and weapon effects and vulnerability determination. Specific studies include:

- Independent Nuclear Weapons Assessment (INWAP): Activities associated with planning, data exchange and conducting cross laboratory assessments of weapons in the active stockpile. INWAP is tied to the Annual Assessment process via 50 United States Code 2525.

- Nuclear Safety R&D: Activities associated with nuclear safety R&D, leading to development of safety technologies with strategic partners; technology applications for increased surety of materials; and activities, studies and experiments in support of safe nuclear explosive operations.

- Weapons Effects Studies: Studies associated with weapon effects studies that are not covered by the Nuclear Survivability subprogram of the Engineering Campaign.

- Vulnerability Studies: Studies associated with non-traditional vulnerability R&D studies that deal with use control.

- Primary and Secondary Assessments: Assessment activities associated with conducting annual assessment and certification of weapon primaries and secondaries.

- Chemistry and Material Science Assessments: Assessment activities associated with conducting chemistry and materials science assessments related to NEPs.

- System Analyses Related to the NEP: Activities associated with developing new NEP technologies and methodologies and conducting system analyses to ensure compatibility with integrated micro-electronic systems.

(3) Base Hydrodynamic Experiments – Includes activities required to ensure the base hydro capability is available to support experiments across multiple systems and system level experiments; activities associated with maintaining the hydrodynamic material control program in support of scheduled multiple systems experiments and tests; activities associated with designing, preparing and assembling test components for multiple systems base hydrodynamic experiments and sub-critical tests; activities associated with providing inputs and updates to the National Hydro Test Plan for multiple systems; activities associated with conducting and analyzing results of hydrodynamic experiments and sub-critical tests across multiple systems; and activities associated with conducting and analyzing results of hydrodynamic experiments for certifying LEPs.

(4) Dynamic Plutonium Experiments (DPE) – Includes activities to ensure the DPE events are conducted as scheduled in support of multiple systems and technology base; activities required to ensure the base DPE capability is available to support experiments across multiple systems and system level experiments; activities associated with designing, preparing and assembling test components for multiple systems of dynamic plutonium experiments; activities associated with providing inputs and updates to the DPE Test Plan for multiple systems; and activities associated with conducting and analyzing results of dynamic plutonium experiments.

(5) Department of Defense/Department of Energy Memorandum of Understanding (DoD/DOE MOU) – Includes development activities supporting agreed-upon DoD/DOE joint munitions studies under the current Memorandum of Understanding.

Management, Technology, and Production (MTP)

The MTP activities provide the products, components and/or services for multi-weapon system surveillance (laboratory/flight test data collection and analysis), weapons reliability reporting to the DoD, DSW requirements tracking and execution, management and operation, and stockpile planning. MTP funding is used to provide plant and laboratory personnel to help sustain the stockpile that includes activities relating to surveillance, weapons requirements process improvements, engineering authorizations, safety assessments, use control technologies used to keep the weapons safe, secure and available to the war fighter upon presidential release authority, containers, base spares used to maintain weapons in a safe reliable status, studies and assessments with respect to nuclear operation safety, weapon components for use in multiple weapons systems and transportation/handling gear used to safely and securely store weapons and transport weapons between DoD sites and DOE sites for use in multiple weapons systems. Information systems used to record weapon and component transactional activities are essential for weapon stockpile inventory and accountability reporting used to report quantities, values and status to Congress. Additionally, MTP includes weapons sustainment activities that benefit the nuclear security enterprise mission as a whole, as opposed to Production Support activities that focus on supporting internal site-specific production missions.

The MTP mission scope includes:

(1) Product Realization Integrated Digital Enterprise (PRIDE) – Operation and maintenance of 44 classified electronic information management systems required for weapons accountability, vendor material purchases, viewing/transfer of design and engineering drawings, and transit for surveillance, Limited Life Component Exchanges (LLCEs), dismantlements, and weapons refurbishment & manufacturing;

(2) Weapons Training and Military Liaison – Staffing the multi-weapon subject matter experts for Unsatisfactory Reports (URs) associated with DoD's field issues for testing and handling gear, Technical Publications, and coding issues—Allows maintenance operations to return weapons back to active status;

(3) Studies and Initiatives — Collaborative Authorization for Safety Basis Total Lifecycle Enhancement (CASTLE) provides a computational tool to assess and report realistic fault circuits and environmental threats to operations at Pantex (PX), designing conservative work environments to avoid a violent reaction—Pantex throughput is critically dependent on this program. Uranium Sustainment identifies, prioritizes, and funds critical Uranium-related requirements (skilled labor, casting, rolling, forming and machining) that re-establish and/or sustain capability at Y-12 to manufacture cases and canned subassemblies (CSAs) for the stockpile —uranium capability is required for future LEPs;

(4) General Management Support — Non-programmatic costs for program management and oversight, shared taxes, assignees and support services contracts;

(5) Assessments & Studies (Use Control) — include in-depth vulnerability assessments of nuclear weapons in the stockpile; identifying or developing and deploying common technologies to address vulnerabilities, if found; and special studies to support the decision processes for optimizing life extension program designs and for option down-select decisions by senior officials;

(6) Surveillance — Efforts that focus on multi-system, common use, or non-weapon specific activities (data capture, reliability assessments, flight test planning) directly contributing to stockpile evaluation, including activities and new capabilities for surveillance transformation—lengthened surveillance cycles (due to budget) to collect data for weapon systems could violate weapon reliability, annual assessment stockpile rationale standards, and lab/flight test requirements. Lengthening surveillance cycles increase the time that a potential defect could go undetected in the stockpile, and subsequently increase the amount of time the DoD could have a deficient nuclear deterrent;

(7) External Production Missions – Weapon Response subject matter experts across all systems and all laboratories – Weapon Response manning is critical for Pantex to return to operations in bays and cells (should an unexpected weapon condition or anomaly be observed during LLCE replacement). Weapon delivery schedules are reliant on throughput at the Pantex bays;

(8) Base Spares (Production) – Activities associated with production of new non-weapon specific base spares, container, LLC forging procurements, detonators, mock HE and other weapon components;

(9) Base Spares (Maintenance) – Activities associated with maintaining existing non-weapon specific base spares, test handling gear and containers, GTSs, Use Control equipment, code management switch tubes and other weapon components.

Plutonium Infrastructure Sustainment

The NNSA Plutonium Infrastructure Sustainment Program mission is to provide a plutonium-based component manufacturing capability at reliable capacities that enables nuclear weapon planners and designers to sustain a safe, secure, and effective nuclear arsenal and plan for reduced nuclear stockpiles. The Program provide the equipment and personnel necessary to fabricate plutonium pits, qualify and certify produced pits for stockpile use, and manufacture precision plutonium devices for science-related evaluation. Additionally, the Program recovers ^{238}Pu for Defense Programs and invests in ^{238}Pu-related capabilities for the stockpile.

The Plutonium Infrastructure Sustainment mission scope includes:

(1) Investments in equipment and process design to support reconstitution of power supply manufacturing and assembly capability (that once existed at the Mound and Pinellas facilities) for Defense Programs;

(2) Plutonium pit process engineering, process qualification, pit manufacturing, pit manufacturing equipment and personnel, pit fabrication tooling design and manufacturing, and non-nuclear pit component manufacturing;

(3) Design agency and production agency activities for plutonium stockpile product development;

(4) Engineering and physics-based evaluation and testing of development pits necessary for war reserve production;

(5) Fabrication of design definition development pits that explores design changes for possible surety-related or other desirable features;

(6) Fabrication of plutonium devices for science and stockpile-related subcritical experiments;

(7) Recovery and reclamation of strategic quantities of ^{238}Pu for stockpile needs;

(8) Production support for Los Alamos National Laboratory (LANL) manufacturing capability such as radiological control program, facility and equipment maintenance, criticality safety program, laundry services, shipping and receiving, authorization basis, work control documentation, training and qualification, spare parts; and

(9) A variety of LANL and readiness activities including waste management, storage capability, and nuclear operations infrastructure and facility configurations.

Tritium Readiness

The Tritium Readiness mission scope has moved from the Readiness Campaign to DSW.

The Tritium Readiness subprogram operates the capability for producing tritium necessary for the national inventory and required for the nuclear weapons mission. Irradiation of TPBARs in TVA's Watts Bar nuclear reactor began in October 2003. Plans are being initiated to make additional production capacity available by gaining Nuclear Regulatory Commission (NRC) approval of a reactor safety analysis to allow for irradiating more than 704 TPBARs per cycle, and also for increasing the effluent release limit at Watts Bar Unit 1 supported by the recent Supplemental Environmental Impact Statement (SEIS). The program continues to maintain a contingency option to use TVA's Sequoyah Unit 1 and 2 reactors to meet tritium production requirements. DSW coordinates with the DoD to determine Stockpile requirements, and provides annual updates to DoD on tritium production and inventory status. NNSA produces tritium by irradiating tritium-producing burnable absorber rods (TPBARs) in one or more nuclear power reactors operated by the Tennessee Valley Authority (TVA). Tritium radioactively decays at approximately 5.5% per year, requiring ongoing replenishment. Production quantities take into consideration material that has been recycled and recovered from deployed reservoirs.

The Tritium Readiness mission scope includes:

(1) TPBAR Technology – Tritium production requires active design, surveillance, and research and development efforts to support irradiation of TPBARs by TVA. This includes post-irradiation examination of limited use assembly TPBARs to evaluate the performance effects of design refinements, as well as providing the technical evaluation, monitoring, and analysis required by the NRC. Test and evaluation efforts in Idaho National Laboratory's Advanced Test Reactor are required to understand the time-release performance of the lithium-aluminate pellets and to evaluate pellet configurations with less volume. Void volume in the TPBAR is a limiting factor on TPBAR failures in a reactor accident, and thinner pellets may be able to increase internal void volume, reducing internal pressure, and improving results for the reactor safety analysis needed to support NRC licensing for increased production. Reduced internal pressure may also reduce the permeation release of tritium from the TPBARs to the reactor coolant system and to the environment. In addition, other tests are required to understand indications of an in-reactor TPBAR failure, a dropped TPBAR in the spent fuel pool, and the shelf-life limitation of TPBAR components and sub-assemblies.

(2) TPBAR Fabrication – TPBAR fabrication involves commercial contracts for maintaining the subcontractor supply chain to provide a dozen specialized components and assembling these into TPBARs required to meet each refueling cycle at TVA's WBN1 reactor. This includes maintaining two vendors that provide the classified processes for producing the plated zircaloy getters and the specially coated stainless steel cladding tubes that, respectively, enable the TPBAR to trap tritium within and minimize its permeation to the reactor coolant system. In the near future, the TPBAR fabrication vendor must restart production of lithium-aluminate pellets that were produced in a very large batch more than 10 years ago and are now running out.

(3) TPBAR Irradiation – The production of tritium occurs in TVA's nuclear reactor when the lithium-aluminate pellets held in the TPBAR are bombarded by neutrons over a period of 18 months. The Department of Energy (DOE) and TVA entered into an Interagency Agreement in 1999 under which TVA provides irradiation services in accordance with the national security provision in TVA's original charter. This Interagency Agreement is subject to the Economy Act that requires TVA to be reimbursed for all tritium related costs but no profit. TVA computes the cost of fuel with and without TPBARs and then invoices NNSA for the cost of the excess fuel required. When the non-proliferation implications of using TVA's commercial reactor for tritium production was addressed in an interagency report to Congress in July 1998, it said, "to minimize divergence from the military/civilian dichotomy, the Department should fuel such a reactor exclusively with U.S. low enriched uranium fuel that was unencumbered by peaceful use pledges." This required that NNSA compel TVA to acquire unobligated fuel from the sole domestic supplier of uranium enrichment, the United States Enrichment Corporation (USEC). To ensure that unobligated fuel would be available for timely use of the two backup reactors, as well as for WBN1, TVA was compelled to enter into long-term contracts with USEC to provide fuel for the three reactors included in the Interagency Agreement. NNSA was required to pay any difference in the price of enrichment between USEC and the remaining commercial enrichment market. Funding for irradiation also includes TVA expenses for managing the tritium production operations and an irradiation fee that was set at $4,950.00 per TPBAR per year in year 2000 dollars. This irradiation fee is to provide TVA with fair and reasonable compensation for indirect costs due to tritium production.

(4) TPBAR Transportation – After the TPBARs are irradiated in Watts Bar Unit 1 (WBN1) for 18 months, these radioactive TPBARs are loaded into consolidation canisters, placed in specialized shipping casks, and trucked from TVA to the Tritium Extraction Facility (TEF) at the Savannah River Site (SRS). This transportation, which also provides for commercial security protection for the shipments, is handled by a commercial contractor under long-term contract to NNSA. In addition, radioactive-contaminated hardware fixtures must be transported to the Nevada National Security Site for disposal after each irradiation cycle.

(5) TPBAR Extraction – TPBAR extraction takes place at the TEF at SRS. TPBARs are received from shipments from TVA in batches of up to 300 TPBARs per canister. Prior to extraction, the TPBARs are prepared by cutting the heads off each individual rod. After this process, a canister containing all the headless TPBARs is moved into the extraction furnace where a special vacuum-thermal process is employed to extract the tritium. Once waste gases are separated from the product gas, the tritium is purified and then piped directly to the loading and unloading facility, next door at SRS, where it is loaded into gas transfer systems to meet the schedule for limited life component exchanges for deployed units under custody of the Department of Defense. Until the TEF is required to do more than two extractions per year, the TEF is maintained in a Responsive Operations mode where personnel are rotated to other buildings and tasks when not involved in extraction operations. Under Responsive Operations, the staff is approximately 55 full-time equivalents (FTEs) for 9 months of the year and approximately 65 FTEs for the 3 months when an extraction is being conducted. In addition to maintaining the facility in a state of operational readiness and conducting periodic extractions, this $500M facility requires a number of infrastructure improvement and upkeep projects, some of which span multiple years, including establishing the ability for the TEF to stack its own waste gases (which are currently piped to another building), providing upgrades to obsolete systems capturing zinc-65 in the extraction furnace, and improving safety monitoring in the facility. These projects have been deferred for a number of years due to budget constraints; however, they must be completed before the TEF can transition to a Full Operations mode, when it will be required to conduct three or four extractions per year before the end of this decade.

FY 2016-FY 2019 Key Milestones
Production Support (PS)

- Continue annual activities as stated in FY 2015.
- During F Y 2016, KCP continues preparation (engineering and quality) for B61 LEP non-nuclear components.
- Continue five (from two) Neutron Generator production lines at SNL, requiring increased quality and calibration services.
- Continue the funding of Nuclear Enterprise Assurance at SNL & KCP.
- During F Y 2017 – FY 2019, B61-12 LEP equipment and process costs will be supported for neutron generators and production workload increases to meet schedules.
- During FY 2016 – FY 2019, increased funding is required at Y-12 to support Lithium Direct Material Manufacturing.
- During FY 2016 – FY 2019, establish multi-year acquisition program to upgrade and integrate weapon logistics, nuclear materials accountability, production planning and scheduling systems.

Research and Development (R&D) Support

- Further develop and demonstrate Quantification of Margins and Uncertainties (QMU) and apply QMU methodology toward assessment, certification, and qualification needs for the stockpile.
- Continue providing scientific and technical support to the production agencies to help achieve weapon production directives.
- Continue providing R&D infrastructure support at the national laboratories for archiving activities to support current Mods/Alts/LEPs and software upgrades required to certify and qualify current Mods/Alts/LEPs.

R&D Certification and Safety (RDCS)

- Continue to annually assess the safety, security, and effectiveness of the enduring weapons systems in the stockpile, reporting weapon system status ultimately to the President, and determine if an underground nuclear test is required to solve a problem.
- Continue to analyze, evaluate, and close high priority SFIs in accordance with the currently approved baseline closure plans.
- Continue design and development of LLCEs such as: NGs, GTSs, energetics, and other replacement components.
- Continue to identify other components which need to be developed and matured for future insertion opportunities to support approved MODs/Alts.
- Continue performing nuclear safety R&D studies and weapons effects studies.
- Continue to provide the infrastructure for conducting hydrodynamic tests in support of enduring stockpile systems and multiple system experiments.
- Continue supporting development of NGs (electronic and small generator types) and GTSs.
- Continue development of hardware qualification; system certification and required computer modeling and simulation activities to sustain the stockpile.
- Continue analysis of stockpile primary, secondary, chemistry, and materials systems analysis and annual assessments related to activities for the enduring stockpile.
- Continue supporting subcritical and other experiments at Nevada National Security Site.
- Continue supporting Independent Nuclear Weapon Assessment Teams activities, within the National Laboratories to assess the state of health and performance of the weapon system in support of the Annual Assessment Process.
- Complete technical maturation of components for multiple systems.

Management, Technology, and Production (MTP)

- Continue annual activities as stated in FY 2015.
- Use Control technology and Code Management System upgrades continue to enter the design stage.

- Increased Surveillance requirements in FY 2017 - FY 2019 due to stockpile aging projections.
- Increased weapon response activity for pit and CSA non-destructive evaluations
- Increase in flight testing support for the Tonopah Test Range.
- Maintain the required 12 month Weapon Evaluation Test Laboratory schedule cycle instead of an 18 month cycle for most weapon systems.

Plutonium Infrastructure Sustainment (Pu Sus)

- Continue investments in replacing aged, end-of-life pit manufacturing equipment (acquire, install, configure, authorize for operation).
- Build W87-design developmental pits each year to sustaining fabrication capability.
- Perform engineering evaluation of development pits (pit certification).
- Support reconstitution of Power Supply capability.
- Complete ^{238}Pu recovery.
- Participate in the LANL Landlord Cost Recovery Program based on services for: distributed, non-fixed operating costs (usually equated to space used) in the plutonium facility; analytical chemistry distributed variable, non-fixed costs; and waste processing distributed, non-fixed costs.

Tritium Readiness

- Provide reimbursement to TVA under the Economy Act for TPBAR irradiation services, excess uranium requirements, premiums for unobligated enrichment of reactor fuel, and management and engineering support for tritium production.
- Ramp up production incrementally in each succeeding reactor cycle until it reaches production required to meet mission needs.
- Utilize unobligated reactor fuel obtained by TVA from Energy Northwest under the Depleted Uranium Enrichment Project.
- Provide technical production support and surveillance for tritium production operations at TVA by the TPBAR design authority to ensure technical oversight in support of TVA and NRC requirements.
- Continue performance tests on tritium-producing lithium-aluminate pellets in the Advanced Test Reactor at Idaho National Laboratory and conduct post irradiation examinations and data analysis.
- Continue to improve understanding of in-reactor TPBAR performance to reduce program risks and improve the safety and reliability of the tritium production process.
- Obtain NRC approval for an improved reactor safety analysis to reduce on-going reactor fuel requirements.
- Maintain the TEF in Responsive Operations mode, conduct one extraction, and perform capital improvement projects for control systems and facilities to begin to prepare TEF for Full Operations in the future.
- In FY 2018, transition the TEF from Responsive Operations to Full Operations mode conducting multiple extractions annually.
- Fabricate TPBARs to meet 18-month reactor cycles, initiate contracts to restart production of major TPBAR components, and maintain the related component supply chain.
- Provide transportation for irradiated TPBARs from each cycle at WBN1 to the TEF and for post irradiation examinations.
- Provide transportation for disposal of tritium program radioactive waste from base plates and thimble plugs from TVA.
- October 2015 - Commence irradiation of 704 TPBARs in Cycle 14 at WBN1.
- March 2017 - Complete irradiation of 704 TPBARs in WBN1 Cycle 14.
- April 2017 - Commence irradiation of 1280 TPBARs in Cycle 15 at WBN1.
- September 2018 - Complete irradiation of 1280 TPBARs in WBN1 Cycle 15.
- October 2018 - Commence irradiation of 1664 TPBARs in Cycle 16 at WBN1.

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs. FY 2014 Enacted
Production Support (PS)		

• Provide engineering and manufacturing operations for weapon operations (W76-1 LEP, B61-12 LEP, dismantlement, and detonator cable assembly production) to meet directive schedules including revised W76-1 LEP production rate.
• Provide Labor to support Purchasing, Shipping, and Materials Management.
• Provide Labor and supplies for Preventative maintenance and equipment calibrations.
• Perform Product Certification (independent evaluation of build records) for auditing purposes.
• Provide Quality Assurance and Procedural/Engineering Safety.
• Provide Classified Computer Network operations and maintenance.
• Continue shop floor modernization project at Y-12 (Momentum) in FY 2015.
• Provide maintenance and troubleshooting support for 300 plus active testers.
• Continue to maintain equipment and processes for neutron generator and power supply production to meet revised schedules.
• Continue KCRIMS restart of operations by requalification of products and testers.
• Perform Infrastructure Modernization.
• Complete special projects (calorimeter reconstruction, special nuclear material vehicle, oven consolidation, optical contour measurement machine).
• Deferred maintenance at Y-12 for Lithium Direct Material Manufacturing.
• Supply Chain Risk Management startup costs and new equipment costs for Nuclear Enterprise Assurance (NEA) at KCP.
	• Provide engineering and manufacturing operations for weapon operations (W76-1 LEP, B61-12 LEP, dismantlement, and detonator cable assembly production) to meet directive schedules including revised W76-1 LEP production rate.
	• Provide Labor to support Purchasing, Shipping, and Materials Management.
	• Provide Labor and supplies for Preventative maintenance and equipment calibrations.
	• Perform Product Certification (independent evaluation of build records) for auditing purposes.
	• Provide Quality Assurance and Procedural/Engineering Safety.
	• Provide Classified Computer Network operations and maintenance.
	• Continue shop floor modernization project at Y-12 (Momentum) in FY 2015.
	• Provide maintenance and troubleshooting support for 300 plus active testers.
	• Continue to maintain equipment and processes for neutron generator and power supply production to meet revised schedules.
	• Continue KCRIMS restart of operations by requalification of products and testers.
	• Perform Infrastructure Modernization.
	• Complete special projects (Environmental Conditioning, oven consolidation, optical contour measurement machine, calorimeter replacement, Mass Spectrometer replacement, and classified servers).
	• Expand to five (from two) Neutron Generator production lines at SNL, requiring increased quality and calibration services.
	• KCP begins preparation (engineering and quality)
		• The $5.9M increase (+1.7%) represents the following:
		  • Increased funding for deferred maintenance at Y-12 for Lithium Direct Material Manufacturing.
		  • Maintenance and upkeep of production equipment in aging facilities.

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs. FY 2014 Enacted
• Additional Tool, Gauge & Equipment Services required at Y-12 to support increased W76-1 production rate to meet directive schedules.	for B61 LEP non-nuclear components. • Begin funding Nuclear Enterprise Assurance at SNL and KCP. • Y-12 W76-1 LEP plant floor and glove boxes reach steady state production (increase in upkeep of aged facilities planned to retire but now must be maintained with delay in Uranium Production Facility completion).	
Research and Development (R&D) Support		
• Further develop and demonstrate Quantification of Margins and Uncertainties (QMU) and apply QMU methodology toward assessment, certification, and qualification needs for the stockpile. • Continue to provide scientific and technical support to the production agencies to help achieve weapon production directives. • Continue providing R&D infrastructure support at the national laboratories to include archiving activities to support current Mods/Alts/LEPs and support limited software upgrades require for certification and qualification for current Mods/Alts/LEPs.	• Further develop and demonstrate Quantification of Margins and Uncertainties (QMU) and apply QMU methodology toward assessment, certification, and qualification needs for the stockpile. • Continue providing scientific and technical support to the production agencies to help achieve weapon production directives. • Continue providing R&D infrastructure support at the national laboratories for archiving activities to support current Mods/Alts/LEPs and software upgrades required to certify and qualify current Mods/Alts/LEPs.	• The $4.7M increase (+19%) reflects additional upgrade of computers and software to replace obsolete/outdated hardware and software and increased archiving of past weapon data (converting sunset technology files to state-of-the-art data storage and security systems).
R&D Certification and Safety (RDCS)		
• Continue annual assessment of the safety, security, and effectiveness of the enduring weapons systems in the stockpile, reporting weapon system status ultimately to the President, and determine if an underground nuclear test is required to solve a problem. • Continue analysis and evaluation to and close high priority Significant Finding Investigations in accordance with the currently approved baseline closure plans. • Continue design and development of GTS for B83 and W87 Alts.	• Continue to annually assess the safety, security, and effectiveness of the enduring weapons systems in the stockpile, reporting weapon system status ultimately to the President, and determine if an underground nuclear test is required to solve a problem. • Continue to analyze, evaluate, and close high priority SFIs in accordance with the currently approved baseline closure plans. • Continue design and development of GTS for B83 and W87 Alts. • Continue development of High Efficiency	• The $50.3M increase (+33%) restores support for multi-application component technology maturation critical to long term sustainment of stockpile support equipment and to future stockpile life extension programs; and develops and implements options to mitigate known weapon surety risks across the nuclear weapon enterprise. The increase will provide Design and Production Agencies with lead time to develop critical skills and capabilities necessary to replace sunset technologies, improve surety, and sustain reliability. The increase will be applied to GTS

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs. FY 2014 Enacted
• Continue development of High Efficiency Adaptable TM Transmitter for W88 Alt. • Continue upgrade of the Code management System for the legacy stockpile and B61-12. • Identify other components which need to be developed and matured for future insertion opportunities to support approved Mods/Alts. • Perform nuclear safety R&D studies and weapons effects studies. • Prepare and provide the infrastructure for conducting hydrodynamic tests in support of enduring stockpile systems and multiple system experiments. • Continue surety development .Continue to develop hardware qualification; system certification and required computer modeling and simulation activities to sustain the stockpile. • Continue analysis of stockpile primary, secondary, chemistry, and materials systems analysis and annual assessments related to activities for the enduring stockpile. • Continue providing support for subcritical and other experiments at Nevada National Security Site. • Continue support for Independent Nuclear Weapon Assessment Teams activities, within the National Laboratories to assess the state of health and performance of the weapon system in support of the Annual Assessment Process. • Support technical maturation of select B61-12 LEP components.	Adaptable TM Transmitter for W88 Alt. • Continue upgrade of the Code Management System for the legacy stockpile. • Resume design and development of LLCEs such as NGs, GTSs, energetics, and other replacement components. • Continue to identify other components which need to be developed and matured for future insertion opportunities to support approved MODs/Alts. • Continue performing nuclear safety R&D studies and weapons effects studies. • Continue to provide the infrastructure for conducting hydrodynamic tests in support of enduring stockpile systems and multiple system experiments. • Continue surety development. Continue development of hardware qualification; system certification and required computer modeling and simulation activities to sustain the stockpile. • Continue analysis of stockpile primary, secondary, chemistry, and materials systems analysis and annual assessments related to activities for the enduring stockpile. • Continue supporting subcritical and other experiments at Nevada National Security Site. • Continue supporting Independent Nuclear Weapon Assessment Teams activities, within the National Laboratories to assess the state of health and performance of the weapon system in support of the Annual Assessment Process. • Complete technical maturation of select B61-12 LEP components. • Resume development of thermal battery, surety components, abnormal launch accelerometer, and detonation monitoring assembly. • Begin development of aluminum reservoir, radar improvements, and small advanced fireset with enhanced technology.	advanced design, code management system, surety development, development of advanced power sources, and development of other key components used in multiple weapon systems. The increase also funds additional hydrodynamic and dynamic plutonium experiments.

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs. FY 2014 Enacted
Management, Technology, and Production (MTP)		

• Execute surveillance activities in accordance with FY 2014 Program Control Documents, and FY 2014 Integrated Weapon Evaluation Team Plans.
• Study options to improve safety and use control technologies for the B61-12 LEP and future LEPs.
• Manage applications required for realizing weapon products and ensure that correct, high-quality information is shared with those who require it at all locations in a secure and timely way.
• Respond to DoD Unsatisfactory Reports about issues with the stockpile and provide DoD training on weapons maintenance activities in the field.
• Perform production and maintenance of test and handling gear, spare parts for DoD, and containers.
• Execute production of weapon components for use in multiple weapon systems (examples: Batteries, Stronglinks, switch tubes, polymers, and containers).
• Conduct program management and oversight of weapon sustainment activities.
• Develop tools to identify/assess threats to operations (Collaborative Authorization for Safety Basis (CASTLE) module for Universal Electrostatic Discharge).
• Maintain Uranium processing capability.
• Conduct Maintenance and Operations Program Management.
• Conduct weapons Use Control Studies.
	• Execute surveillance activities in accordance with FY 2015 Program Control Documents, and FY 2015 Integrated Weapon Evaluation Team Plans.
	• Study options to improve safety and use control technologies for the B61-12 LEP and future LEPs.
	• Perform Operations & Maintenance of an Integrated Digital Enterprise to share high quality weapon data with those who require it at all locations in a secure and timely way.
	• Respond to DoD Unsatisfactory Reports about issues with the stockpile.
	• Provide DoD training on weapons maintenance activities in the field.
	• Perform production and maintenance of test and handling gear, spare parts for DoD, and containers.
	• Execute production of weapon components for use in multiple weapon systems (examples: Batteries, Stronglinks, switch tubes, polymers, and containers).
	• Conduct program management and oversight of weapon sustainment activities.
	• Develop tools to identify/assess threats to operations (Collaborative Authorization for Safety Basis (CASTLE) module for Universal Electrostatic Discharge).
	• Maintain Uranium processing capability.
	• Conduct weapons Use Control Studies.
		• The $27.6M (+13%) increase represents the following:
		  • Critical deferred & required multi-system surveillance activities.
		  • Weapon Evaluation Test Laboratory schedule will return to the required 12-month cycle instead of an 18-month cycle for most weapon systems.
		  • Multi-system weapon response and external production resources will be added to provide safety studies for un-interrupted assembly/disassembly operations at production plants.
		  • Use Control technology and Code Management System upgrades entering the design stage.

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs. FY 2014 Enacted
Plutonium Infrastructure Sustainment (Pu Sus)		
• Maintain base personnel and sustain pit-manufacturing capability. • Continue upgrades and investments for end-of-life equipment (acquire, install, configure, authorize for operation). • Build W87-design developmental pits. • Conduct engineering evaluation of development pits (pit certification). • Support reconstitution of Power Supply capability • Recover ^{238}Pu. • Participate in the Los Alamos National Laboratory (LANL) Landlord Cost Recovery Program based on beneficial services for: distributed, non-fixed operating costs (usually equated to space used) in the plutonium facility; analytical chemistry distributed variable, non-fixed costs; and waste processing distributed, non-fixed costs.	• Maintain base personnel and sustain pit-manufacturing capability. • Continue upgrades and investments for end-of-life equipment (acquire, install, configure, authorize for operation). • Build W87-design developmental pits. • Conduct engineering evaluation of development pits (pit certification). • Support reconstitution of Power Supply capability. • Recover ^{238}Pu. • Participate in the LANL Landlord Cost Recovery Program based on services for: distributed, non-fixed operating costs (usually equated to space used) in the plutonium facility; analytical chemistry distributed variable, non-fixed costs; and waste processing distributed, non-fixed costs.	• The $19.5M increase (+15%) reflects additional investment in base capability modernization and pit certification capability, some of which were not funded in FY 2014.
Tritium Readiness		

• Provide reimbursement to TVA under the Economy Act for TPBAR irradiation services, excess uranium requirements, and management and engineering support for tritium production.
• Provide reimbursement to TVA under the Economy Act for enrichment price differential due to NNSA requiring TVA to fuel WBN1 from USEC contract.
• Provide reimbursement to TVA under the Economy Act for enrichment price differential due to NNSA requiring TVA to fuel Sequoyah Unit 2 (SQN2) backup reactor from USEC contract.
• Provide technical production support and surveillance for tritium production operations at TVA by the TPBAR design authority to ensure technical oversight in support of TVA and NRC requirements.
• Purchase nuclear reactor fuel to support
	• Provide reimbursement to TVA under the Economy Act for TPBAR irradiation services, excess uranium requirements, and management and engineering support for tritium production.
	• Provide reimbursement to TVA under the Economy Act for enrichment price differential due to NNSA requiring TVA to fuel WBN1 from USEC contract.
	• Provide reimbursement to TVA under the Economy Act for enrichment price differential due to NNSA requiring TVA to fuel two Sequoyah backup reactors from USEC contract.
	• Develop a TPBAR peak cladding temperature computational model to support an improved reactor safety analysis to reduce reactor fuel requirements in the future.
	• Utilize unobligated reactor fuel obtained by TVA from Energy Northwest under the Depleted
		• The $60.1M (+75%) increase reflects:
		  • Preparations to ramp-up production to meet planned stockpile requirements for irradiation levels at TVA go from 544 TPBARS to 704 TPBARS while fuel purchases go from 704 TPBARS to 1,280 TPBARS.
		  • Irradiation levels at TVA go from 624 to 704 TPBARS while fuel purchases require building reactivity in the core in preparation for going to 1280 TPBARS in FY2017.
		  • Increased costs at TVA ($29.2M) for unobligated reactor fuel and excess uranium -- enrichment price differentials for fuel from the Depleted Uranium Enrichment Project and from the last year of the USEC contract; (due to staggered reactor refueling cycles, FY 2015 supports three refuelings, compared to two refuelings in FY 2014) -- also irradiation fees

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs. FY 2014 Enacted
irradiation of 704 TPBARs in Cycle 13.Maintain the TEF in Responsive Operations mode, conduct one extraction, and receive one shipment of irradiated TPBARS from TVA while deferring preventive maintenance and facility upkeep projects. • Maintain the TPBAR fabrication contractor and related component supply chain and deliver 704 TPBARs for irradiation in Cycle 13 to TVA's Watts Bar Unit 1 reactor. • Provide transportation for irradiated TPBARs from WBN1 cycle 12 to the TEF, post irradiation examinations to PNNL and water reactor hardware to the Nevada National Security Site.	Uranium Enrichment Project. • Provide technical production support and surveillance for tritium production operations at TVA by the TPBAR design authority to ensure technical oversight in support of TVA and NRC requirements. • Commence in-reactor performance tests on tritium-producing lithium-aluminate pellets in the Advanced Test Reactor at Idaho National Laboratory. • Continue to improve understanding of in-reactor TPBAR performance to reduce program risks and improve the safety and reliability of the tritium production process. • Maintain the TEF in Responsive Operations mode, conduct one extraction, and perform upkeep and improvement projects to prepare TEF for Full Operations in the future. • Fabricate 704 TPBARs to meet 18-month reactor cycles, initiate contracts to restart production of major TPBAR components, and maintain the related component supply chain.	for 704 TPBARs versus half-year at 544 and 704 in FY 2014. • At the TEF ($16.2M), resume deferred preventative maintenance, and deferred infrastructure projects for direct stacking, zinc-65 abatement, and worker protection systems. • Other increases ($11.2M) account for efforts to resume the required program to achieve the mission based on the planned workload. These efforts include improved reactor safety analysis modeling, pellet performance analysis using the Advanced Test Reactor, and new procurements of pellets and liners.

Directed Stockpile Work Performance Measures

In accordance with the GPRA Modernization Act of 2010, the Department sets targets for, and tracks progress toward, achieving performance goals for each program. For more information, refer to the Department's FY 2013 Annual Performance Report.

	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Annual Warheads Certification – Annual percentage of warheads in the stockpile that are safe, secure, reliable, and available to the President for deployment.							
Target	100% of stockpile certified	100% of stockpile certified	100% of stockpile certified	100% of stockpile certified	100% of stockpile certified	100% of stockpile certified	100% of stockpile certified
Result	**Met** - 100						
Endpoint Target	Annually, maintain 100% of warheads in the stockpile as safe, secure, reliable, and available to the President for deployment.						
Retired Weapons Systems Dismantlement – Complete the dismantlement of all weapon systems in excess to stockpile requirements per approved annual schedule published in the P&PD, PCD, and the RPD "annual" documentation with a goal of balancing dismantlement work by mitigating gaps in future stockpile reductions. .							
Target	100% of annual planned dismantlements	100% of annual planned dismantlements	100% of annual planned dismantlements	100% of annual planned dismantlements	100% of annual planned dismantlements	100% of annual planned dismantlements	100% of annual planned dismantlements
Result	**Not Met** - 88						
Endpoint Target	Maintain a balance between production and steady state stockpile reduction dismantlement program.						
Note:	The Dismantlement Annual Performance Goals was changed to complete the recommendation against the finding in the **GAO Draft Report**: GAO-14-206C, Nuclear Weapons: Actions Needed by NNSA to Clarify Dismantlement Performance Goal.						
Steady State W76-1 LEP Production – The percentage of planned builds equal to the percentage of allocated funding as represented in the annual Selected Acquisition Report (SAR).							
Target	N/A	100% of scheduled unit builds	100% of scheduled unit builds	100% of scheduled unit builds	100% of scheduled unit builds	100% of scheduled unit builds	100% of scheduled unit builds
Result	N/A						
Endpoint Target	Complete production of the NWC-approved W76-1 LEP production schedule by FY 2019. Baseline Change Request was approved on April 23, 2013 to combine the **LEP Production Costs** and **W76-1 LEP** metrics into a single metric beginning in FY 2014. This new metric **Steady State W76-1 LEP Production** reflects the new single metric.						
Tritium Production – Cumulative number of Tritium-Producing Burnable Absorber Rods irradiated in Tennessee Valley Authority reactors to provide the capability of producing new tritium to support national security requirements.							
Target	1,872 TPBARs	2,416 TPBARs	3,120 TPBARs	3,120 TPBARs	3,824 TPBARs	5,104 TPBARs	5,104 TPBARs
Result	**Met** – 1,872						
Endpoint Target	By the end of FY 2019, complete irradiation of 5,104 Tritium-Producing Burnable Rods (TPBARs) to provide tritium for nuclear weapons.						

FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019

Note: Irradiation of TPBARs is completed every 18 months, or 1.5 years, in approximately October or March. For FY 2013, the irradiation cycle started in October of 2012 and will be complete in March of 2014. Thus, there is no increase to the number of TPBARs irradiated in FY 2013 and, for the same reason, no increase in FY 2016 or FY 2019. This performance measure was moved from the Readiness Campaign, due to direction by Congress.

Directed Stockpile Work
Capital Summary

(Dollars in Thousands)

	Total	Prior Years	FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Current	FY 2015 vs FY 2014 Enacted
Capital Operating Expenses Summary (including (Major Items of Equipment (MIE)							
Capital Equipment >$500K (including MIE)	691,451	196,268	65,327	75,534	75,534	77,060	+1,526
Total, Capital Operating Expenses	**691,451**	**196,268**	**65,327**	**75,534**	**75,534**	**77,060**	**+1,526**
Capital Equipment > $500K (including MIE)							
Total Non-MIE Capital Equipment (>$500K)	571,826	153,342	55,952	57,183	57,183	58,441	1,258
SNM Vehicle, Y-12 National Security Complex	5,509	4,540	1,005	-36	-36	0	+36
6 New Ovens #1, Y-12 National Security Complex	6,067	6,119	-52	0	0	0	0
6 New Ovens #2, Y-12 National Security Complex	6,178	5,845	333	0	0	0	0
LTTD Oven, Y-12 National Security Complex	2,057	2,063	-6	0	0	0	0
Non Destructive Laser Gas Sampling (NDLGS)	2,781	0	0	670	670	2,111	+1,441
X-Ray Machine Bldg. 9981	4,400	0	0	2,200	2,200	2,200	0
Electro Refining (ER) Line Upgrade	36,954	24,359	8,095	4,500	4,500	0	-4,500
Coordinate Measurement Machine #1	14,625	0	0	3,118	3,118	2,267	-851
Coordinate Measurement Machine #2	10,775	0	0	0	0	850	+850
Replacement of Electronic Beam Welder	9,000	0	0	3,620	3,620	5,380	+1,760
CNC Waist Banding Lathe #1	6,000	0	0	0	0	811	+811
Precision Machining	6,279	0	0	4,279	4,279	2,000	-2,279
Dimensional Inspection Box	4,000	0	0	0	0	500	+500
Replace GTS Unloading Lasers, SRS	5,000	0	0	0	0	2,500	+2,500
Total, Capital Equipment (including MIE)	**691,451**	**196,268**	**65,327**	**75,534**	**75,534**	**77,060**	**+1,526**
Total, Capital Summary	**691,451**	**196,268**	**65,327**	**75,534**	**75,534**	**77,060**	**1,526**

Outyears for Directed Stockpile Work

	(Dollars in Thousands)			
	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Capital Operating Expenses Summary (including (Major Items of Equipment (MIE)				
Capital Equipment >$500K (including MIE)	70,128	69,908	69,857	67,369
Total, Capital Operating Expenses	**70,128**	**69,908**	**69,857**	**67,369**
Capital Equipment > $500K (including MIE)				
Total Non-MIE Capital Equipment (>$500K)	59,727	61,041	62,384	63,756
SNM Vehicle, Y-12 National Security Complex	0	0	0	0
6 New Ovens #1, Y-12 National Security Complex	0	0	0	0
6 New Ovens #2, Y-12 National Security Complex	0	0	0	0
LTTD Oven, Y-12 National Security Complex	0	0	0	0
Non Destructive Laser Gas Sampling (NDLGS)	0	0	0	0
X-Ray Machine Bldg. 9981	0	0	0	0
Electro Refining (ER) Line Upgrade	0	0	0	0
Coordinate Measurement Machine #1	3,000	4,000	2,240	0
Coordinate Measurement Machine #2	2,795	2,000	3,000	2,130
Replacement of Electronic Beam Welder	0	0	0	0
CNC Waist Banding Lathe #1	1,539	2,000	900	750
Precision Machining	0	0	0	0
Dimensional Inspection Box	567	867	1,333	733
Replace GTS Unloading Lasers, SRS	2,500	0	0	0
Total, Capital Equipment (including MIE)	**70,128**	**69,908**	**69,857**	**67,369**

Science Campaign

Overview

The Science Campaign provides the expertise and confidence needed to maintain and modernize the nuclear stockpile. Over twenty years have passed since the last underground test. Models of weapon performance, which were originally calibrated to historical nuclear tests, are being replaced with models that are developed and validated with modern scientific approaches. Science-based capabilities now provide the basis for assessments of weapon performance; assure that the nuclear stockpile continues to meet military requirements; and provide a core capability to respond to global nuclear security issues. The Science Campaign capabilities enable development and qualification of advanced safety concepts, new materials and manufacturing processes, reuse and other options for Life Extension Programs (LEPs), and assessments of weapon lifetimes.

Science Campaign products are used to identify future risks to the performance of the stockpile and inform risk mitigation strategies for major elements of stockpile maintenance and modernization. Key Science Campaign products and activities include: (1) annual stockpile assessments; (2) certification statements for LEPs and weapon modifications; (3) prompt resolution of stockpile issues (e.g., Significant Findings Investigations (SFIs), including aging issues); (4) development of certification methodologies for warhead reuse or remanufacturing options for future LEPs; (5) maintenance of readiness capabilities through experiments and assessments; and (6) maturation of technologies in the nuclear explosive package. Science Campaign products are developed in partnerships with the Advanced Simulation and Computing Campaign (ASC), the Inertial Confinement Fusion (ICF) Ignition and High Yield Campaign, the Engineering Campaign, and Directed Stockpile Work (DSW).

One of the Science Campaign's major integrating efforts focuses on developing predictive capabilities for calculating the performance of weapons. One grand challenge is to understand and provide models for primary boost. Contributing to the National Boost Initiative, the Science Campaign is making significant advances in understanding this phenomenon from the initial conditions required for boost to its subsequent dynamics and role in producing the primary yield of stockpile weapons. A second grand challenge is associated with the complex processes occurring during the operation of the secondary. Activities supporting improved models of primary and secondary performance span a range that includes experiments to measure basic properties of materials, hydrodynamic experiments, subcritical experiments that probe properties of plutonium in extreme conditions, and high energy density experiments at ICF facilities that study material in regimes that could otherwise only be examined in nuclear explosions. Predictive science-based models for primary and secondary performance enable maintenance of the stockpile as weapons evolve from the configurations studied during the era of underground testing. In addition, these capabilities are used by the U.S. Intelligence Community for assessments of foreign state weapon activities.

Subprograms of the Science Campaign also contribute to the development of the future national laboratory workforce through the Stewardship Science Academic Alliances (SSAA). SSAA funds university research in unique scientific fields of relevance to stockpile stewardship that are not funded elsewhere by the government or private industry. These include: materials under dynamic conditions and in extreme environments; hydrodynamics; low-energy nuclear science and radiochemistry; and high energy density science.

Highlights of the FY 2015 Budget Request

The $86,707,000 increase in the Science Campaign subprograms between the FY 2014 Enacted level and the FY 2015 Congressional budget request: provides technical expertise and experimental capabilities needed to assess and provide LEP options incorporating the reuse of pits and other components within the nuclear explosives package; provides improved diagnostic capabilities for experiments at U1a in Nevada; and enables improved surety technologies in future LEPs. Many of these themes contribute to a major level 1 milestone in FY 2015. This milestone will document the science base for reusing pits and the certification strategy that were originally designed for conventional high explosives in future LEPs that employ insensitive high explosive lighting systems. In addition, a fraction of the increase from FY 2014 to FY 2015 provides an expansion of predictive weapons capabilities so they are more applicable outside the domain of designs in the U.S. stockpile. This expansion enables use of weapons program capabilities by the intelligence community, provides training in critical weapon skills not exercised during LEPs, and tests the limits of validity of stockpile tools. Their importance for national security was described in a letter sent from the Director of National Intelligence to the Secretary of Energy in 2012.

Major Outyear Priorities and Assumptions

Major outyear priorities include science support for LEP schedules through 2030 (as approved by the Nuclear Weapons Council); developing the next-generation science and engineering workforce required to achieve future nuclear security objectives as described in the Nuclear Posture Review; annual assessment of the stockpile; and development of capabilities needed for resolution of significant findings discovered through stockpile surveillance. Science Campaign activities in support of these priorities include: establishing a sustainable dynamic plutonium experimental capability at the Nevada National Security Site (NNSS) to address potential reuse options and the impact on remanufacturing qualification processes; execution of hydrodynamic experiments supporting advanced certification objectives in safety and security enhancing the metallurgical understanding of the effects of plutonium aging and options for modern manufacturing processes; execution of experiments to inform acceptance criteria for secondary reuse and for the assessment of manufacturing options for other nuclear explosive package components; and expanding predictive capabilities to support assessments of foreign state nuclear weapon activities. A principal assumption is that funding for the Campaigns will be sufficient to meet these priorities. In addition, Science Campaign planning relies on availability of resources in ASC, the Engineering Campaign, the ICF campaign, DSW, and adequate maintenance of the facilities and infrastructure of the nuclear weapons complex.

Science Campaign
Funding

(Dollars in Thousands)

	FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Request	FY 2015 vs FY 2014 Enacted
Science Campaign					
Advanced Certification	39,922	58,747	58,747	58,747	0
Primary Assessment Technologies	86,212	92,000	92,000	112,000	+20,000
Dynamic Materials Properties	89,301	104,000	104,000	117,999	+13,999
Advanced Radiography	27,129	29,509	29,509	79,340	+49,831
Secondary Assessment Technologies	78,656	85,467	85,467	88,344	+2,877
Total, Science Campaign	**321,220**	**369,723**	**369,723**	**456,430**	**+86,707**

Outyears for Science Campaign

(Dollars in Thousands)

	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Science Campaign				
Advanced Certification	63,997	64,133	64,614	65,667
Primary Assessment Technologies	122,009	122,077	122,788	124,745
Dynamic Materials Properties	128,545	128,903	196,005	210,118
Advanced Radiography	114,210	114,814	50,000	40,000
Secondary Assessment Technologies	96,239	96,472	97,202	98,783
Total, Science Campaign	**525,000**	**526,399**	**530,609**	**539,313**

Science Campaign
Explanation of Major Changes
(Dollars in Thousands)

	FY 2015 vs FY 2014 Enacted
Science Campaign	
Advanced Certification: No change between FY 2015 Request and FY 2014 Enacted.	**0**
Primary Assessment Technologies: The increase provides diagnostics, measurements of plutonium aging, and studies of the effect of specific Life Extension Program (LEP) changes on the boost process to enable pit reuse and improved safety in the future stockpile. In addition, the increase supports expansion of predictive science capabilities to be applicable to designs outside the range of those used in the current stockpile, and to enable U.S. Intelligence Community assessments of foreign state nuclear weapon activities.	**+20,000**
Dynamic Materials Properties: The increase supports the diagnostic development and execution of plutonium experiments at the Nevada National Security Site (NNSS). These experiments provide data on materials properties at high pressure and validation of models for the performance of design options considered for future LEPs, in particular qualification of reused components and remanufacturing options.	**+13,999**
Advanced Radiography: Increases in this subprogram include the development of an enhanced radiographic system to diagnose subcritical experiments at U1a located at NNSS. This radiographic system is in alignment with DSW objectives, such as support of modernized surety, pit reuse and remanufacturing options for LEPs, and assessments of aging stockpile systems. An enhanced radiographic system addresses the knowledge gap that exists in understanding late time plutonium compression in weapons. In FY 2015, efforts will be focused on selecting the technical approach, which includes completing the preliminary design and transitioning to a final design for an enhanced NNSS diagnostic capability. Implementation of the diagnostic capability at NNSS will occur during the FYNSP.	**+49,831**
Secondary Assessment Technologies: The Increase supports: platform development on HED facilities to enable resolution of key stockpile performance issues; experiments in support of secondary reuse options; and the transition of High Energy Density (HED) diagnostic calibration capabilities to the Stanford Synchrotron Radiation Laboratory (the facility used previously at Brookhaven is closing).	**+2,877**
Total, Science Campaign	**+86,707**

Science Campaign
Advanced Certification

Description

Advanced Certification is focused on enabling certification of an evolving stockpile in the absence of testing, carried out in part by integrating advances across the supporting science. This subprogram develops tools that support the current stockpile as well as future stockpile options for new safety and security features. Advanced Certification, therefore, provides a strong focal point for key science, technology, and engineering deliverables that enable future life extension certification activities. The subprogram integrates scientific and technological advances that are supported elsewhere in Stockpile Stewardship (Science, ASC, and ICF Campaigns) with input from continuing studies in order to: understand impacts of aging phenomena and design options on weapon performance; enhance the weapons certification process; refine computational tools and methods; advance the physical understanding of surety mechanisms; understand failure modes; assess new manufacturing processes; and provide rapid response to emerging stockpile needs.

FY 2016-FY 2019 Key Milestones

- Develop qualification of primary initiation detonator systems.
- Develop and test prototype Nuclear Explosive Package (NEP) component made using additive manufacturing method.
- Assess qualification path of new Y-12 manufacturing process for component in support of future stockpile work.
- Perform integral hydrodynamic tests to assess options for improvement of surety design in LEP, validate the Scaling and Surrogacy methodology, and study characteristics of historical primary anomalies.
- Conduct focused experiments in support of development and maturation of product-based certification methodology.
- Provide capabilities for product-based certification that enable qualification of components made with advanced manufacturing.
- Conduct assessments of comparable nuclear tests, studies of failure modes, and other advanced methodologies to enable their use in certification of upcoming LEPs.
- Continue studies supporting understanding of scaling and surrogacy to support the experimental basis for weapon assessments.
- Conduct experiments needed to qualify advanced surety technologies.
- Develop a plan for experiments to enable certification of reuse and remanufacturing options for all nuclear components in future LEPs by FY 2016, with the intent to complete the initial set of experiments defined in the plan by FY 2020.

Advanced Certification

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Advanced Certification		
• Experimentally explore a surety mechanism for reuse. • Continue the use of scaling and surrogate experiments to examine and extend concept of "nearness" in historic underground test data and to support weapon assessment activities. • Demonstrate 3D uncertainty quantification for surety. • Develop plan outlining the path forward to product-based certification in support of more rapid, efficient, and robust LEP, Significant Finding Investigation (SFI) closure, and annual assessment activities. • Continue hydrodynamic experiments required for developing certification of pit reuse options. • Initiate development of emerging technologies to meet evolving military requirements, such as additive manufacturing. • Assess material options for replacing key secondary components using modern manufacturing and materials.	• Mature surety concepts and mechanism for reuse and remanufacturing design options. • Perform work associated with Scaling and Surrogacy to enhance primary certification methodology. • Implement improvements in QMU metrics into assessment tools. • Develop plan for product-based certification methodologies for components and systems. • Execute experiments and complete analyses supporting evaluation of pit reuse designs and assess the preliminary plans in support of reuse that are driving diagnostic investments in the out-years. • Mature the development of various NEP components, including those made with additive manufacturing. • Continue assessment of option for replacing secondary components.	• No changes in funding in FY 2015 vs FY 2014.

Science Campaign
Primary Assessment Technologies

Description

Primary Assessment Technologies provides capabilities needed for annual assessment of stockpile primaries, design and certification of future Life Extension Programs (LEPs), improvements in primary safety and security, and for resolving Significant Finding Investigations (SFIs). A principal focus of Primary Assessment Technologies for the next five years will be to continue developing predictive capabilities for modeling boost, a process key to proper functioning of the weapon. Another principal focus is on providing the capability to assess impacts of plutonium aging and changes associated with stockpile LEPs, such as reuse of components and the incorporation of safety changes (e.g., use of insensitive high explosives). Primary Assessment Technologies also provides science capabilities needed for Intelligence Community assessments of foreign nuclear weapon activities.

FY 2016-FY 2019 Key Milestones

- Complete Predictive Capability Framework (PCF) milestone on boost to resolve key uncertainties in stockpile assessment.
- Provide science basis enabling maturation and certification of future LEP options.
- Develop updated assessment of plutonium aging based on new experimental data.
- Expand weapon science capabilities to strengthen Intelligence Community assessments of specific foreign state nuclear weapon activities. This effort will also enable the modern capabilities developed for the stockpile stewardship program to be readied for use by the counterterrorism and counterproliferation program mission.
- Conduct experiments and analyses to resolve principal remaining uncertainties associated with boost. This will enable confident assessment of weapons performance in regimes that differ from those tested either because of aging, changes in manufacturing processes, or changes in design.
- Provide capabilities for predicting primary lifetimes that account for initial production defects.
- Conduct HED experiments to measure properties of burning plasmas relevant for weapon operation.
- Continue to provide the ability to resolve Significant Finding Investigations associated with observations made by modern surveillance tools.

Primary Assessment Technologies

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Primary Assessment Technologies		
• Conduct experiments at ICF facilities to measure properties of materials at extreme conditions and to develop a platform for plutonium. • Assess the impact of specific phenomena on pit lifetimes. • Complete precision measurements for one aspect of fission properties of plutonium to improve the understanding of weapon criticality. • Develop diagnostics enabling improved experimental measurements of high explosives and implosion systems. • Expand predictive capabilities to broaden the applicability of stockpile tools supporting foreign assessment.	• Complete level 1 milestone addressing the capability to reuse pits in future LEPs. • Complete High Energy Density (HED) experiments providing data on the behavior of materials in extreme regimes relevant for stockpile primaries. • Complete high explosive experiments resolving key boost uncertainties. • Expand predictive capabilities to broaden the applicability of stockpile tools supporting foreign assessments and conduct supporting experimental activities.	• Develop diagnostics, measure properties of plutonium aging, and study the effects of specific LEP changes on the boost process to enable pit reuse and other technologies in the future stockpile. • Conduct experiments that expand predictive science capabilities to be applicable to designs outside those in the current stockpile and to support Intelligence Community assessments of foreign state weapon activities.

Science Campaign
Dynamic Materials Properties

Description

Dynamic Materials Properties develops the experimental data and fundamental knowledge to inform modern, physics-based models that describe and predict the behaviors of weapon materials in environments of extreme conditions of pressure, temperature, stress, strain, and strain rates. The materials of interest include high explosives, plutonium, uranium, and other materials used in nuclear weapons primaries and related components. Surrogate materials are used to aid understanding and develop data without the use of Special Nuclear Materials (SNM). They are also used for the development and qualification of advanced diagnostics prior to fielding on more complex and costly nuclear materials. It is essential to continue to invest in understanding the properties and performance of Insensitive High Explosives (IHE), polymers, and foams. New experimental capabilities are developed as required to provide the needed data and to support its interpretation. This subprogram is closely coordinated with the other NNSA Campaigns, DSW, and the Department of Defense (DoD)-DOE Joint Munitions Program.

Required experiments are conducted at laboratory facilities, including PF-4 at TA-55, the Z-machine, U1a, the Advanced Photon Source (APS), Los Alamos Neutron Science Center (LANSCE), Joint Actinide Shock Physics Experimental Research (JASPER) facility, other gas and powder gun facilities, and small-scale laboratories for testing and characterization. Continued research is essential for assessing the use of insensitive high explosives in current weapons systems designed to use conventional high explosives. The consideration of pit and secondary component reuse will also require further study prior to qualification and certification. Key materials data on polymers, foams, and other materials will also continue to be generated, analyzed and incorporated into models.

Dynamic Materials Properties is one of the two substantial funding sources (along with Research and Development Certification and Safety within DSW) for subcritical and other plutonium experiments. This subprogram includes the major experimental capabilities devoted specifically to obtaining data on plutonium under extreme conditions. New experimental capabilities are developed as required to provide the needed data. In particular, subcritical experiments utilizing radiography and/or Photon Doppler Velocimetry (PDV) diagnostic, heating and cooling capabilities on dynamic testing platforms, Z experiments on plutonium, the development of the Phoenix platform, JASPER, and other experimental platforms are all required in order to enable certification of pit reuse with IHE for upcoming LEPs.

FY 2016-FY 2019 Key Milestones

- Prepare and exercise the JASPER capability at NNSS to deliver high pressure plutonium data.
- Develop advanced platforms for high pressure materials measurements on the Z-machine.
- Support subcritical experiments at NNSS in support of upcoming LEPs.
- Develop and field advanced diagnostics for equation-of-state, strength and damage, and hydrodynamic and subcritical experiments, in particular, Multiplexed Photon Doppler Velocimetry (MPDV) advances and pyrometry.
- In support of LEP options, execute experiments providing key data at small-scale experimental facilities: JASPER, TA-55, LANSCE, and the Z machine
- Support the testing and qualification of uranium, surrogates, high explosives, and other non-nuclear materials for remanufacturing options.

Dynamic Materials Properties

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Dynamic Materials Properties		
• Develop the aging and process-aware plutonium multi-phase equation-of-state (EOS) and other properties, especially high-priority data identified as required for the National Boost Initiative (NBI). • Acquire uranium and other materials data (as detailed in the classified Primary and Secondary Assessment Plans) at LANSCE, Z, and other laboratory facilities. • Provide the analysis to inform decisions on investment for future experiments (from small-scale to integral) and related activities for the Predictive Capability Framework (PCF). • Measure characteristics of plutonium at high pressures at JASPER and the Z facility. • Acquire conventional and insensitive high explosive data in support of reuse options. • Execute tests required for upcoming subcritical experiment. • Design and implement experimental capabilities for scaled subcritical experiment evaluating reuse concerns. • Develop advanced diagnostics (heating, pyrometry, MPDV, radiography) in support of hydrodynamic and subcritical experiments.	• Continue acquisition of materials data required for pit reuse options. • Characterize IHE in support of improved stockpile safety. • Develop advanced diagnostics for subcritical and hydrodynamic experiments. • Deliver uranium, surrogates, and non-nuclear materials data required for stockpile stewardship and Significant Findings Investigation (SFI) closure. • Preparation for future experiments with plutonium at U1a. • Execute a subcritical experiment for assessment of pit reuse options. • Development of advanced high-pressure capabilities at Z. • Evaluate the potential use and certification requirements for Additive Manufacturing in future experimental science and LEPs.	• Support for plutonium experiments using the Phoenix platform at NNSS. • Support for a subcritical reuse experiment at NNSS. • Support for testing and qualification of reuse and remanufacturing options.

Science Campaign
Advanced Radiography

Description

Developing predictive capabilities for stockpile stewardship in the absence of nuclear testing relies on the development of advanced platforms and diagnostics to enable and improve the reliable and repeatable measurement of experimental data. This is also true for addressing Significant Finding Investigations (SFIs) and for early technology assessment in the execution of LEPs. Advanced Radiography develops technologies and diagnostics that support experimental activities that are funded primarily within Primary Assessment Technologies, Dynamic Material Properties, Advanced Certification, and DSW. This includes sources, targets, and imaging systems used to diagnose hydrodynamic and subcritical experiments, and the development of platforms and diagnostics for other dynamic material properties experiments, including those that study plutonium properties. These transformational technologies improve the quality and reliability of scientific results at many NNSA experimental facilities including the Dual-Axis Radiographic Hydrodynamic Test (DARHT) facility, Flash X-Ray (FXR) radiographic facility, Z pulsed power facility, U1a at the Nevada National Security Site (NNSS), and Proton Radiography (pRad) at the Los Alamos Neutron Science Center (LANSCE).

A major activity funded through Advanced Radiography includes the development of capabilities to diagnose plutonium behavior in weapons geometries at multiple scales through subcritical experiments at U1a at NNSS. Increases in this subprogram include the development of an enhanced radiographic system to diagnose subcritical experiments at U1a located at NNSS. This radiographic system is in alignment with DSW objectives, such as support of modernized surety, pit reuse and remanufacturing options for LEPs, and assessments of aging stockpile systems. An enhanced radiographic system addresses the knowledge gap that exists in understanding late time plutonium compression in weapons. An analysis of proposals for enhanced radiography at NNSS was completed in May 2011 in which 15 options were developed that varied in capability, complexity, and cost. Based on this assessment, the success of radiographic diagnostics in supporting the Gemini campaign, continued analysis of facility options at NNSS, and the relative priority within NNSA's budgeting over the FYNSP, NNSA determined that it will deploy new capabilities at U1a in phases. The first phase will be implemented in 2018 support of a campaign of scaled experiments funded from Dynamic Material Properties, Primary Assessment Technologies and DSW. It is expected this "first phase" capability will be commissioned for $200,000,000 and will use an existing drift(s) at U1a, though development of a baseline cost and schedule will be conducted in FY 2014. The program of work being conducted at this facility over the next 10 years will inform additional phases of capability upgrades that may require significant new construction at NNSS.

FY 2016-FY 2019 Key Milestones

- Implement advanced underground radiographic capability.
- Deploy and qualify first phase diagnostic capability at U1a, enabling improved measurements for subcritical experiments.
- Evaluate proposed options for enhanced radiographic diagnostics at U1a.

Advanced Radiography

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Advanced Radiography		
• Continue development and implementation of advanced diagnostic and radiographic technologies supporting modernized surety and pit reuse options for LEPs and the Predictive Capability Framework (PCF) through the National Boost Initiative (NBI). This includes development of a baseline cost and schedule for the first phase of U1a diagnostic capabilities for subcritical experiments. • Continue system improvements to the Z machine to enable a broader range of dynamic materials experiments and radiation environments. • Continue development of next-generation cameras and detectors for DARHT, pRad, Contained Firing Facility (CFF) and U1a consistent with the high-resolution, high-speed imaging systems development strategy.	• Continue development and implementation of advanced diagnostic and radiographic technologies in support of modernized surety and pit reuse options for LEPs and the PCF through the NBI. • Replace the aging DARHT camera system on its scheduled maintenance cycle. • Pursue CD-1 for an enhanced NNSS diagnostic capability. • Continue development of radiographic detectors for the first phase of deployment in U1a within the FYNSP. • Continue development of radiographic sources and detectors for additional phases of deployment in U1a beyond the FYNSP. • Commission the Dynamic Compression at the Advanced Photon Source.	• Development of an enhanced radiographic capability at U1a at NNSS that includes radiographic sources and detectors to diagnose subcritical experiments. In FY 2015, efforts will be focused on selecting the technical approach, which includes completing the preliminary design and transitioning to a final design for an enhanced NNSS diagnostic capability. Implementation of the diagnostic capability at NNSS will occur during the FYNSP.

Science Campaign
Secondary Assessment Technologies

Description

Secondary Assessment Technologies provides capabilities that increase confidence in the assessment of stockpile secondaries, enabling a broad range of LEPs and resolution of SFIs. A principle focus of Secondary Assessment Technologies is the quantification of full system performance margins and their associated uncertainties. For stockpile systems, this assessment enables: (1) the acceptance of existing secondaries and other nuclear explosive package components for reuse in future LEP options; and (2) the development of the qualification methodology for physics performance of remanufactured canned subassembly components. Another focus is development of predictive capabilities for quantifying weapon outputs and interaction with the environment for stockpile systems and non-stockpile systems relevant to national security. Secondary Assessment Technologies has strong programmatic coupling with other subprograms within Science Campaigns and the High Energy Density (HED) facilities supported by both the Science and Inertial Confinement Fusion (ICF) Campaigns, including the National Ignition Facility (NIF), Omega Laser Facility at the University of Rochester, and the Z Machine at Sandia National Laboratories (SNL), and significant coupling to advanced computing platforms supported by the ASC Program.

Three major deliverables are expected over the next five years. The completion of significant efforts in "energy balance" is a near term focus of direct relevance to all LEPs. Second, Secondary Assessment Technologies is delivering a new FY 2016 Secondary Reuse and Remanufacture level 1 milestone as a major advance in predictive capabilities that impact decisions for the future LEP options. Third, development of improved predictive capabilities for secondary performance (level 1 milestone in FY 2018), especially those that are dependent on advanced experimental platforms being developed in conjunction with the ICF program.

FY 2016-FY 2019 Key Milestones

- Complete the "Secondary Reuse" Predictive Capability Framework (PCF) pegpost for FY 2016, delivering design options and enabling capabilities to assess reuse or remanufacture of components.
- Execute the "Secondary Performance" PCF pegpost, complete by FY 2019.
- Continue to execute program plans associated with secondary reuse consistent with the LEP schedule.
- Complete HED calibration capability implementation at SSRL.
- Deliver HED results to validate physics-based models for key secondary-relevant issues.
- Develop strategic plan and execute program plan to deliver full system output modeling capabilities.
- Continue to recruit, develop, and retain stockpile stewards, maintaining the technical superiority in the nation's nuclear security interest.
- Execute program plans associated with secondary reuse consistent with the LEP schedule.
- Execute program plan to deliver full system output modeling capabilities that includes experimental platform development.
- Develop and execute plans for 2019 Secondary Performance Pegpost, delivering an advanced predictive capability for secondary performance in nominal and off nominal conditions.
- Develop physics-based models for key secondary-relevant issues that include SFI's, LEPS and the Annual Assessment Report; and validate through HED and other experimental efforts and platform development to obtain necessary experimental data.
- Complete the transition to SSRL from Brookhaven National Laboratory for HED diagnostic calibration facility.

Secondary Assessment Technologies

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Secondary Assessment Technologies		
• Continue to execute the strategy developed in FY 2012 to complete the "Energy Balance" predictive capability deliverable. • Implement the program plans associated with secondary reuse consistent with the LEP schedule. • Conduct material properties (equation-of-state, opacity, and cross section) measurements at HED facilities; analyze results and compare against theoretical models; deliver assessment of impact of key material properties on performance. • Develop modern capabilities and apply them to a set of devices to calculate outputs in support of assessing integrated device performance. • Develop HED platforms for secondary assessment applications. • In conjunction with the Defense Threat Reduction Agency, update output calculations in the Bluebook. • Continue HED calibration capability implementation at SSRL. • Deliver semi-annual update of Secondary Assessment Strategy. • Deliver Implementation plan for 2016 "Secondary LEP" PCF pegpost.	• Complete delivery of "Energy Balance" predictive capabilities. • Execute program plan for achieving the "Secondary LEP" and "Secondary Performance" PCF peg-posts in FY 2016 and FY 2019 respectively. • Develop prioritized HED platforms and execute stockpile stewardship-relevant HED experiments on NIF, Omega, and Z. • Deliver initial validation data from NIF on key secondary performance models of relevance to the FY 2019 Secondary Performance milestone. • Implement the capability-based radiation effects science mission into the PCF. • Enable transition of HED calibration efforts onto SSRL.	• Support transition of HED calibration capabilities for HED experimental diagnostics to SSRL. • Platform development on HED facilities in support of enabling capabilities for key stockpile and reuse issues. • Perform experiments in support of secondary reuse options.

Science Campaign Performance Measures

In accordance with the GPRA Modernization Act of 2010, the Department sets targets for, and tracks progress toward, achieving performance goals for each program. For more information, refer to the Department's FY 2013 Annual Performance Report.

	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Experimentally Validated Physics Models - Cumulative percentage of progress in delivering an experimentally validated physics-based capability to enable assessment of weapon performance with quantified uncertainties, replacing key empirical parameters in the nuclear explosive package.							
Target	72 % of progress	76 % of progress	80 % of progress	84 % of progress	88 % of progress	92 % of progress	96 % of progress
Result	**Met** - 72						
Endpoint Target	By the end of FY 2020, use modern physics models in assessment calculations to replace the major empirical parameters affecting weapon performance. This activity is performed in collaboration with the ICF Campaign.						

Science Campaign
Capital Summary

(Dollars in Thousands)

	Total	Prior Years	FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Current	FY 2015 vs FY 2014
Capital Operating Expenses Summary (including (Major Items of Equipment (MIE)							
Capital Equipment >$500K (including MIE)	43,861	27,019	3,071	2,951	2,951	2,394	-557
Total, Capital Operating Expenses	**43,861**	**27,019**	**3,071**	**2,951**	**2,951**	**2,394**	**-557**
Capital Equipment > $500K (including MIE)							
Total Non-MIE Capital Equipment (>$500K)	38,747	24,467	1,909	1,951	1,951	1,994	+43
TA-53 pRad, LANL	5,114	2,552	1,162	1,000	1,000	400	-600
Total, Capital Equipment (including MIE)	**43,861**	**27,019**	**3,071**	**2,951**	**2,951**	**2,394**	**-557**
Total, Capital Summary	**43,861**	**27,019**	**3,071**	**2,951**	**2,951**	**2,394**	**-557**

Outyears for Science Campaign

(Dollars in Thousands)

	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Capital Operating Expenses Summary (including (Major Items of Equipment (MIE)				
Capital Equipment >$500K (including MIE)	2,038	2,083	2,129	2,176
Total, Capital Operating Expenses	**2,038**	**2,083**	**2,129**	**2,176**
Capital Equipment > $500K (including MIE)				
Total Non-MIE Capital Equipment (>$500K)	2,038	2,083	2,129	2,176
TA-53 pRad, LANL	0	0	0	0
Total, Capital Equipment (including MIE)	**2,038**	**2,083**	**2,129**	**2,176**
Total, Capital Summary	**2,038**	**2,083**	**2,129**	**2,176**

Engineering Campaign

Overview

The Engineering Campaign creates and matures advanced tools and capabilities necessary to maintain a safe, secure, and effective nuclear weapons stockpile and enhance nuclear weapon security. Primary responsibilities of this campaign include:

- Maturing technologies necessary for maintaining the current stockpile; maturing technologies for insertion into upcoming Life Extension Programs (LEPs); and adapting advanced technologies for follow-on use.
- Providing the fundamental sustained research, development, and engineering basis for stockpile certification and assessments throughout the entire lifecycle of each weapon.
- Assessing and improving fielded nuclear and non-nuclear components without further supercritical testing.
- Increasing the National Nuclear Security Administration's (NNSA) ability to predict the response of weapon components and subsystems to aging and to abnormal and hostile as well as normal environments.
- Further advancing components and materials testing to minimize or altogether avoid destructive testing while ensuring the same high-level of weapon reliability and certification.

The Engineering Campaign directly supports two key missions discussed in the 2010 *Nuclear Posture Review Report:* strengthening the science, technology, and engineering (ST&E) base by maturing advanced technologies to improve weapon surety; qualifying weapon components and certifying weapons without subcritical testing; and providing annual stockpile assessments through weapons surveillance.

The Engineering Campaign funds four subprograms and supports initial application of the first- user LEP and provides for adaptation to subsequent LEPs, as well as for alterations (Alts) and modifications (Mods) to the enduring stockpile. A first user LEP refers to a technology or component that was developed or is being developed for multi-tail use. The first LEP to use the technology will then take on the costs e.g. the B-61. In the Engineering Campaign, the four subprograms – Enhanced Surety, Weapons Systems Engineering Assessment Technology, Nuclear Survivability, and Enhanced Surveillance – contribute directly to the NNSA Strategic Plan Goal to "strengthen the science, technology, and engineering base." Several other initiatives within the current NNSA Strategic Plan also rely on the Engineering Campaign subprograms, including:

- Deploying a formal process to mature improved safety and security technologies.
- Demonstrating a model-based qualification of silicon electronics for weapon use in hostile environments.
- Completing the transformation of weapons stockpile surveillance to enable detection of initial design and production defects for life-extended weapons, materials aging defects and predictive performance trends for the enduring stockpile.
- Demonstrating maturity of compound semiconductor electronics to sustain the stockpile.

The Department's Engineering Campaign FY 2015 Request for $136,005,000 is a decrease of $13,906,000 (-9%) from the FY 2014 enacted level of $149,911,000. Some subprograms reflect slight decreases. These include activities for technology maturation for the creation, evolution, and enablement of stockpile surety enhancement options to support a multi-system stockpile and current and future insertion requirements (including the B61-12 LEP); as well as the expansion of tools for nuclear and nonnuclear components in hostile environments. These reflect delays in portions of the "3+2" strategy.

The FY 2015 request also shows a substantial decrease in the Enhanced Surveillance subprogram which reflects NNSA's decision to delay the W78/88-1 LEP and NNSA's desire to reprioritize basic lifetime assessments, aging and predictive modeling, and non-nuclear component material evaluation. The current funding level will maintain the base programs for validation-related testing for future refurbishments, modernization and assessment of the impacts of weapon materials' and components' aging as well as advanced diagnostics to surveil the legacy and future nuclear weapons stockpile. By reprioritizing lifetime assessment and predictive modeling activities and rebaselining the component material evaluations, the funding level in the request will be sufficient to meet essential enhanced surveillance requirements with manageable risk.

Highlights of the FY 2015 Budget Request
- Shift of priority emphasis to the immediate needs of the Directed Stockpile Work Program.
- Transfer highest priority device to Directed Stockpile Work program.
- Release validation data on required weapon systems internal and external intrinsic radiation environments.
- Complete radiation effects environmental testing for the B61-12.
- Deliver cavity System Generated Electro-Magnetic Particle (SGEMP) validation data to probe peak-pressure response for a 3D test cavity relevant to future LEP studies.

FY 2013 Accomplishments

Enhanced Surety
- Continued to develop Joint Integrated Lifecycle Surety (JILS), a formal process to evaluate safety and security technologies in various venues.
- Matured enabling technologies for multi-venue ISS applications to TRL-3+ (key elements demonstrated analytically or experimentally).
- Demonstrated the highest priority device to TRL-4 (key elements demonstrated in laboratory environment).
- Conducted material compatibility testing for high-priority MPS concepts, advancing the maturity of these concepts to TRL-5 (key elements demonstrated in relevant environments).

Weapons System Engineering Assessment Technology (WSEAT):
- Conducted aging experiments on PBX-9502 to evaluate the level of effect on compressive stress behavior; preliminary assessments of behavioral trending as a function of aging temperature were performed.
- Measured the spatial distribution and temporal evolution of electrode temperatures; a critical parameter that predictive codes need to have in order to simulate arc operation.
- Continued development of reaction kinetics models for PBX 9502.

Nuclear Survivability:
- Evaluated several modeling techniques toward hostile environment assessment methodology modernization with ASC codes.
- Continued supporting code development in order to get capability needed for nuclear survivability analysis.
- Performed box internal electromagnetic pulse (IEMP) simulation fidelity experiments at Saturn in support of the W88 alt 370.
- Provided validation data for III-V device and circuit models and physics discovery data for construction of an atomistic neutron-damaged device model.

Enhanced Surveillance:
- Improved and updated W76 and W78 primary lifetime estimates.
- Completed initial aging studies and developed early lifetime estimates for materials identified for reuse in the B61 LEP.
- Refined materials aging models and produced updated lifetime estimates for W80, B83, and W87 NEP components.
- Developed and tested improved lifetime models and predictive capabilities for solders, thin films for neutron tubes, and firing sets.

Major Outyear Priorities and Assumptions
Outyear funding levels for the Engineering Campaign total $574,318,000 for FY 2016 through FY 2019 and reflect programmatic requirements of the nuclear weapons stockpile as well as specific experiments and tests and maturation of components that support the B61 LEP and other possible future LEPs. The Engineering Campaign priorities reflect continued efforts to assess and improve the safety, security, reliability, and performance of the nuclear weapons stockpile.

This involves:
- continuing to mature the Joint Integrated Lifecycle Surety assessment tool while using the existing baseline data to evaluate safety and security improvement options and the associated enabling technologies;
- developing and maturing improved and viable technologies for both near and long terms insertion options to improve nuclear weapon safety, security, and use control;

- providing scientific understanding, computational, and experimental capability to develop and validate computational models and qualify weapon systems in normal and abnormal environments;
- providing the tools and technologies needed to design and qualify components and subsystems to meet requirements for hostile environments; and
- continuing to develop and maturing select predictive aging models and lifetime assessments.

Engineering Campaign
Funding

(Dollars in Thousands)

	FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Request	FY 2015 vs FY 2014 Enacted
Engineering Campaign					
Enhanced Surety	40,080	51,771	51,771	52,003	+232
Weapon Systems Engineering Assessment Technology	16,036	23,727	23,727	20,832	-2,895
Nuclar Survivability	16,484	19,504	19,504	25,371	+5,867
Enhanced Surveillance	51,814	54,909	54,909	37,799	-17,110
Total, Engineering Campaign	**124,414**	**149,911**	**149,911**	**136,005**	**-13,906**

Outyears for Engineering Campaign

(Dollars in Thousands)

	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Engineering Campaign				
Enhanced Surety	44,400	38,358	43,885	44,891
Weapon Systems Engineering Assessment Technology	19,262	18,981	21,349	23,650
Nuclar Survivability	26,689	25,597	27,935	30,340
Enhanced Surveillance	47,800	50,639	54,498	56,044
Total, Engineering Campaign	**138,151**	**133,575**	**147,667**	**154,925**

Engineering Campaign
Explanation of Major Changes
(Dollars in Thousands)

	FY 2015 vs FY 2014 Enacted
Engineering Campaign	
Enhanced Surety: The increase will support continued evaluation of stockpile safety, security, and use control improvement options, using the Joint Integrated Lifecycle Surety baseline data and assessment tool suite, and to continue the maturation of enabling technologies for Air Force and Navy ballistic missile warheads.	**+232**
Weapon Systems Engineering Assessment Technology: The decrease reflects a reduction of validation-related testing required for future refurbishments due to the delay of the W78/88-1 refurbishment.	**-2,895**
Nuclear Survivability: The increase addresses B61-12 nuclear survivability design analysis, analytical capability with two new intrinsic radiation simulation chambers, and accelerated determinations for non-nuclear component selections to be used in future LEPs.	**+5,867**
Enhanced Surveillance: This decrease reflects a reduction of advanced diagnostic development tools in support of the legacy stockpile and LEPs, and a reprioritization of basic lifetime assessment, aging and predictive modeling activities associated with the Nuclear Explosive Package (NEP) and non-nuclear components and materials.	**-17,110**
Total, Engineering Campaign	**-13,906**

Engineering Campaign
Enhanced Surety

Description

The Enhanced Surety subprogram supports President Obama's vision[a] that "*We must ensure that terrorists never acquire a nuclear weapon. This is the most immediate and extreme threat to global security.*" Enhanced Surety is dedicated to simultaneously preventing unauthorized use and enabling authorized use of a U.S. nuclear weapon while maintaining maximum safety. Enhanced Surety creates, develops, and matures advanced safety, security, and use-control technologies, to minimize the probability of an accidental nuclear explosion and, in the unlikely event that unauthorized access is gained, reduce the risk of an unauthorized nuclear yield to the lowest possible level.

Enhanced Surety seeks advances in leading-edge technology in the foregoing areas, within two time-frames of approximately equal significance:

- Maturing near-term surety concepts and technologies to offer the most effective surety solutions achievable within the time-lines of known LEPs or other improvements in weapon functionality.
- Continuously creating and evolving highly advanced surety technologies, independent of specific weapon types or specific insertion opportunities. In light of the long lead-times such quantum-jump technologies generally entail, this proactive approach maximizes the probability that, by the time a future insertion opportunity emerges, major surety enhancements will be ready to meet it.

Enhanced Surety uses the Joint Integrated Lifecycle Surety (JILS) surety risk assessment capability to identify the most cost-effective surety technologies, allowing program and weapon system managers to make better-informed implementation decisions on stockpile surety improvement options.

Enhanced Surety projects include:

(1) Advanced Safety – Minimizes the probability of accidental nuclear yield or dispersion of fissile material. Develops improved control over warhead initiation including improved stronglinks, weaklinks, firing systems, and high explosive initiation systems, in order to provide greater nuclear weapon safety.

(2) Advanced Use Control– Develops options, internal and/or external to the warhead, to minimize the potential for deliberate unauthorized use (DUU) of a U.S. nuclear weapon.

(3) Integrated Surety Solutions (ISS)– Develops and demonstrates both system concepts and associated enabling technologies that could integrate weapon capabilities with physical security in order to identify cost-effective stockpile surety enhancements.

FY 2016-FY 2019 Key Milestones

- Continue to apply the JILS tool to DOE and DoD venues.
- Mature the Multi-Point safety (MPS) option.
- Complete the transition of the advanced stronglink from the Enhanced Surety subprogram to DSW.
- Demonstrate the highest priority device by testing and evaluation and mature its technology through TRL-5
- Test, evaluate, and further mature technologies for multi-venue ISS implementation for Air Force systems.
- Improve understanding of material compatibilities

[a]President Barack Obama Speech in Prague, Czech Republic, April 5, 2009.

Enhanced Surety

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Enhanced Surety		
• Complete Equations of State (EOS) for the multi-point safety (MPS) option • Demonstrate the advanced stronglink to TRL-4+. • Develop the next generation highest priority device through TRL-2. • Mature technologies for multi-venue ISS implementation for Air Force systems to TRL-4+. • Continue to apply the Joint Integrated Lifecycle Surety (JILS) tool to additional various venues. • Complete the development of selected surety improvements for the B61 LEP.	• Continue to apply the JILS tool to DOE and DoD venues. • Perform material compatibility and parametric studies on Multi-Point Safety (MPS) options Continue maturation, testing, and evaluation of the next generation highest priority device • Test and evaluate technologies for multi-venue ISS implementation for Air Force systems.	• The increase will enable: continued enhancements to, and evaluation of, stockpile safety, security, and use-control. It will use the Joint Integrated Lifecycle Surety baseline data and assessment tool suite and continue the maturation of enabling technologies for the Integrated Surety Solutions Program in support of surety options being developed and implemented through the Integrated Surety Architectures (ISA) program.

Engineering Campaign
Weapon Systems Engineering Assessment Technology

Description
The Weapon Systems Engineering Assessment Technology (WSEAT) subprogram improves the physical understanding of weapon system and weapon component responses to environments. This includes all relevant stockpile-to-target sequence (STS) and manufacturing support service environments except nuclear and hostile electromagnetic environments which are explored in the Nuclear Survivability subprogram of the Engineering Campaign. The WSEAT subprogram supports activities from foundational discovery through highly complex experimentation and analysis, with the goal of maturing technology, methodology, and analysis tools to the point where they can be deployed for direct impact to DSW. This subprogram focuses its resources on the immediate needs of DSW and ASC customers (e.g., current Alts and Mods; stockpile assessments; and open significant finding investigations (SFIs).

Weapon Systems Engineering Assessment Technology activities include:

(1) Methodology Needs and Engineering Research – Supports engineering research and the development of advanced diagnostics to acquire physics-based engineering data. In addition, this element supports the development of a methodology that integrates experimental capability development with modeling and simulation within an engineering-focused Quantification of Margins and Uncertainties (QMU) framework to support the stockpile LEP qualification activities.

(2) Experimental Validation – Develops experimental techniques and provides high fidelity, appropriately scaled, robust experimental data to validate models for predicting weapon performance and safety with quantified margins and uncertainties. Further, it develops test methodologies and deploys diagnostics in ground-based simulations of flight environments that enable the quantification of weapon responses to realistic environments in support of complex transformation, weapon qualification testing, and surveillance.

FY 2016-FY 2019 Key Milestones
- Continue to validate test capability and instrumentation to quantify weather effect on re-entry body/re-entry vehicle (RB/RV) flight bodies using ground test facilities.
- Continue to develop a RB/RV system-scale multi-axis hybrid shaker test capability for shock and vibration testing of RB/RV and for contact fuze performance qualification margins.
- Continue to characterize Lightning Arrestor Connector (LAC) response to lightning for LAC qualification and predictive performance.
- Continue to validate capability for stress state characterization of high explosive systems for all STS environments.
- Continue to incorporate insensitive high explosive failure into material models.
- Continue development of polymer material models that incorporate failure mechanisms.
- Continue to quantify uncertainties and assess margins for a reentry system primary in normal and abnormal environments.

Weapon Systems Engineering Assessment Technology

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Weapon Systems Engineering Assessment Technology		
• Validate test capability and instrumentation to quantify weather effect on re-entry body/re-entry vehicle (RB/RV) flight bodies using ground test facilities. • Develop a RB/RV system-scale multi-axis hybrid shaker test capability for shock and vibration testing of RB/RV and for contact fuze performance qualification margins. • Characterize Lightning Arrestor Connector (LAC) response to lightning for LAC qualification and predictive performance. • Validate capability for stress state characterization of high explosive systems for all STS environments. • Incorporate insensitive high explosive failure into material models. • Begin development of polymer material models that incorporate failure mechanisms. • Quantify uncertainties and assess margins for a reentry system primary in normal environments.	• Continue to validate test capability and instrumentation to quantify weather effect on re-entry body/re-entry vehicle (RB/RV) flight bodies using ground test facilities. • Continue to develop a RB/RV system-scale multi-axis hybrid shaker test capability for shock and vibration testing of RB/RV and for contact fuze performance qualification margins. • Continue to characterize Lightning Arrestor Connector (LAC) response to lightning for LAC qualification and predictive performance. • Continue to validate capability for stress state characterization of high explosive systems for all STS environments. • Continue to incorporate insensitive high explosive failure into material models. • Continue development of polymer material models that incorporate failure mechanisms. • Continue to quantify uncertainties and assess margins for a reentry system primary in normal and abnormal environments.	• The decrease reflects a reduction in validation-related testing required for future refurbishments due to the refurbishments (W78/88-1) being delayed.

Engineering Campaign
Nuclear Survivability

Description

The modern analysis capabilities developed by the Nuclear Survivability (NS) subprogram will enable quicker and more accurate assessment of the potential impacts to warhead nuclear survivability from refurbishments; surveillance discoveries; natural aging; and the introduction of new materials, technologies, or component designs. The scope of the subprogram includes developing scientific and engineering models for understanding radiation effects; improving laboratory radiation sources and diagnostics to support code validation and hardware qualification experiments; generating experimental data to validate scientific and engineering models; understanding radiation-hardened design strategies; and evaluating candidate and evolving stockpile technologies for radiation hardness capabilities in a generalized, weapon-relevant configuration.

Nuclear Survivability activities include:

(1) Vulnerability and Hardening of Nuclear Components – Provide nuclear warhead output and environment capabilities in support of the enduring and evolving stockpile and assures the effectiveness of the methods and tools used to determine survivability.

(2) Nuclear Survivability of Nuclear Components – Develop and validate modeling and experimental nuclear survivability assessment tools for nuclear components.

(3) Radiation Effects Science for Qualification to X-Ray Effects without the use of High Fidelity Testing Capabilities – Assure that critical Stockpile-to-Target-Sequence (STS) requirements for x-ray effects can be met in the wake of the moratorium on underground testing.

(4) Radiation Effects Science Advancement for Stockpile Qualification without the use of Highly Enriched Uranium – Creates new approaches, technologies and infrastructure for qualification of microelectronics, microsystems, and other non-nuclear components to combined fast neutron and gamma effects without the use of test sources requiring highly enriched uranium (HEU).

(5) Design and Qualification Tools Transformation and Technologies for System Survivability – Assure critical STS requirements are met with adequate confidence and cost-effectiveness.

FY 2016-FY 2019 Key Milestones

- Release validation data on required weapon systems internal and external InRad environments.
- Complete delivery of validation of qualification-level device and circuit models for silicon transistor technology.
- Deliver validation data for qualification-level device and circuit models for compound semiconductor HBTs and circuits with Uncertainty Quantification.
- Scalable total ionizing dose hardening techniques and evaluation of dose-rate upset in 180-nm Silicon on Insulator transistor technologies.
- Acquire Single Event Effects data on relevant advanced technologies.
- Collect experimental model validation data for opto-electronic technologies and deliver validation data for electro-optic device response models.
- Deliver radiation induced conductivity data on dielectrics in advanced electronics in support of model development.
- Deliver validation data on Internal EMP for simplified three dimensional (3D) tests of boxed electronics.
- Complete radiation effects environmental testing for the B61-12.
- Update eRedbook with added suite of threat models relevant to the W78/88.
- Deliver cavity SGEMP validation data to probe peak-pressure response for a 3D test cavity relevant to future LEP studies.
- Evaluate impulse models for composite materials and plan experiments to fill in data gaps to deliver validation data for impulse generation models relevant to future LEP studies.

Nuclear Survivability

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Nuclear Survivability		
• Complete validation, through the Qualification Alternatives to the Sandia Pulsed Reactor (QASPR) program, of the qualification methodology for compound semiconductor Heterojunction Bipolar Transistor (HBT) technology. • Characterize and validate the second and third high-fidelity sources to investigate intrinsic radiation effects at STS conditions. • Deliver validation data for Enhanced Low Dose Rate Sensitivity (ELDRS) scientific models. • Implement robust and reliable transfer of energy-deposition data from radiation transport codes to structural and mechanical codes for thermo-mechanical shock and thermo-structural shock. • Deliver scalable hardening techniques for Total Ionizing Dose (TID) for 180-nanometer (nm) Complementary Metal–Oxide–Semiconductor technologies. • Deliver validation data for scientific models for radiation effects in electro-optical device technologies. • Demonstrate maturity of compound semiconductor electronics. • Conduct radiation effects environmental testing for the B61-12. • Deliver data to validate models for System-Generated Electro-Magnetic Pulse (SGEMP) relevant to future LEP studies. • Deliver validation data for impulse generation models relevant to future LEP studies.	• Deliver validation data for qualification-level device and circuit models for compound semiconductor HBTs and circuits with Uncertainty Quantification. • Complete delivery of validation of qualification-level device and circuit models for silicon transistor technology. • Release validation data on required weapon systems internal and external intrinsic radiation (InRad) environments. • Acquire Single Event Effects (SEE) data on relevant advanced technologies. • Deliver validation data on internal electromagnetic pulse (EMP) for simplified three dimensional (3D) tests of boxed electronics. Scalable TID hardening techniques and evaluation of dose-rate upset in 180-nm Silicon on Insulator transistor technologies. • Collect experimental model validation data for opto-electronic technologies and deliver validation data for electro-optic device response models. • Deliver radiation induced conductivity data on dielectrics in advanced electronics in support of model development. • Complete radiation effects environmental testing for the B61-12.Deliver cavity SGEMP validation data to probe peak-pressure response for a 3D test cavity relevant to future LEP studies. • Evaluate impulse models for composite materials and plan experiments to fill in data gaps to deliver validation data for impulse generation models	• The increase addresses B61-12 nuclear survivability design analysis, analytical capability with two new intrinsic radiation simulation chambers, and accelerated determinations for non-nuclear component selections to be used in future LEPs.

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
	relevant to future LEP studies. • Update electronic (e)Redbook) with added suite of threat models relevant to future LEP studies.	

Engineering Campaign
Enhanced Surveillance

Description

The Enhanced Surveillance (ES) subprogram contributes to weapon safety, performance and reliability by providing tools needed to predict or detect the precursors of age-related defects and to provide engineering and physics-based estimates of component or system lifetimes. The ES tools consist of science-based models of material, component, and subsystem aging phenomena and advanced diagnostic techniques that provide data needed to validate these models. The impacts of aging phenomena that could result in changes in weapon performance, safety, or reliability with respect to their requirements [as specified in their respective military characteristics (MCs), stockpile-to-target sequences (STSs), and interface control documents (ICDs)] are subjected to rigorous assessments by the responsible engineering and physics communities, and are reported annually. The lifetime predictions inform the annual stockpile assessment process with respect to the expected future state of each weapon system and, therefore, serve as inputs to the decision making process for scheduling weapon replacements or refurbishments.

Enhanced Surveillance activities include:

(1) Aging Analysis and Lifetime Assessments – Understand and predict aging behaviors (e.g. accelerated aging). Provide improved predictive models. Perform lifetime assessments using model. Inform stockpile decisions on Annual Assessment, Significant Finding Investigations (SFIs) and LEPs

(2) Diagnostics – Develop new cost effective capabilities tools/diagnostics and new methods.

FY 2016-FY 2019 Key Milestones

- Complete an Enhanced Surveillance stockpile aging and lifetime assessment report to support the annual assessment process and the Technical Basis for Stockpile Transformation Planning (TBSTP).
- Deploy next generation predictive capabilities for CSAs, cases, HE, detonators and non-nuclear components and materials to support assessment and certification.
- Provide updated assessment to support Phase 6.2 of the W78 LEP for sufficient longevity of materials and components.
- Refine W80 nuclear explosive package (NEP) lifetime.
- Deploy next suite of Gas Transfer System diagnostics for surveillance.
- Provide updated assessment to support certification of W88 non-nuclear LEP for sufficient longevity of materials and components.
- Complete CME evaluation activities for components in five component families.
- Refine W87 NEP lifetime.

Enhanced Surveillance

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Enhanced Surveillance		
• Complete an Enhanced Surveillance stockpile aging and lifetime assessment report to support the annual assessment process. • Develop, validate, and deploy improved predictive capabilities to assess performance and lifetime for nuclear and nonnuclear components. • LX-21 compatibility and aging baseline studies. • Modernize WETL System Tester capabilities and new diagnostic technologies for system lab testing. • Enhance the development of component material evaluation (CME) knowledge and capabilities for selected non-nuclear components with recommendations on transition to Core Surveillance as appropriate. • Characterize the aging behavior of legacy and potential replacement materials and components in coordination with decision making on LEPs and SFIs. • Test Pantex E-Gun performance with Photonic Doppler Velocimetry (PDV). • Exploration and Development. Explore and develop new technologies and future diagnostics to improve identification and understanding of aging mechanisms in the legacy stockpile; execute recommendations from the Component Evaluation Program Planning Committees (CEPPCs); and, advance these improvements for implementation into Core Surveillance.	• Complete an Enhanced Surveillance stockpile aging and lifetime assessment report to support the annual assessment process and TBSTP. • Continue demonstration of a broad science-based CME program for predictive assessment and uncertainty quantification for selected components. • Complete initial aging and compatibility assessment of newly remanufactured TATB and LLM-105. • Continue CME evaluation activities on a reduced, reprioritized set of component families.	• This decrease reflects a reduction in advanced diagnostic development in support of the legacy stockpile and LEPs and a reprioritization of basic lifetime assessments, aging and predictive modeling activities associated with the nuclear explosive package and non-nuclear Component Material Evaluation.

Engineering Campaign Performance Measures

In accordance with the GPRA Modernization Act of 2010, the Department sets targets for, and tracks progress toward, achieving performance goals for each program. For more information, refer to the Department's FY 2013 Annual Performance Report.

	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Technology Maturation Capabilities - The annual progress towards the maturation of technologies and stockpile assessment capabilities as measured by the number of deliverables in the implementation plans completed.							
Target	21 deliverables	20 deliverables	22 deliverables	17 deliverables	13 deliverables	14 deliverables	12 deliverables
Result	**Met** - 21						
Endpoint Target	Until the last nuclear weapon system in the stockpile is dismantled, NNSA will continue to mature technologies and stockpile assessment capabilities to support Directed Stockpile Work nuclear weapons refurbishment and assessment activities.						

Engineering Campaign
Capital Summary

(Dollars in Thousands)

	Total	Prior Years	FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Current	FY 2015 vs FY 2014
Capital Operating Expenses Summary (including (Major Items of Equipment (MIE)							
Capital Equipment >$500K (including MIE)	13,358	7,152	830	848	848	867	+19
Total, Capital Operating Expenses	**13,358**	**7,152**	**830**	**848**	**848**	**867**	**+19**
Capital Equipment > $500K (including MIE)							
Total Non-MIE Capital Equipment (>$500K)	13,358	7,152	830	848	848	867	+19
Total, Capital Equipment (including MIE)	**13,358**	**7,152**	**830**	**848**	**848**	**867**	**+19**
Total, Capital Summary	**13,358**	**7,152**	**830**	**848**	**848**	**867**	**+19**

Outyears for Engineering Campaign

(Dollars in Thousands)

	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Capital Operating Expenses Summary (including (Major Items of Equipment (MIE)				
Capital Equipment >$500K (including MIE)	886	905	925	945
Total, Capital Operating Expenses	**886**	**905**	**925**	**945**
Capital Equipment > $500K (including MIE)				
Total Non-MIE Capital Equipment (>$500K)	886	905	925	945
Total, Capital Equipment (including MIE)	**886**	**905**	**925**	**945**
Total, Capital Summary	**886**	**905**	**925**	**945**

Inertial Confinement Fusion Ignition and High Yield Campaign

Overview

The Inertial Confinement Fusion Ignition and High Yield (ICF) Campaign supports the U.S. Department of Energy's (DOE) national security goals by providing scientific understanding and experimental capabilities in high-energy-density (HED) physics for the validation of codes and models necessary to maintain a safe, secure, and effective nuclear weapons stockpile without underground testing. It supports stockpile assessment and certification and the Department's national security mission. Experimental validation of the models used in simulations is essential to having confidence in them. More than 99 percent of the energy from a nuclear weapon is generated in the HED state (pressures greater than 1 megabar) that occurs once primary criticality is attained. The ICF program operates and conducts experiments in facilities that can create these HED conditions. The investments in Inertial Confinement Fusion provide insights and information from experimental conditions that largely mimic those of nuclear explosions. They provide the experimental basis, in addition to archived data from the underground test program, that gives us confidence in the codes and models used to support annual assessments and certifications, plan life extension programs, and resolve Significant Findings Investigations (SFIs). ICF facilities are the only platforms on which the codes that couple transport processes with hydrodynamics models can be experimentally validated.

These insights and information are directly applicable to assessing the health of our nuclear weapons and making decisions on life extension options for future stockpile weapons. For example, the Stockpile Stewardship Program (SSP) has been developing advanced simulation capabilities to model nuclear weapons with sufficient fidelity to support certification, life-extension programs, and resolve SFIs. Science-based weapons assessments and certification require advanced experimental capabilities to validate simulations of nuclear weapon performance, understand properties of materials that will be used in the future stockpile, and strengthen the complex three-dimensional models developed to understand the boost process occurring in stockpile primaries. The ICF Campaign provides these capabilities through the development and use of advanced experimental and theoretical tools and techniques, including state-of-the-art laser and pulsed power facilities for both ignition and weapon relevant non-ignition HED research and advanced simulation codes.

The ICF program supports stockpile stewardship through two principal experimental directions. First, through non-ignition HED physics research, development of diagnostics, and experimental expertise that directly supports the stockpile. Ongoing experiments explore issues in materials science, radiation transport, and hydrodynamics providing fundamental scientific knowledge relevant to nuclear weapons and are testing codes and models that underpin stockpile confidence. Second, the ICF program's goal is to achieve substantial thermonuclear burn and, ultimately, ignition in the laboratory. The demonstration and application of ignition and thermonuclear burn is important to validate models in the most extreme conditions generated in a nuclear explosion that cannot be accessed in the laboratory in any other way, and remains a major goal for the National Nuclear Security Administration (NNSA) and the DOE.

Demonstrating ignition in the laboratory severely tests the nation's simulation and experimental capabilities. Initial ignition experiments showed differences from code predictions, revealing physics unknowns and technical complexities that require time to study and resolve. Advances in diagnostics and experimental techniques have provided improved insight into where models are diverging from experiments, and more recent experiments have demonstrated advances toward the physics regime of greatest interest to the weapons program. Experiments continue, both to guide the overall balanced technical program and because of the contributions expected to result for the physics models and codes used in stockpile stewardship. Continuing to pursue this grand challenge is important to maintaining scientific leadership and credibility while recruiting scientists and engineers who will participate in stockpile stewardship. As much of this research is open and shared, ICF program research provides an avenue for establishing the quality of relevant science through the broader scientific community, thereby directly supporting deterrence. Many of the diagnostic capabilities required to maintain underground test readiness are maintained through the ICF program.

The Department requests $512,895,000 in FY 2015 for the ICF Campaign, a $1,062,000 (0.21 percent) decrease from the FY 2014 Omnibus Appropriation level.

In the FY 2014 Congressional budget request, NIF funding was requested in Site Stewardship's Enterprise Infrastructure funding line to support a portion of the base operations and maintenance for the National Ignition Facility (NIF) at Lawrence Livermore National Laboratory (LLNL). In the FY 2014 Consolidated Appropriations Act, Congress directed that the NIF operations funding be moved into the ICF funding line to improve transparency of funding for the NIF. The FY 2015 request includes $112,000,000 moved from the proposed Site Stewardship program to ICF's Facility Operations and Target Production subprogram for NIF operations in FY 2015 and through the outyears.

The resulting FY 2015 ICF Program continues the strong emphasis on HED weapons experimental support and development of advanced capabilities while continuing a balanced effort in ignition and alternate ignition concepts. Funding for research in support of stockpile science and near-term stockpile needs resumed in FY 2013 in the Support of Other Stockpile Programs subprogram. This leverages ICF's expertise, providing additional support for the HED weapons efforts and NNSA's broader Stockpile Stewardship Program (SSP) needs as outlined in the Predictive Capability Framework (PCF).[a] In FY 2015, efforts toward ignition with the Indirect Drive, Polar Direct Drive, and Magnetically-Driven Implosions, will continue. Development of a detailed physics understanding will be used to improve the designs in concert with the development of alternative ignition concepts as described in the Path Forward document submitted to Congress in December 2012. Along with integrated experiments, focused experiments will continue to look at the behavior and physics of ignition targets to improve the confidence in the simulations and to provide feedback to resolve the outstanding physics questions. This is a discovery-driven, rather than schedule-driven, program that will provide more opportunities for comparison with simulations and feedback to resolve the outstanding physics questions. At the end of FY 2015, progress in all three concepts will be externally reviewed to assess their progress.

The FY 2015 Request maintains the level of funding at NNSA's three major HED facilities; the NIF, the Z Facility at Sandia National Laboratories (SNL), and the Omega Laser Facility at University of Rochester's Laboratory for Laser Energetics (LLE), including funding for support of experiments by external users. The three major HED facilities will be operated under their respective governance plans. Emphasis on improving operational efficiencies at all facilities will continue, with prioritization and execution of the most urgent experiments in support of the stockpile. The NIF will continue to implement operational efficiencies to improve the shot rate at the facility, based upon the Plan developed in FY 2014.

The budget supports efforts in HED weapons, ignition, and alternate ignition concepts research at NIF, Omega, and Z. The budget provides $84,750,000 for operation and utilization of the Z facility at Sandia National Laboratories (SNL). This includes $44,450,000 within the ICF Campaign and $40,300,000 within the Science Campaign.[b] The ICF budget provides $328,500,000 for the operations of the NIF and the ICF program at LLNL, and $63,500,000 for the operations of the Omega Laser Facility and the ICF program at the University of Rochester.

Highlights of the FY 2015 Budget Request

The FY 2015 ICF Campaign will build upon the accomplishments of the previous years, including: 1) providing key data that reduces uncertainty in our predictions of nuclear weapons performance; 2) obtaining data on the properties of plutonium under conditions that have not been previously reached in the laboratory on Z Facility at SNL and the NIF at LLNL; 3) fielding platforms at Omega and NIF to measure the complex hydrodynamic behavior of materials that is a potential concern for SFIs; 4) ongoing progress in understanding the issues that are limiting the demonstration of ignition at the NIF, including energy coupling to the capsule, symmetry, and mix; 5) building on the indirect drive ignition development of the "high foot" platform that has produced record performance and experiments with alternate ablator materials; 6) continued progress in the development of the direct-drive ignition alternative on Omega and NIF building on the demonstration of ignition-relevant implosion velocities and the highest neutron yields to date at Omega; and 7) building on progress demonstrated in magnetically-driven implosions by developing the capabilities to performing magnetized liner inertial fusion (MagLIF) experiments; 8) continued safe operation of NNSA's major HED facilities, NIF, Omega, and Z, in accordance with their Governance Plans, and continuing improvements in operational efficiency at the NIF through implementing plan developed in FY 2014. At the end of FY 2015, progress in all three ignition concepts will be externally reviewed to help determine the path forward for ignition.

Major Outyear Priorities and Assumptions

Outyear funding levels for the ICF Campaign total $2,052,079,000 for FY 2016 through FY 2019. The ICF Campaign provides the scientific understanding and experimental capabilities in high-energy density physics that are needed to study matter under extreme conditions and support science-based weapons assessments and certifications to fulfill our national security mission. The priority within the ICF Program is to balance efforts in HED weapons research with the ongoing investigation

[a] The Predictive Capability Framework (PCF) is described in the *FY 2014 Stockpile Stewardship and Management Plan.*
[b] Does not include Science Campaign funding for Capabilities for Nuclear Intelligence at SNL.

of ignition, including alternate ignition concepts. The FY 2015 external review of progress toward ignition will guide the ICF Program's outyear priorities. The development and use of a robust ignition platform remains a high priority, as is performing HED experiments where ignition is not required. The Programs' suite of HED facilities is well-suited to meeting the ongoing needs of the Stockpile. The demand for ICF Facility time is expected to increase, and improved operational efficiency at the NIF is expected to meet this increased demand. The outyears budget assumes the funding level for the ICF Campaign will be sufficient to provide the advanced experimental capabilities, including experimental platforms, diagnostics, theoretical tools and techniques that are needed to conduct the experiments and the verify codes needed for stockpile assessment and certification.

Inertial Confinement Fusion Ignition and High Yield Campaign
Funding

(Dollars in Thousands)

	FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Request	FY 2015 vs FY 2014 Enacted
Ignition and High Yield Campaign					
Ignition	83,798	80,245	80,245	77,994	-2,251
Support of Other Stockpile Programs	15,503	15,001	15,001	23,598	+8,597
Diagnostics, Cryogenics and Experimental Support	82,263	59,897	59,897	61,297	+1,400
Pulsed Power Inertial Confinement Fusion	5,468	5,024	5,024	5,024	0
Joint Program in High Energy Density Laboratory Plasmas	7,552	8,198	8,198	9,100	+902
Facility Operations and Target Production	262,092	345,592	345,592	335,882	-9,710
Fusion Ignition and High Yield	**456,676**	**513,957**	**513,957**	**512,895**	**-1,062**

Outyears for Inertial Confinement Fusion Ignition and High Yield Campaign

(Dollars in Thousands)

	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Inertial Confinement Fusion Ignition and High Yield Campaign				
Ignition	77,994	77,538	78,252	77,999
Support of Other Stockpile Programs	26,000	25,795	27,147	27,047
Diagnostics, Cryogenics and Experimental Support	61,297	60,816	62,201	61,981
Pulsed Power Inertial Confinement Fusion	5,524	5,479	5,733	5,706
Joint Program in High Energy Density Laboratory Plasmas	9,600	9,530	9,887	9,849
Facility Operations and Target Production	337,185	330,378	329,000	330,141
Total, Inertial Confinement Fusion Ignition and High Yield Campaign	**517,600**	**509,536**	**512,220**	**512,723**

Inertial Confinement Fusion Ignition and High Yield Campaign
Explanation of Major Changes
(Dollars in Thousands)

	FY 2015 vs FY 2014 Enacted
Inertial Confinement Fusion Ignition and High Yield Campaign	
Ignition: Reduction in ignition effort consistent with increased emphasis on priority HED weapons physics experiments supporting near-term stockpile needs.	**-2,251**
Support of Other Stockpile Programs: Increase consistent with emphasis on support of weapons physics HED research to answer near-term stockpile needs.	**+8,597**
Diagnostics, Cryogenics and Experimental Support: Increase in funding for development and testing of advanced diagnostics needed for both ignition and non-ignition experiments.	**+1,400**
Pulsed Power Inertial Confinement Fusion: Continuation of the level of effort to advance the science of magnetically-driven implosions.	**0**
Joint Program in High Energy Density Laboratory Plasmas: Funding supports basic science research grants at an increased level to strengthen academic participation in HED physics.	**+902**
Facility Operations and Target Production: Shifts funding from support of facility operations to direct experimental and diagnostics support for weapons physics research, while maintaining similar funding at HED Facilities.	**-9,710**
Total, Inertial Confinement Fusion Ignition and High Yield Campaign	**-1,062**

Inertial Confinement Fusion Ignition and High Yield Campaign
Ignition

Description

The demonstration of thermonuclear ignition in the laboratory and its development as a platform provides the scientific and technical understanding to address key weapons issues and to validate the codes needed to assess and certify the stockpile in a regime not accessible in any other way in the laboratory. The demonstration of ignition is a major goal for the NNSA and DOE. The Ignition subprogram supports research activities that optimize prospects for achieving ICF ignition on the NIF and the development and applications of robust ignition, advanced ignition, and burning plasma platforms once ignition is achieved. Experiments on NNSA's HED facilities are supported by detailed theoretical designs and simulations (in 2- and 3-dimensions) of the performance of ignition targets. Ignition target design is closely coupled with the Advanced Simulation and Computing (ASC) and the Science Campaigns. The near-term emphasis is on those activities required to develop a detailed physics understanding to improve ignition designs and to demonstrate ignition on the NIF. In the longer-term, this program will develop advanced ignition concepts that may provide advantages over the current indirect-drive ignition platform, such as higher yield and/or gain. Achieving ignition and understanding any limitations to the simulation tools are essential parts of meeting DOE's security goals. The demonstration and use of ignition will provide important information to support assessment and certification of the stockpile and will help answer key stockpile questions within the PCF. The Campaign develops the advanced experimental capabilities that create and study matter under extreme conditions that approach the high-energy densities found in nuclear explosions. It provides access to ignition conditions that are otherwise unavailable, allowing understanding and validation of an important part of the evolution of a nuclear weapon explosion and provides critical information to validate codes. The Science Campaigns, Directed Stockpile Work (DSW), and other stockpile program elements rely on the capabilities developed in this subprogram to successfully execute their programs.

FY 2016-FY 2019 Key Milestones

- Development of the first ignition platform to support SSP needs. The ignition platform must be repeatable and sufficiently robust such that the effects of minor changes in design can be clearly identified.
- Use the first ignition platform to support SSP needs, in particular critical experiments requiring burning plasmas and igniting plasmas, in support of the PCF.
- Demonstrate one or more Advanced Ignition concepts on the NIF to meet requirements of SSP physics applications of ignition.
- Develop a crossed-beam energy transfer mitigation strategy for polar drive implosions on OMEGA and NIF.

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Ignition		
• Conduct physics and integrated indirect-drive Deuterium-Tritium (DT) implosion experiments on NIF to examine experimental and computational understanding of capsule drive, symmetry, hydrodynamic instability, and mix. Investigate mitigation schemes. • In FY 2014 and FY 2015, improve understanding of hohlraum energetics, laser-plasma interactions (LPI), and drive symmetry to develop a more predictable, efficient hohlraum with symmetry control suited to ignition. • Pursue target designs with alternate ablator materials, high-density carbon and beryllium. • Conduct experiments to understand stagnated fuel properties and to quantify alpha heating. This will require new diagnostics and improved analysis techniques. • Conduct experiments on Omega and Z to support the development of ignition and its uses, including platform and diagnostic development. • Perform Polar Drive (PD) implosions on the NIF to investigate symmetry control and LPI mitigation. • Conduct integrated direct-drive cryogenic DT implosions on Omega to establish the predictive basis for NIF-equivalent hydro performance. Validate Polar Drive Ignition Concept on Omega. • Working with Science Campaign, prepare a 3-year plan of significant milestones and critical experiments needed to support the SSP.	• Continue research efforts from FY 2014 in understanding and controlling hydrodynamic instability and mix, hohlraum symmetry, and LPI. Continue research and experiments with alternate ablator designs. Conduct experiments aimed at understanding further stagnation and alpha heating. • Conduct Progress Review of all fusion approaches with respect to the program plan defined in FY 2013 and out-year plans for ICF and high yield platforms needs defined in the PCF. • Conduct an IDI experimental campaign to assess agreement between models and simulation of implosion compression and pressure. • Continue integrated cryogenic DT implosions on Omega to establish the predictive basis for NIF-equivalent hydro performance. Continue NIF PD experiments to study crossed beam energy transfer mitigation.	• The ignition subprogram budget is reduced by $2,251,000 (2.8%). This is consistent with NNSA's increased emphasis on nuclear weapon relevant high energy density physics research. Progress towards ignition continues at a slower pace consistent with "discovery-driven" science, allowing more time to develop an understanding of any limitations towards achieving ignition.

Inertial Confinement Fusion Ignition and High Yield Campaign
Support of Other Stockpile Programs

Description

High-energy-density (HED) physics/weapon relevant experiments using the ICF Campaign's suite of HED facilities are essential to assessing and certifying the stockpile and to meeting DOE's security goals. This subprogram leverages the experience of the ICF-funded researchers to support NNSA's SSP nuclear weapons-relevant HED physics needs, developing and integrating the experimental infrastructure and capabilities required to execute experiments on ICF facilities. This includes the development of laser, target, and diagnostic capabilities. The ICF's HED facilities are used to perform experiments where ignition and burn are not the focus – for example, material properties, hydrodynamics, and radiation transport. It includes platform and diagnostic development on NIF, Omega, Z and supporting facilities. The understanding gained and capabilities developed validate the codes used to certify the stockpile. The Science Campaign, DSW, and other stockpile program elements rely on the capabilities developed in this subprogram to successfully execute their programs. Ongoing experiments test codes and models that underpin stockpile confidence and provide fundamental scientific knowledge relevant to nuclear weapons, supporting stockpile assessments and certifications. The subprogram develops and uses HED/ICF experimental capabilities and personnel to resolve important stockpile questions in cooperation with other components of the Office of Research Development Test Capabilities and Evaluation.

FY 2016-FY 2019 Key Milestones

- In FY 2016, measure the effect of shell mixing on deuterium-tritium burn.
- In FY 2017, demonstrate a deuterium-tritium burn platform that meets the needs of the SSP.
- Ongoing development of platforms to measure electron-ion equilibration in the presence of burn.
- Support experiments and platform development identified in the FY 2015 Plan for HED Science on ICF Facilities.
- Continue to develop platforms for initial experiments to support validation of opacity models; demonstrate platform that can acquire high pressure materials data; and, provide data needed to support of PCF pegposts.
- By FY 2018, complete initial set of experiments identified in FY 2015 Plan for HED Science on ICF Facilities.

Support of Other Stockpile Programs

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Support of Other Stockpile Programs		
• Provide support for experiments and non-ignition HED data using NIF, Omega, Z, and other facilities to support NNSA's SSP needs. • Develop the experimental and analytical capability to acquire high-pressure material data and develop platforms to validate models of secondary performance and to validate opacity models. • Develop a predictive capability for complex hydrodynamics and to determine aspects of a predictive mix model. • Participate in community workshop with Science Campaign to develop plan for HED Science supporting Stockpile Stewardship and Management Plan (SSMP), based on workshop. • Provide platform and diagnostic capabilities for validating the impact of surety technologies in the future stockpile.	• Provide support for experiments, acquire high-pressure material data and develop platforms to validate models of secondary performance and to validate opacity models. • Demonstrate a platform that can acquire high-pressure materials data that supports the PCF. Provide data in support of PCF pegposts, including plutonium experiments on NIF and Z. • With Science Campaign, complete plan for HED Science on the ICF Facilities to support the requirements of the SSMP based upon the workshop held in FY 2014. • Validate models relevant to thermonuclear burn. • Provide platform and diagnostic capabilities for validating the impact of surety technologies in the future stockpile.	• The Support of Other Stockpile subprogram's FY 2015 budget request is $23,598,000, an increase of $8,597,000 (57.3%). The change is consistent with NNSA's increased emphasis on weapons physics HED research to answer near-term stockpile needs.

Inertial Confinement Fusion Ignition and High Yield Campaign
Diagnostics, Cryogenics and Experimental Support

Description

Science-based weapons assessments and certification require advanced experimental capabilities that can create and study matter under extreme conditions that approach the HED environments found in a nuclear explosion. This subprogram develops the specialized technologies needed for ignition and HED experiments on ICF facilities, diagnostics, cryogenic systems, and user optics. It includes the design and engineering of a complex array of diagnostic and measurement systems, including advanced diagnostics that operate in the harsh ignition environment, and the associated information technology subsystems needed for data acquisition, storage, retrieval, visualization, and analysis. The data generated by these diagnostics provides key information required for HED physics experiments. This subprogram develops and deploys user optics to meet the needs of a broad range of experiments for national security applications and for ICF, HED, and fundamental science applications. It provides key capabilities required for experiments to study matter under extreme conditions at the HED facilities. The development of advanced diagnostics that operate in the harsh weapon-related physics environment is required to use ignition as a tool to support stockpile certification through verification of codes.

FY 2016-FY 2019 Key Milestones

- Continue efforts from FY 2015 to develop and support diagnostic capabilities, cryogenic systems, and user optics at NIF and Omega, at a pace commensurate with facility operations.
- Engineer a polar-drive target insertion cryostat for the NIF.
- Continue efforts on the NIF advanced diagnostic suite as defined in the FY 2012 Plan, including installing some diagnostics that can operate in the harsh ignition environment. Examples include a mirrored gated x-ray detector and a high resolution gamma ray diagnostic.
- Continue development, testing, and deployment of advanced diagnostics on NIF, Omega, and Z.
- In FY 2017, complete NIF advanced diagnostics suite.

Diagnostics, Cryogenics and Experimental Support

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Diagnostics, Cryogenics and Experimental Support		
• Continue efforts from FY 2013 to develop and support diagnostic capabilities, cryogenic systems, and user optics at NIF and Omega, at a pace commensurate with facility operations. • Continue development and testing of advanced diagnostics on NIF, Omega, and Z, including: prototyping a Compton gamma spectrometer and, deploying a time-resolved krypton spectrometer on Z, and installing scattered light calorimeters, an enhanced collection efficiency x-ray microscope, and a low-energy neutron spectrometer on NIF. • Commissioning of the hydrogen isotope separation unit for Omega, to provide capability to adjust the isotopic ratio of DT fuel for users.	• Continue efforts from FY 2014 to develop and support diagnostic capabilities, cryogenic systems, and user optics at NIF, at a pace commensurate with facility operations. • Continue development and testing of advanced diagnostics on NIF, Omega, and Z, including: development of the fourth-harmonic probe beam and the Compton gamma spectrometer on NIF, deploying ultrahigh resolution x-ray spectrometer on the OMEGA EP Laser, and the magnetic recoil spectrometer, gamma reaction and neutron burn history diagnostics for Z.	• The Diagnostics, Cryogenics, and Experimental Support subprogram's FY 2015 budget request is \$61,297,000, an increase of \$1,400,000 (2.3%). The change increases support for advanced diagnostics needed for both ignition and non-ignition experiments.

Inertial Confinement Fusion Ignition and High Yield Campaign
Pulsed Power Inertial Confinement Fusion

Description

The Pulsed Power Inertial Confinement Fusion subprogram funds computational target design, experiments, and experimental infrastructure to assess pulsed power to achieve thermonuclear fusion in the laboratory. This subprogram's technical effort advances the science of magnetically-driven implosions as a means to achieving higher energy densities for SSP applications and as a promising path to achieving nuclear weapons relevant physics environments and high fusion yield. A mixture of focused and integrated experiments will be conducted to address key physics uncertainties and to improve the design of the target for the Magnetized Liner Inertial Fusion (MagLIF) approach to fusion ignition. Specific activities include performing Z experiments, designing and building targets, improving simulation tools, and developing the experimental infrastructure (diagnostics and capabilities) needed to study advanced approaches to ICF. An objective is to determine the requirements for an advanced pulsed power driver that would achieve robust ignition and single-shot high fusion yield. The subprogram provides an ignition alternative that has potential to provide significantly higher yields than will be possible on the NIF and supports the assessment of pulsed power as a means to achieve thermonuclear fusion in the laboratory, including computational target design, experiments, and experimental infrastructure. It maintains the level of excellence in the technical staff at Z through challenging work that builds competencies critical to the SSP and helps avoid technological surprise.

FY 2016-FY 2019 Key Milestones

- Complete scaling study of MagLIF concept exploring sensitivity to laser energy and magnetic field strength.
- Perform optimized magnetized liner inertial fusion experiment at Z Facility.
- Assess the stagnation dynamics of MagLIF target experiments and compare with simulations.
- Evaluate fusion performance and stagnation plasma parameters at enhanced drive conditions using cryogenic fuel and compare results with simulations.
- Define requirements for a pulsed power facility that can demonstrate robust ignition and high fusion yield.

Pulsed Power Inertial Confinement Fusion

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Pulsed Power Inertial Confinement Fusion		
• Conduct integrated experiments with both magnetization and pre-heat and compare results to simulations. • Apply new and improved diagnostics and techniques to measure the implosion dynamics, magnetic fields, and fuel conditions in magnetically driven implosions. • Continue focused and integrated experiments to address key physics uncertainties on the Z Facility with Z-Beamlet and Omega EP lasers. • In preparation for the FY 2015 review, improve experimental capabilities to support ~100 kJ DT yield experiments on Z, continue to advance understanding of liner implosions and of physics of targets magnetization and fuel preheating.	• Conduct integrated fusion (MagLIF) target experiments with increased laser energy and increased magnetic fields and begin scaling study. • Perform optimized classified fusion experiments on the Z Facility. • Compare accumulated data from magnetically-driven fusion experiments on Z with 3-D radiation magnetohydrodynamic simulations. • Evaluate fusion performance and stagnation plasma parameters at enhanced drive conditions and compare results with simulations. • Review progress of all fusion approaches with respect to the program plan defined at end of FY 2013 and out-year plans for ICF and high yield platforms.	• The Pulsed Power ICF subprogram's FY 2015 budget request is $5,024,000, the same as the FY 2014 Enacted.

Inertial Confinement Fusion Ignition and High Yield Campaign
Joint Program in High Energy Density Laboratory Plasmas

Description

The Joint Program in High-Energy Density Laboratory Plasmas (HEDLP) supports DOE's mission by developing and maintaining a cadre of qualified researchers to support the SSP. It is a joint program with the DOE's Office of Science to support basic HEDP research that strengthens the Science, Technology, and Engineering base. This subprogram provides support for external users at the Omega Laser Facility through the National Laser Users' Facility (NLUF) Program and a joint solicitation with the Office of Science for HEDLP research to be performed at universities and DOE laboratories. It includes some of the HED-related Stockpile Stewardship Academic Alliances funding and other ICF-funded university programs. It funds academic programs to steward the study of laboratory HED plasma physics, maintain a cadre of qualified HED researchers and ongoing development of the next generation of scientists to provide expertise in HED today and qualified stockpile stewards for the future.

FY 2016-FY 2019 Key Milestones

- Continue activities from FY 2015 supporting research grants and cooperative agreements to fund individual investigator and research center activities.

Joint Program in High Energy Density Laboratory Plasmas

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Joint Program in High Energy Density Laboratory Plasmas		
• Continued support of High Energy Density Laboratory Plasma research through solicitations to fund individual investigator and research centers activities. Conduct solicitation for National Laser Users' Facility (NLUF) Program.	• Continue activities from FY 2014 with support for additional research grants in HED plasma physics.	• The Joint Program in High Energy Density Laboratory Plasmas subprogram's FY 2015 budget request is $9,100,000, an increase of $902,000 (11.0%). The change is consistent with strengthening academic participation in HED physics.

Inertial Confinement Fusion Ignition and High Yield Campaign
Facility Operations and Target Production

Description

The operation of NNSA's HED facilities and target production support the goals of the ICF Campaign to meet DOE's National Security needs. This subprogram funds the experimental operations of ICF facilities including NIF, Omega, and Z, to support ICF and Science Campaign's subprogram's research to meet the stockpile assessment and certification needs. In response to Congressional direction in the FY 2014 Omnibus Bill, funding for a portion of facility operations and maintenance for the NIF is moved from the Site Stewardship funding line in Enterprise Infrastructure to this subprogram in FY 2015, for base operations such as facilities management, maintenance, utilities, environment, safety, and health, emergency operations, waste management, development and maintenance of the authorization basis, and, National Environmental Policy Act activities. Over half of the ICF Campaign's budget supports experiments and operations at the ICF facilities, all of which will be operated safely and securely. This subprogram supports fabrication of the very sophisticated targets required for related weapons physics experiments, as well as operation of the Trident facility at LANL, the ICF program including external reviews, and users' meetings such as the Omega Laser Facility Users Group and the NIF Users Group. This subprogram provides infrastructure and operations support for the ICF HED facilities that allow the ICF and Science Campaigns to conduct the experiments needed to meet stockpile assessment and certification needs and broader goals of the SSP.

FY 2016-FY 2019 Key Milestones

- Safely and efficiently operate HED facilities to support the needs of the SSP.
- Conduct Triennial User Facility Review of one ICF HED Facility each year. The Z Facility at SNL will be reviewed in FY 2016.
- Continued improvements in operational efficiency at all facilities.
- Demonstrate Linear Transform Driver (LTD) module prototypes.
- Conduct annual assessment of infrastructure and mission needs and recommend following fiscal year investments across all HED facilities.

Facility Operations and Target Production

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Facility Operations and Target Production		
• Strong demand continues for ICF and SSP work on the NIF, Omega, Z, and Trident facilities in support of stockpile stewardship experiments, basic science users, and other national security users. Additional funds for Z requested in the Science Campaign budget. • Operate NIF, Omega, Z, and Trident in a safe, secure, and efficient manner in accordance with their governance plans. • Conducted annual assessment of infrastructure and mission needs and recommend following fiscal year investments across all HED facilities. • Performed target development and support for experiments on ICF facilities. • Complete 120-Day Study on Improving Efficiency at NIF and begin implementing results. Triennial review of the NIF in FY 2014.	• Continue activities from FY 2014, with similar funding level of facility operations at NIF, Omega, Z, and Trident facilities. Continued strong emphasis on highest priority experiments in support of the stockpile and on improving operational efficiencies. • Continue improvements in efficiency at NIF through implementation of results of 120-Day Study. • Complete remaining NIF-ARC beamlines. • Triennial review of the Omega Laser Facility in FY 2015.	• The Facility Operations and Target Production subprogram's FY 2015 budget request is $335,882,000, a decrease of $9,710,000 (2.8%). The change is consistent with shifting support of facility operations to direct experimental and diagnostics support for weapons physics research, while maintaining similar site funding. Expected operational efficiency improvements at the NIF.

Inertial Confinement Fusion and High Yield Campaign Performance Measures

In accordance with the GPRA Modernization Act of 2010, the Department sets targets for, and tracks progress toward, achieving performance goals for each program. For more information, refer to the Department's FY 2013 Annual Performance Report.

	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Advanced Ignition Demonstration - Cumulative percentage of progress toward the validation of a concept that meets the requirements for weapons science applications and contributes to energy science and national security.							
Target	20% of progress (cumulative)	30% of progress (cumulative)	40% of progress (cumulative)	55% of progress (cumulative)	70% of progress (cumulative)	85% of progress (cumulative)	100% of progress (cumulative)
Result	**Met** - 20						
Endpoint Target	By FY 2019, demonstrate an advanced ignition platform that meets the refined requirements of the Stockpile Stewardship Program (SSP).						
Application of Ignition - Cumulative percentage of progress in providing data required to support the predictive capability framework burn boost initiative in FY 2018.							
Target	20% of progress (cumulative)	35% of progress (cumulative)	50% of progress (cumulative)	65% of progress (cumulative)	80% of progress (cumulative)	100% of progress (cumulative)	N/A
Result	**Met** - 20						
Endpoint Target	By FY 2018, provide data required to support the Predictive Capability Framework (PCF) burn boost initiative. This activity is performed in collaboration with the Science Campaign.						
Key Extreme Experiments - Cumulative percentage of progress towards achievement of key extreme experimental condition of matter needed for predictive capability for nuclear weapons performance.							
Target	85% of progress (cumulative)	90% of progress (cumulative)	100% of progress (cumulative)	N/A	N/A	N/A	N/A
Result	**Not Met** - 68						
Endpoint Target	By the end of FY 2015, achieve temperature and pressure conditions in the laboratory relevant to weapons' primaries. This activity is performed in collaboration with the Science Campaigns within the Office of Research and Development.						

Inertial Confinement Fusion Ignition and High Yield Campaign
Capital Summary

(Dollars in Thousands)

	Total	Prior Years	FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Current	FY 2015 vs FY 2014
Capital Operating Expenses Summary (including (Major Items of Equipment (MIE)							
Capital Equipment >$500K (including MIE)	20,975	9,008	1,600	1,635	1,635	1,671	+36
Total, Capital Operating Expenses	**20,975**	**9,008**	**1,600**	**1,635**	**1,635**	**1,671**	**+36**
Capital Equipment > $500K (including MIE)							
Total Non-MIE Capital Equipment (>$500K)	20,975	9,008	1,600	1,635	1,635	1,671	+36
Total, Capital Equipment (including MIE)	**20,975**	**9,008**	**1,600**	**1,635**	**1,635**	**1,671**	**+36**
Total, Capital Summary	**20,975**	**9,008**	**1,600**	**1,635**	**1,635**	**1,671**	**+36**

Outyears for Inertial Confinement Fusion Ignition and High Yield Campaign

(Dollars in Thousands)

	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Capital Operating Expenses Summary (including (Major Items of Equipment (MIE)				
Capital Equipment >$500K (including MIE)	1,708	1,746	1,784	1,823
Total, Capital Operating Expenses	**1,708**	**1,746**	**1,784**	**1,823**
Capital Equipment > $500K (including MIE)				
Total Non-MIE Capital Equipment (>$500K)	1,708	1,746	1,784	1,823
Total, Capital Equipment (including MIE)	**1,708**	**1,746**	**1,784**	**1,823**
Total, Capital Summary	**1,708**	**1,746**	**1,784**	**1,823**

Advanced Simulation and Computing Campaign

Overview

The Advanced Simulation and Computing (ASC) Campaign provides high-end simulation capabilities to meet the requirements of weapons assessment and certification. The campaign includes weapon codes, weapons science, computing platforms, and supporting infrastructure. The ability to model the extraordinary complexity of nuclear weapons systems is essential to maintaining confidence in the performance of our aging stockpile without new underground tests. The ASC Campaign underpins the Annual Assessment of the stockpile and is an integrating element of the Predictive Capability Framework (PCF), as described in the FY 2014 Stockpile Stewardship Management Plan.

The ASC capabilities are also used to address areas of national security beyond the U.S. nuclear stockpile. Through coordination with other Government agencies and other accounts in NNSA, ASC plays important roles in supporting nonproliferation, emergency response, nuclear forensics and attribution activities.

The $40,779,000 increase between the FY 2014 enacted level and the FY 2015 Request reflects the following: 1) beginning the transition of integrated codes to work efficiently on emerging high-performance computers, 2) development in models and verification & validation, 3) next generation code development, and 4) maintaining computing resources and facilities.

There are three major drivers of the ASC program that require these budgets. Though portions are delayed, the "3+2 Strategy" requires further developed simulation and computing capabilities to enable progress in understanding energy balance, boost, and improved Equations of State for materials of interest. Annual assessments, Life Extension Program (LEPs) and Significant Finding Investigation (SFIs) require responsive modeling and simulation capabilities to better understand the impact of environmental and system conditions, including aging and the resolution of historical nuclear test anomalies. A significant strategic driver for further simulation and computing investment is the fundamental computing architecture shift going on across the industry. ASC capabilities that support the DSW mission are beginning to be impacted, as high performance computing technologies are evolving to radically different and more complex (massive, heterogeneous, parallel) architectures. Addressing this shift provides an underlying need to maintain currency with the commercial information technology sector. ASC is redirecting resources to minimize the disruptive impact of this change in High Performance Computing (HPC).

The ASC has developed a strategy for acquiring the advanced computing technologies needed to support current and future stockpile work that fully recognizes the need for the acquisition of exascale computing capabilities. The ASC Program approach to advancing HPC technologies in this request is scoped to contribute to the foundation for an exascale supercomputer capability for the nation; however it does not pursue acceleration of the delivery of that capability which in the absence of a targeted initiative is not expected before the late-2020s. The new Advanced Technology Development and Mitigation (ATDM) subprogram consolidates the investments Congress directed in FY2014, for exascale into a unified effort to tackle near-term challenges facing ASC in its support to stockpile stewardship and upon which future efforts can build.

The ASC computing capabilities function as the key integrating mechanism across the nuclear weapons program through the Integrated Design Codes (IDCs). The IDCs support design studies, maintenance analyses, the Annual Assessment Reports (AARs), Life Extension Programs (LEPs), Significant Finding Investigations (SFIs), and weapons dismantlement activities. Since the 1992 nuclear weapons testing moratorium, IDCs embody the repository of data from experiments conducted at the National Nuclear Security Administration's (NNSA) high energy density facilities and legacy underground nuclear tests, as well as the accumulated experience of the Directed Stockpile Work (DSW) Program user community.

The assessment of the nation's stockpile requires high-fidelity physical models, which are the backbone of the IDCs. The IDCs currently perform well for general mission-related activities; however, as the stockpile is life extended and aging takes the current stockpile further away from the data collected from underground tests, maintaining the nuclear weapons stockpile will require IDCs that are more predictive and use HPC resources more efficiently.

Highlights of the FY 2015 Budget Request

- Continue the development of the new subprogram, Advanced Technology Development and Mitigation, to mitigate the impact new computer architectures on current capabilities.

- Expand the predictive capability assessment suites to include additional underground tests, hydrodynamic tests, and scaled experiments.
- Complete work on defining early initial conditions for boost; begin updating the Integrated Design Codes with results.
- Each laboratory will complete and maintain full baselines for all stockpile systems and use these baselines to improve the fidelity of their annual stockpile assessments.
- Deploy Commodity Technology (CT) systems and initial Trinity system hardware for the tri-labs to address stockpile stewardship issues and to analyze code performance issues.
- Coordinate and collaborate HPC technology research, development, and engineering activities in partnership with DOE/Advanced Scientific Computing Research (ASCR) office.

Major Out-year Priorities and Assumptions

Out-year funding levels for the ASC Campaign total $2,676,257,000 for FY 2016 through FY 2019.

Out-year priorities and assumptions are governed by the mission to provide leading-edge, high-end simulation capabilities needed to meet weapons assessment and certification requirements. The major assumption is that funding for the ASC program will suffice to support the LEP schedules (as approved by the Nuclear Weapons Council) through 2030. In this time frame, ASC-enabled modeling and simulation capabilities will contribute to the B61 LEP, W78-1 LEP study, application of re-use methods and technologies, and the Inertial Confinement Fusion Campaign, leading to increased confidence in the US deterrent.

In the same period of FY 2016 through FY2019, the Advanced Technology Development and Mitigation level of investment ramps to $55M in FY2016 through FY2018. In FY2019, it increases to $65M; and is estimated to decrease in the out-years. This level of funding strives to create a solid foundation of technology to support the application of exascale computing to the national nuclear security mission. Advances of exascale computing are not accelerated at this funding level.

FY 2013 Accomplishments

- High Fidelity simulations of a W78 underground test with modern codes eliminated historic discrepancies between simulated and measured yield.
- Advanced a computationally efficient laser weld modeling technique through better simulations of bending and shear loading.
- Accomplished studies of neutron down-scattering reactions in stockpile applications which revealed underground test metric impacts may be larger than expected.
- Improved Quantification of Margins and Uncertainties (QMU) process, enabling simulation-based safety assessments with multiple abnormal thermal failure modes; applicable to the B61 LEP and other stockpile systems.
- Sequoia, the advanced architecture system, was delivered to Lawrence Livermore National Laboratory (LLNL), and transitioned to the classified environment in the beginning of 2013.

Advanced Simulation and Computing Campaign
Funding

	(Dollars in Thousands)				
	FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Request	FY 2015 vs FY 2014 Enacted
Advanced Simulation and Computing Campaign					
Integrated Codes	129,573	143,153	143,153	145,987	+2,834
Physics and Engineering Models	62,027	61,469	61,469	69,576	+8,107
Verification and Validation	53,698	48,878	48,878	56,757	+7,879
Advanced Technology Development and Mitigation	0	35,000	35,000	50,000	+15,000
Computational Systems and Software Environment	108,090	118,628	118,628	125,587	+6,959
Facility Operations and User Support	159,999	162,201	162,201	162,201	0
Total, Advanced Simulation and Computing Campaign	**513,387**	**569,329**	**569,329**	**610,108**	**+40,779**

Out-years for Advanced Simulation and Computing Campaign

	(Dollars in Thousands)			
	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Advanced Simulation and Computing Campaign				
Integrated Codes	157,137	158,838	162,275	168,792
Physics and Engineering Models	70,272	70,975	71,685	75,986
Verification and Validation	57,325	57,898	58,477	61,986
Advanced Technology Development and Mitigation	55,000	55,000	55,000	65,000
Computational Systems and Software Environment	146,237	141,167	149,659	157,548
Facility Operations and User Support	165,000	165,000	170,000	180,000
Total, Advanced Simulation and Computing Campaign	**650,971**	**648,878**	**667,096**	**709,312**

Advanced Simulation and Computing Campaign
Explanation of Major Changes
(Dollars in Thousands)

	FY 2015 vs FY 2014 Enacted
Advanced Simulation and Computing Campaign	
Integrated Codes: Transition integrated nuclear weapon design codes to work efficiently on emerging high-performance computing resources.	**+2,834**
Physics and Engineering Models: Develop models that take advantage of evolving HPC architectures and enabling the evaluation of stockpile options.	**+8,107**
Verification and Validation: Expand the common model suites to include more legacy and non-stockpile designs and evaluate new algorithms for the stockpile.	**+7,879**
Advanced Technology Development and Mitigation: Initiate integrated design code re-design projects, ramp-up of industry collaborations that address system architecture and component developments.	**+15,000**
Computational Systems and Software Environment: Acquire Trinity, continue Sierra procurement, initiate commodity technology system procurement.	**+6,959**
Facility Operations and User Support: Maintain HPC center infrastructure in support of existing and new HPC deployments.	**0**
Total, Advanced Simulation and Computing Campaign	**+40,779**

Advanced Simulation and Computing Campaign
Integrated Codes

Description

Integrated codes (IC) contain the mathematical descriptions of the physical processes of nuclear weapon systems and function. Combined with weapon-specific input data created by the nuclear weapons designers and engineers, this allows detailed simulations of nuclear weapons performance assessment, without the need for underground nuclear testing. The IC subprogram funds the critical skills needed to develop, maintain and advance the capabilities of the large-scale integrated simulation codes that are needed for the following Stockpile Stewardship Program (SSP) and Directed Stockpile Work (DSW) activities: annual assessment; LEP design, qualification, and certification; SFI resolution; and safety assessments to support transportation and dismantlement. In addition, these capabilities are necessary for a host of related requirements such as nuclear counter-terrorism efforts (e.g. nuclear forensics, foreign assessments and device disablement techniques).

FY 2016-FY 2019 Key Milestones

- September 2017 - Understand architectures of future computing platforms and make significant progress in modifying codes to run efficiently on those platforms.
- September 2018 - Provide necessary code and modeling (both 2D and 3D) support for Life Extension Programs.
- September 2019 - Develop revisions to current Integrated Codes with improved parallelization, more modularity, and better standardization that are easily scalable and adaptable.
- Continue efforts in Ongoing User Support and maintenance; Capability Development, and Skills Accession.
- Demonstrate agile integrated design code (IDC) and engineering code development by running a single simulation of relevance to DSW on at least 50% of the ATS-1 platform, Trinity, within two years of machine acceptance on a red network.
- Demonstrate agile IDC and engineering code development by running a large number of Uncertainty Quantification (UQ) simulations relevant to DSW on the ATS-2 platform, Sierra, within two years of machine acceptance on a classified network. This should represent a significant improvement over what could be accomplished on the Sequoia platform.

Integrated Codes

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Integrated Codes		
Ongoing user support and maintenance • Code builds and ports. • User training and assistance. • Regression testing and bug fixes. Capability development • Deliver capability in primary performance assessment code for late time initial conditions for boost. • Deliver improvements in nuclear performance assessment codes for boost and secondary performance. • Deliver improvements in safety codes to address multi-point safety issues. • Deliver improvements in engineering assessment codes for hostile environments and normal and abnormal environments. Skills accession • Participate in Predictive Science Academic Alliance Program (PSAAP) II process and program start. • Collaborate with PSAAP II centers on technical topics and staff recruitment.	Ongoing user support and maintenance • Code builds and ports. • User training and assistance. • Regression testing and bug fixes. Capability development • Deliver improvements in nuclear performance assessment codes for boost and secondary performance. • Deliver improvements in safety codes to address multi-point safety issues. • Deliver capability in engineering assessment codes for hostile environments. • Deliver improvements in engineering assessment codes for normal and abnormal environments. Skills accession • Maintain an ongoing mentoring program for early career staff. • Collaborate with PSAAP II centers on technical topics and staff recruitment.	• Increased resources are required to transition integrated nuclear weapon design codes and supporting codes to work efficiently on emerging high performance computing platforms.

Advanced Simulation and Computing Campaign
Physics and Engineering Models

Description

The Physics and Engineering Models (PEM) subprogram within ASC provides the models and databases used in simulations supporting the U.S. stockpile. These models and databases describe a great variety of physical and engineering processes occurring in a nuclear weapon over its full life-cycle. The capability to accurately simulate these processes is required for annual assessment; design, qualification and certification of warheads undergoing Life Extension Programs; resolution (and in some cases generation) of Significant Finding Investigations; and the development of future stockpile technologies. The PEM subprogram is closely linked to the Science Campaign, which provides the experimental data that informs development of new models used in simulation codes.

FY 2016-FY 2019 Key Milestones

- September 2016 - Calculations in support of improving boost models initiated.
- September 2016 - Verify weather loading models for reentry vibration.
- September 2016 - Phase transition kinetic model for EOS completed.
- Efforts will continue in the planning period to improve computer models for better understanding of the intricacies of the stockpile.

Physics and Engineering Models

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Physics and Engineering Models		
• Develop and demonstrate predictive capabilities for calculating the onset of primary boosting and the influence of stockpile changes on this onset (joint with Science Campaign). • Develop predictive models of microscopic thermonuclear processes in plasmas, such as ion stopping, and multiple ion interactions during stopping.	• Provide reactive flow models for HE detonation and burn that capture grain scale material heterogeneity and are computationally efficient. • Provide models for complex hydrodynamic processes that are sufficiently predictive to enable design and assessment of various stockpile options. • Provide models needed for certification on new safety options.	• The increase develops models enabling pit re-use, and certification of components.

Advanced Simulation and Computing Campaign
Verification and Validation

Description

The Verification and Validation (V&V) subprogram provides evidence that the models in the codes produce mathematically correct answers that reflect physical reality. The V&V subprogram funds the critical skills needed to apply systematic measurement, documentation, and demonstration of the ability of the models and codes to predict physical behavior. The V&V subprogram is developing and implementing Uncertainty Quantification (UQ) methodologies as part of the foundation for the Quantification of Margins and Uncertainties (QMU) process of weapons assessment and certification. The V&V subprogram also drives software engineering practices to improve the quality, robustness, reliability, and maintainability of the codes that evaluate and address the unique complexities of the stockpile. As nuclear test data is becoming less relevant with an aging stockpile, and as weapons designers with test experience leave the nuclear security enterprise, it has become increasingly important that the codes are verified and validated, so future generations of designers are confident in the use of these foundational tools.

FY 2016-FY 2019 Key Milestones

- September 2018 - Extend V&V methodologies to work on extreme scale platforms.
- During the planning period Verification and Validation efforts will continue, along with Predictive Capability Assessments to increase our abilities in dealing with complex safety and engineering issues with the nuclear weapons stockpile.

Verification and Validation

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Verification and Validation		
On-going user support and training • Provide training on the use of UQ tools. • Implement QA controls on codes and models development process. • Ensure material and nuclear databases are correctly updated and maintained to support weapon assessment activities. Verification and Validation • Complete verification and validation assessment activities in support of Level I initial conditions for Boost II. • Conduct and complete verification and validation assessment of computer code in support of Level I Energy Balance II. Predictive Capability Assessment • Establish initial benchmarking of science-based models against system specific models and identify recommendations for future investments to model improvements. • Improve the primary common model until the model has been validated against all relevant underground data sets. UQ Research • Collaborate with PSAAP II centers on technical topics related to UQ methods and improvements. • Improve UQ aggregation tool for use in assessing weapon performance. • Continue to improve UQ aggregation to include model form uncertainty. • Work to improve UQ method for assessing stockpile and life extension programs.	On-going user support and training • Provide training on the use of UQ tools. • Implement QA controls to ensure material and nuclear databases are correctly updated and maintained. Verification and Validation • Verify improvements in nuclear performance codes. • Verify improvement in safety codes to address multi-point safety issues. • Validate improvements to physics and material models. • Verify improvements in engineering codes for normal/abnormal/hostile environments. Predictive Capability Assessment • Continue to assess predictive capability as improvements to codes and models are made available, including new nuclear material data. • Improve the primary and secondary common models against remaining relevant underground datasets.	• Expands the common model suites to include more legacy and non-stockpile designs.

Advanced Simulation and Computing Campaign
Advanced Technology Development and Mitigation

Description

The Advanced Technology Development and Mitigation sub-program includes laboratory code and computer engineering and science projects that pursue long-term simulation and computing goals relevant to both exascale computing and the broad national security missions of the NNSA.

ASC capabilities that support the DSW mission are beginning to degrade, as high performance computing technologies are evolving to radically different and more complex (massive heterogeneous parallel) architectures. Integrated design code performance is slower on the latest nuclear weapons complex computer and this trend is expected to accelerate and spread unless mitigated. Therefore, the program sees three major challenges to address through investment in this sub-program including: 1) the radical shift in computer architecture, 2) maintenance of the current million+ line Integrated Design Codes that cost billions and took more than a decade to develop and validate, and 3) sustainment/adaptation of current capabilities as evolving computer technologies become increasingly disruptive to the broad national security missions of NNSA.

There are two focus areas for investment. Next Generation Code Development and Application is focused on long-term research that investigates how future code development must address new HPC challenges of massive, heterogeneous parallelism using new programming models and data management techniques developed through co-design of applications and systems. Next Generation Architecture and Software Development is focused on long-term computing technology research in computing technology to extreme, heterogeneous architectures and to mitigate its impact and advance its capabilities for ASC simulation codes.

FY 2016-FY 2019 Key Milestones

- Expand co-design at the NNSA labs.
- Initiate development of new Integrated Design Codes.
- Complete Fast Forward contracts and initiate Design Forward collaborations with industry.

Advanced Technology Development and Mitigation

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Advanced Technology Development and Mitigation		
• Proxy application development and analysis, hardware testbed deployment, interactions with external collaborators, application readiness for Sequoia • Trinity System's advanced technology development on burst buffer and power management • Next generation code projects • Interconnect R&D projects with Cray, Intel, AMD, Nvidia, and IBM	• Proxy application development and analysis, hardware testbed deployment, interactions with external collaborators, application readiness for Trinity • Trinity System's Application readiness; Sierra's burst buffer, compiler development, power management, application readiness • Next generation code project expansion • R&D projects in areas of processors, memory, interconnect, and system integration	• Expands code projects and industry collaborations.

Advanced Simulation and Computing Campaign
Computational Systems and Software Environment

Description

The Computation Systems and Software Environment (CSSE) subprogram builds the computing systems needed for weapons simulations. Since the scale of the requirements of the ASC codes drives the program's need to achieve its predictive capability goals, the ASC Campaign must continue to invest in and consequently influence the evolution of computational environments. Along with the powerful Commodity and Advanced Technology systems that the campaign fields, the supporting software infrastructure that is deployed on these platforms includes many critical components, from system software to Input/Output (I/O), storage and networking, and post-processing visualization and data analysis tools.

FY 2016-FY 2019 Key Milestones

- Acquire and deploy Commodity Technology System (CTS) 1 (September 2015-2017) and Advanced Technology System (ATS) 2 (Sierra, September 2017) systems and associated computing environment.
- Efforts will continue with the operation and deployment of current systems as well as the ASC 2017 Advanced Technology System.

Computational Systems and Software Environment (CSSE)

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Computational Systems and Software Environment		
Platform Operations • Operate Sequoia. • Operate Cielo. • Operate Tri-lab Linux Capacity Cluster (TLCC) 2 systems. Capability Development • Continue providing readiness support to ASC code teams in porting and scaling applications on to Sequoia and Cielo. • Further development of tri-lab computing environment consisting of user tools, networks, file system, archival storage, and visualization and data analysis. • Continue oversight of the jointly funded NNSA and DOE Advanced Scientific Computing Research (ASCR) FastForward and DesignForward projects.	Platform Operations • Operate Sequoia. • Decommission Cielo. • Operate TLCC2 systems. • Initiate deployment of Trinity and CTS1 clusters. Planning • Complete CD-3 phase for ASC 2017 Advanced Technology System. Capability Development • Continue providing readiness support to ASC code teams in porting and scaling applications on to Sequoia. • Further development of tri-lab computing environment consisting of user tools, networks, file system, archival storage, and visualization and data analysis. • Continue oversight of the jointly funded NNSA and DOE ASCR FastForward and DesignForward projects.	• Initial delivery of the Trinity and CTS1 systems.

Advanced Simulation and Computing Campaign
Facility Operations and User Support

Description

The Facility Operations and User Support (FOUS) subprogram provides the facilities and services required to run nuclear weapons simulations. Facility Operations includes physical space, power, and other utility infrastructure, and Local Area/Wide Area Networking for local and remote access, as well as system administration, cyber-security, and operations services for ongoing support. User Support includes computer center hotline and help-desk services, account management, web-based system documentation, system status information tools, user training, trouble-ticketing systems, common computing environment, and application analyst support.

FY 2016-FY 2019 Key Milestones

- Provide general availability and production-level services for ATS1 (Trinity, September 2016), ATS2 (Sierra, September 2018) and CTS1 (December 2015) systems.
- User Support and Capability Deployment efforts will continue through the planning period for users to achieve optimum levels of service from the investments in the ASC program.

Facility Operations and User Support

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Facility Operations and User Support		
User Support • Provide Web documentation, user manuals, technical bulletins, training, hotline and help desk support for ASC users of Cielo, Sequoia, and TLCC2 systems. • Ensure a more persistent common computing environment for users to transition seamlessly among current production systems. • Develop and initiate action plan to increase overall availability of computer cycles to end users. • Provide operational support for reliable and secure production computing environment: system administration and operations, software and hardware maintenance, licenses and contracts, archival storage, computing environment security and infrastructure, production computing services, and tri-lab system integration and support. Capability Deployment • Complete planning and exercise contingency response plans. • Support the utilization of ASC codes and computing resources at the Kansas City Plant to solve production manufacturing problems through modeling and simulation. • Decommission the remaining TLCC1 systems.	User Support • Provide Web documentation, user manuals, technical bulletins, training, hotline and help desk support for ASC users of Sequoia and TLCC2 systems. • Ensure a more persistent common computing environment for users to transition seamlessly among current production systems. • Develop and initiate action plan to increase overall availability of computer cycles to end users. • Provide operational support for reliable and secure production computing environment: system administration and operations, software and hardware maintenance, licenses and contracts, archival storage, computing environment security and infrastructure, production computing services, and tri-lab system integration and support. Capability Deployment • Complete planning and exercise contingency response plans. • Deploy newer file system and archival storage technologies to replace aging technologies. • Support the utilization of ASC codes and computing resources at the Kansas City Plant to solve production manufacturing problems through modeling and simulation.	• Additional facility infrastructure improvements to support incoming HPC systems.

Advanced Simulation and Computing Campaign Performance Measures

In accordance with the GPRA Modernization Act of 2010, the Department sets targets for, and tracks progress toward, achieving performance goals for each program. For more information, refer to the Department's FY 2013 Annual Performance Report.

	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Reduced Reliance on Calibration - The cumulative percentage reduction in the use of calibration "knobs" to successfully simulate nuclear weapons performance.							
Target	45% cumulative reduction in the use of calibration "knobs"	44% cumulative reduction in the use of calibration "knobs"	46% cumulative reduction in the use of calibration "knobs"	53% cumulative reduction in the use of calibration "knobs"	60% cumulative reduction in the use of calibration "knobs"	63% cumulative reduction in the use of calibration "knobs"	71% cumulative reduction in the use of calibration "knobs"
Result	**Not Met** - 41						
Endpoint Target	By the end of FY 2024, 100% of selected calibration knobs (non-science based models) affecting weapons performance simulation have been replaced by science-based, predictive phenomenological models. Reduced reliance on calibration will ensure the development of robust ASC simulation tools. These tools are intended to enable the understanding of the complex behaviors and effect of nuclear weapons, now and into the future, without nuclear testing. Note: Modifications of the Predictive Capability Framework (PCF) goals in FY 2013 provided better programmatic alignment with near-term Directed Stockpile Work (DSW) requirements and more realistic long-term improvements in simulation capability. To better quantify improvements within the integrated performance codes in terms of "percent reduction in the use of calibration knobs," a linkage between PCF goals and ASC milestones that can then be reflected with the performance indicator is required. The PCF goal modifications led to revised ASC L1 and L2 milestones and the re-baselining of the ASC performance indicator targets which is evident with the change to the FY 2014 target from 50% in the FY 2014 request to 44% in the FY 2015 request.						

Advanced Simulation and Computing Campaign
Capital Summary

(Dollars in Thousands)

	Total	Prior Years	FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Current	FY 2015 vs FY 2014
Capital Operating Expenses Summary (including (Major Items of Equipment (MIE)							
Capital Equipment >$500K (including MIE)	263,363	84,562	23,906	24,432	24,432	24,970	+538
Total, Capital Operating Expenses	**263,363**	**84,562**	**23,906**	**24,432**	**24,432**	**24,970**	**+538**
Capital Equipment > $500K (including MIE)							
Total Non-MIE Capital Equipment (>$500K)	263,363	84,562	23,906	24,432	24,432	24,970	+538
Total, Capital Equipment (including MIE)	**263,363**	**84,562**	**23,906**	**24,432**	**24,432**	**24,970**	**+538**
Total, Capital Summary	**263,363**	**84,562**	**23,906**	**24,432**	**24,432**	**24,970**	**+538**

Outyears for Advanced Simulation and Computing Campaign

(Dollars in Thousands)

	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Capital Operating Expenses Summary (including (Major Items of Equipment (MIE)				
Capital Equipment >$500K (including MIE)	25,519	26,080	26,654	27,240
Total, Capital Operating Expenses	**25,519**	**26,080**	**26,654**	**27,240**
Capital Equipment > $500K (including MIE)				
Total Non-MIE Capital Equipment (>$500K)	25,519	26,080	26,654	27,240
Total, Capital Equipment (including MIE)	**25,519**	**26,080**	**26,654**	**27,240**
Total, Capital Summary	**25,519**	**26,080**	**26,654**	**27,240**

Readiness Campaign

Overview

The Readiness Campaign develops and deploys manufacturing capabilities to meet current and future nuclear weapon design and production needs of the stockpile. In accomplishing its mission, the Readiness Campaign enables Defense Programs to meet Department of Defense requirements while also maintaining the capability to provide quick response to evolving national security requirements. The Readiness Campaign mission is equally focused on taking new manufacturing capabilities through first use, maintaining the base capability to support the current stockpile, and adapting new capabilities for follow-on use.

The Readiness Campaign is comprised of the Nonnuclear Readiness subprogram. The Nonnuclear Readiness subprogram supports a multi-site, multi-system manufacturing development discipline that ensures critical components are ready for first insertion, maintains the capability to support the stockpile, and reduces the potential need for future rework thus saving money. The budget for the Readiness Campaign reflects technical investment of the assigned federal program participants to ensure effective execution of Nonnuclear Readiness subprogram activities.

The Nonnuclear Readiness subprogram invests in technologies used in multiple weapon system applications with a focus on the first insertion user, which are common across the nuclear security enterprise sites, in order to conserve development resources and reduce production uncertainty. The Readiness Campaign goals for fiscal year (FY) 2015 and out-years are aligned with the National Nuclear Security Administration (NNSA) strategy, which is driven by the 2010 Nuclear Posture Review and Stockpile Stewardship and Management Plan.

The Nonnuclear Readiness subprogram coordinates investments with the Engineering and Science Campaigns to manage weapon technology and component manufacturing development activities to meet mission requirements on time. The subprogram integrates priorities across programs and campaigns for maturing technologies and providing manufacturing capabilities for planned insertion of components into Life Extension Programs (LEPs), Limited Life Components (LLC), Alterations (Alts), and Modifications (Mods). Project planning also considers Site Stewardship and Nuclear Programs acquisition schedules to coordinate selection and insertion of production capabilities to reduce facility life-cycle costs.

The Nonnuclear Readiness subprogram develops capabilities to manufacture components used for Directed Stockpile Work qualification, integration, and production. Cost savings are achieved because the process developed to manufacture components is modified to accommodate different weapon systems. The first user LEP, Alt, or Mod is the initial beneficiary, but the capability enabled by this approach applies to multiple weapon systems.

Manufacturing readiness relies on an integrated relationship between production equipment, personnel, facilities, and other factors that comprise a manufacturing system. This enduring set of activities and projects represents the fundamental capability needed to support the enduring stockpile and future LEPs which will fund their own unique set of tools, fixtures, and materials. Studies have shown that insertion of immature technologies and immature manufacturing systems increases risk and cost, and significantly decreases the probability of system or program success. Accordingly, NNSA employs a Manufacturing Readiness Level assessment process to make informed decisions. Of the nine levels, the Readiness Campaign is responsible primarily for the middle three: manufacturing capability proof-of-concept, manufacturing process development, and manufacturing system integration, after which the Directed Stockpile Work program assumes responsibility. This is important because without the vital work accomplished in the Nonnuclear Readiness subprogram the reliability of the nuclear weapons stockpile is in question.

Highlights of the FY 2015 Budget Request

Increased funding will be used to advance technologies for enduring and LEP weapon systems:

- approximately 22 technologies related to arming, fuzing, and firing primarily for B61-12 and W88 Alt 370, as well as enduring weapon systems
- approximately 5 technologies related to diagnostics for B61-12
- approximately 6 technologies related to limited life components for enduring and LEP weapon systems
- approximately 9 technologies related to nuclear explosive packages for LEP weapon systems

The Tritium Readiness subprogram moved to Stockpile Services under Directed Stockpile Work per P.L. 113-76, the Consolidated Appropriations Act, 2014.

Major Out-Year Priorities and Assumptions

Out-year funding levels for the Nonnuclear Readiness subprogram total $339,482,000 for FY 2016 through FY 2019. It peaks at $135,114,000 in FY2016 and then decreases back to prior levels by FY 2019 to accommodate the surge of activities associated with the B61-12 and W88 Alt 370.

Readiness Campaign
Funding

(Dollars in Thousands)

	FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Request	FY 2015 vs FY 2014 Enacted
Readiness Campaign					
Nonnuclear Readiness	55,407	55,407	55,407	125,909	70,502
Tritium Readiness	59,904	0	0	0	0
Total, Readiness Campaign	**115,311**	**55,407**	**55,407**	**125,909**	**+70,502**

Out-Years for Readiness Campaign

(Dollars in Thousands)

	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Readiness Campaign				
Nonnuclear Readiness	135,114	86,883	55,985	61,500
Tritium Readiness	0	0	0	0
Total, Readiness Campaign	**135,114**	**86,883**	**55,985**	**61,500**

Readiness Campaign
Explanation of Major Changes
(Dollars in Thousands)

	FY 2015 vs FY 2014 Enacted
Readiness Campaign	
Nonnuclear Readiness: The increase in funding requested accounts for FY 2013 and FY 2014 scope deferrals. The increase will support development of critical skills and capabilities required at the laboratories and plants to update or replace outdated or sunset manufacturing processes and technologies needed to manufacture various components related to arming, fuzing and firing; diagnostics; limited life components; and nuclear explosive packages.	**+70,502**
Total, Readiness Campaign	**+70, 502**

Readiness Campaign
Nonnuclear Readiness

Description

The Nonnuclear Readiness subprogram develops and deploys multi-system weapon component manufacturing capabilities needed to replace sunset technologies, upgrade existing technologies, and introduce future technologies that support the nuclear weapons stockpile. This subprogram deploys the product development and production capabilities required to support high explosive and other energetic materials production, development of nonnuclear and special materials products, and development of manufacturing processes for components that improve safe, reliable, and secure functionality for use in multiple weapon system applications that are common across the nuclear security enterprise. These capabilities include weapon command and control, assembly and disassembly of nuclear weapons, and examining performance of various weapon structural features during deployment simulations.

Nonnuclear Readiness

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Nonnuclear Readiness		
• Support Kansas City Plant (KCP) manufacturing process development for future and subsequent user insertions including welding processes, machining for multiple components, electrical/electronic fabrication processes, etc. • Continue KCP first user technology maturation for B61-12 components. • Support KCP characterization of production processes for all military characteristics and subassemblies for B61-12 (first user). • Support KCP radar component maturation for B61-12 and other users. • Support Sandia National Laboratories (SNL) neutron generator testers and production readiness including electronic neutron generator development. Complete quality engineering releases on two testers.	• Continue KCP manufacturing process development for B61-12 and subsequent user insertion including welding processes, machining for multiple components, electrical/electronic fabrication processes, etc. • Continue KCP technology maturation for B61-12 and subsequent users. • Initiate advanced manufacturing studies • Continue KCP characterization of production processes for all military characteristics and subassemblies for B61-12 and other users. • Continue KCP radar component maturation for B61-12 and other users. • Continue SNL neutron generator tester development. Complete qualification engineering release on one tester. • Begin Advanced Firing Sets component development project at KCP. • Begin Nuclear Explosive Package technology maturation work for long range standoff (LRSO) program at Y-12. • Continue process development for aluminum Gas Transfer System and advance materials for LRSO and future systems at SRNL	• The increase reflects the initiation of deferred manufacturing capability required by multiple systems. The increase will support development of critical skills and capabilities required at the laboratories and plants to update or replace outdated or sunset manufacturing processes and technologies needed to manufacture various components related to arming, fuzing and firing; diagnostics; limited life components; and nuclear explosive packages.

Readiness Campaign Performance Measures

In accordance with the GPRA (Government Performance and Results Act) Modernization Act of 2010, the Department sets targets for, and tracks progress toward, achieving performance goals for each program. For more information, refer to the Department's FY 2013 Annual Performance Report.

	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Nonnuclear Readiness - The annual progress towards the maturation of production technologies and manufacturing capabilities as measured by the number of deliverables completed.							
Target	N/A	5 deliverables	6 deliverables	5 deliverables	6 deliverables	5 deliverables	5 deliverables
Result							
Endpoint Target	Until the last nuclear weapon system in the stockpile is dismantled, NNSA will continue to mature production technologies and manufacturing capabilities to support Directed Stockpile Work, nuclear weapons refurbishment, and assessment activities. Note: The modified measure is a result of a reduction in budget authority (effectively zeroed out the Component Manufacturing Development measure) based on language contained in the FY14 enacted appropriation bill. The number of deliverables previously associated with the Component Manufacturing Development (CMD) measure has been reduced by one starting 2Q, FY 2014. This change will limit the program's ability to execute multi-system scope and increases the risk of rework and schedule slippage. However, all near-term, high-priority scope is expected to be executed for this revised measure including activities on the critical paths for the B61-12 LEP and W88 ALT 370.						

Readiness Campaign
Capital Summary

(Dollars in Thousands)

	Total	Prior Years	FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Current	FY 2015 vs FY 2014
Capital Operating Expenses Summary (including (Major Items of Equipment (MIE)							
Capital Equipment >$500K (including MIE)	20,717	20,717	0	0	0	0	0
Total, Capital Operating Expenses	**20,717**	**20,717**	**0**	**0**	**0**	**0**	**0**
Capital Equipment > $500K (including MIE)							
Total Non-MIE Capital Equipment (>$500K)	20,717	20,717	0	0	0	0	0
Total, Capital Equipment (including MIE)	**20,717**	**20,717**	**0**	**0**	**0**	**0**	**0**
Total, Capital Summary	**20,717**	**20,717**	**0**	**0**	**0**	**0**	**0**

Outyears for Readiness Campaign

(Dollars in Thousands)

	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Capital Operating Expenses Summary (including (Major Items of Equipment (MIE)				
Capital Equipment >$500K (including MIE)	0	0	0	0
Total, Capital Operating Expenses	**0**	**0**	**0**	**0**
Capital Equipment > $500K (including MIE)				
Total Non-MIE Capital Equipment (>$500K)	0	0	0	0
Total, Capital Equipment (including MIE)	**0**	**0**	**0**	**0**
Total, Capital Summary	**0**	**0**	**0**	**0**

Readiness in Technical Base and Facilities

Overview

The Readiness in Technical Base and Facilities (RTBF) program provides the underlying physical infrastructure and operational readiness for the nuclear security enterprise (NSE). It ensures that infrastructure is available and compliant with regulatory requirements for safe, secure execution of the nuclear security mission. The RTBF program supports the nuclear security missions, which include nuclear weapons, nonproliferation, and naval reactors activities at the eight NNSA sites: three national weapons laboratories, four production sites, and the Nevada National Security Site. RTBF provides resources to maintain, operate, and modernize NNSA infrastructure in a safe, secure, and cost effective manner. The RTBF program provides a defined level of readiness and capabilities through facility investments and strategy development for Special Nuclear Material (SNM) processing and inventory management. RTBF also plans, prioritizes, and constructs state-of-the-art facilities, infrastructure, and scientific tools for the enterprise within approved baseline costs and schedules. The RTBF program accomplishes this mission by providing facility operating costs for utilities, equipment, and environment, safety, and health (ES&H) activities, and provides for the maintenance of facilities to ensure they are operational and available to safely conduct programmatic efforts. These efforts also provide for the modernization of NNSA infrastructure through recapitalization, capability investments, disposition of facilities, and line-item construction projects for the enhancement of capabilities. The program is responsible for developing and implementing technology improvements and functionality, as well as planning, prioritizing, and supplying required quantities of materials by recycling, recovering, and storing nuclear and select non-nuclear program material. It also develops and executes strategies for operations and sustaining program skills through personnel training and development.

Highlights of the FY 2015 Budget Request

In FY 2015, the request mirrors the RTBF budget structure provided in the Consolidated Appropriations Act, 2014, P.L. 113-74, which added two congressional control lines: (1) Maintenance and Repair of Facilities; and (2) Recapitalization. In FY 2015, RTBF is controlled under separate subprograms: (1) Operations of Facilities; (2) Program Readiness; (3) Material Recycle and Recovery (MRR); (4) Containers; (5) Storage; (6) Maintenance and Repair of Facilities; (7) Recapitalization; and (8) Construction.

The funding request for the Capabilities Based Investments (CBI) activities has been incorporated into the Recapitalization subprogram, while funding for the Chemistry and Metallurgical Research Facility (CMR) Transition activities, Nuclear Criticality Safety Program (NCSP) and Nuclear Safety Research and Development (NSR&D) activities has been included under the Program Readiness subprogram. CMR Transition is a new effort focusing activities to lower programmatic and safety risk in existing plutonium facilities. CMR Transition contains more comprehensive activities than in previous budgets requests, incorporating some of the previously proposed metal processing work, but is mainly focused on the re-establishment of inherent capabilities now in CMR into existing plutonium facilities. To achieve the NNSA's commitment to cease programmatic operations in the CMR facility in FY 2019, capabilities such as analytical chemistry (AC) and material characterization (MC) must be re-established in the Radiological Laboratory Utility Office Building (RLUOB) and the Plutonium Facility (PF-4).

The RTBF program is implementing the Builder Sustainment Management System (BSMS) to improve focus on enterprise-wide, risk-informed investment decisions. BSMS supplements the financially based Facility Condition Index with an engineering data-based Condition Index that correlates with the risk of facility failure and aligns NNSA with the Department of Defense and other government agencies adoption of this enterprise level infrastructure management system. To improve transparency into direct and indirect costs, RTBF is also implementing the G2 Project Management System. The G2 system created by the NNSA Global Threat Reduction Initiative will improve the ability to track costs (e.g., utilities, maintenance) on a facility-by-facility basis.

Major Outyear Priorities and Assumptions

Outyear funding levels for RTBF total $10,639,088,000 for FY 2016 through FY 2019. The outyear funding continues vital investments in capability modernization and sustainment, including increases to support continued design and construction of the Uranium Processing Facility (UPF), Y-12 National Security Complex. Investments in the development and execution of strategies maintain the nation's uranium and plutonium capabilities, and manage the risk associated with transition out of Building 9212 at Y-12 and deferral of the Chemistry and Metallurgical Research Replacement Nuclear Facility (CMRR-NF) at Los Alamos National Laboratory (LANL). This request will also focus on investments to sustain and modernize high explosive (HE), lithium, and tritium manufacturing and science capabilities, all required in the sustainment of the current stockpile and necessary for future Life Extension Programs (LEPs).

Readiness in Technical Base and Facilities
Funding

(Dollars in Thousands)

	FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Request	FY 2015 vs FY 2014 Enacted
Readiness in Technical Base and Facilities					
Operating					
Operations of Facilities					
Kansas City Plant	155,506	135,834	135,834	125,000	-10,834
Lawrence Livermore National Laboratory	165,142	77,287	77,287	71,000	-6,287
Los Alamos National Laboratory	368,991	213,707	213,707	198,000	-15,707
Nevada National Security Site	112,132	100,929	100,929	89,000	-11,929
Pantex Plant	163,446	81,420	81,420	75,000	-6,420
Sandia National Laboratory	143,458	115,000	115,000	106,000	-9,000
Savannah River Site	103,925	90,236	90,236	81,000	-9,236
Y-12 National Security Complex	210,109	170,042	170,042	151,000	-19,042
Total, Operations of Facilities	**1,422,709**	**984,455**	**984,455**	**896,000**	**-88,455**
Program Readiness	109,044	67,259	67,259	136,700	+69,441
Material Recycle and Recovery	109,895	125,000	125,000	138,900	+13,900
Containers	24,524	26,000	26,000	26,000	0
Storage	35,487	35,000	35,000	40,800	+5,800
Maintenance and Repair of Facilities	0	227,591	227,591	205,000	-22,591
Recapitalization	0	180,000	180,000	209,321	+29,321
Total, Operating	**1,701,659**	**1,645,305**	**1,645,305**	**1,652,721**	**+7,416**
Construction	**387,758**	**422,120**	**424,620**	**402,800**	-19,320
Total, Readiness in Technical Base and Facilities	**2,089,417**	**2,067,425**	**2,069,925**	**2,055,521**	**-11,904**

Outyears for Readiness in Technical Base and Facilities

	(Dollars in Thousands)			
	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Readiness in Technical Base and Facilities				
Operating				
Operations of Facilities				
Kansas City Plant	129,000	133,000	120,000	124,000
Lawrence Livermore National Laboratory	73,000	75,000	77,000	79,000
Los Alamos National Laboratory	204,000	210,000	216,000	222,000
Nevada National Security Site	92,000	95,000	98,000	101,000
Pantex Plant	77,000	79,000	81,000	83,000
Sandia National Laboratory	109,000	112,000	115,000	118,000
Savannah River Site	83,000	85,000	88,000	91,000
Y-12 National Security Complex	156,000	160,000	165,000	170,000
Total, Operations of Facilities	**923,000**	**949,000**	**960,000**	**988,000**
Program Readiness	187,405	190,425	206,760	211,099
Material Recycle and Recovery	141,200	142,078	143,054	145,598
Containers	27,000	28,000	29,000	30,000
Storage	41,400	41,683	42,965	43,758
Maintenance and Repair of Facilities	211,000	218,000	224,000	231,000
Recapitalization	351,900	513,169	331,857	386,437
Total, Operating	**1,882,905**	**2,082,355**	**1,937,636**	**2,035,892**
Construction	**576,000**	**688,000**	**707,800**	**728,500**
Total, Readiness in Technical Base and Facilities	**2,458,905**	**2,770,355**	**2,645,436**	**2,764,392**

Readiness in Technical Base and Facilities
Explanation of Major Changes
(Dollars in Thousands)

	FY 2015 vs FY 2014 Enacted
Readiness in Technical Base and Facilities	
Operations of Facilities:	**-88,455**
• **Kansas City Plant**: The decrease is due to transition of operations from the Bannister Complex Facility to the Botts Road Facility.	**-10,834**
• **Lawrence Livermore National Laboratory**: The decrease is to reduce base operational costs and funds higher NNSA priorities.	**-6,287**
• **Los Alamos National Laboratory**: The decrease is to reduce base operational costs and funds higher NNSA priorities.	**-15,707**
• **Nevada National Security Site**: The decrease is to reduce base operational costs and funds higher NNSA priorities.	**-11,929**
• **Pantex Plant**: The decrease is to reduce base operational costs and funds higher NNSA priorities.	**-6,420**
• **Sandia National Laboratories**: The decrease is to reduce base operational costs and funds higher NNSA priorities.	**-9,000**
• **Savannah River Site**: The decrease is to reduce base operational costs and funds higher NNSA priorities.	**-9,236**
• **Y-12 National Security Complex**: The decrease is to reduce base operational costs and funds higher NNSA priorities.	**-19,042**
Program Readiness: Increases in Program Readiness support continued development and execution of nuclear strategies and safety initiatives, including planning studies for plutonium capability modernization at LANL; increased scope for development of new manufacturing techniques for lithium at Y-12; increased support for critical skills in tritium and long-range planning for consolidating the tritium enterprise at Savannah River Site (SRS); and safety investments to support current initiatives and research and development for improved safety criteria. The increase also reflects NCSP and NSRD activities. The Program Readiness subprogram, which also includes CMR transition activities, will also provide capability modernization of plutonium capabilities and an increase in margin of safety. The increase supports the CMR Transition in executing projects to relocate plutonium capabilities from CMR to RLUOB and initiate pre-conceptual design efforts to reuse space in PF-4 at LANL.	**+69,441**
Material Recycle and Recovery (MRR): Increases in MRR support movement of enriched uranium from Area 5 to the Highly Enriched Uranium Materials Facility (HEUMF) in preparatory support of the transition to UPF, continued development of new electro-refining technology at Y-12 as well as re-establishment of a new purified depleted uranium supply; sustainment and recapitalization of tritium processing systems at SRS; and a reduction of	**+13,900**

	FY 2015 vs FY 2014 Enacted
material-at-risk in PF-4 and CMR at LANL.	
Containers: Maintains the container program to support the nuclear weapons program and nuclear materials consolidation.	**0**
Storage: Increases in Storage support procurement and installation of a second CoLOSSIS High Resolution Computed Tomography system to meet pit surveillance requirements at Pantex and a new Storage program at LANL for the SAVY-4000 onsite container certification, surveillance, testing and procurement.	**+5,800**
Maintenance and Repair of Facilities: The decrease is due to slower pace of maintenance activities at Bannister Federal Complex at KCP and deferral of ten percent of the predictive and preventive maintenance scope at the NSE sites.	**-22,591**
Recapitalization: The increase in Recapitalization is to support the modernization of aging infrastructure and for additional safety-related recapitalization. It also supports the Capabilities Based Investments activities which support investments in Defense Programs capabilities to include: continued investments in equipment to support warhead assessment and surveillance at LLNL, completion of upgrades to x-ray equipment in the Device Assembly Facility at Nevada National Security Site (NNSS), funding for enriched uranium capabilities at Y-12, investments to revitalize areas used for weapons assembly/disassembly operations at Pantex, execution of projects at LANL to improve environmental testing capabilities in support of the B61, funding to improve power source testing capabilities at Sandia National Laboratories (SNL), and investments in gas transfer operations at SRS.	**+29,321**
Construction: Overall construction funding is decreasing due to completion of funding requests for the Radioactive Liquid Waste Treatment Facility and the final, lower funding requests for the Transuranic (TRU) Waste Facility Project and TA-55 Reinvestment Project Phase II all at LANL. At Y-12, the increase reflects implementation of planned project activities for the construction of the Uranium Processing Facility in order to meet the commitment to cease programmatic missions in Building 9212 by 2025. At LLNL, SNL, and Y-12, funding supports the design of Emergency Operations Centers. At LANL, funding will support planned scope for the TA-55 Reinvestment Project Phase III, the TA-55 Reinvestment Project Phase II, the Transuranic (TRU) Waste Facility Project, and the TRU Liquid Waste Facility. No additional funding is requested for the Low Level Waste portion of the Radioactive Liquid Waste Treatment Facility. At Pantex, funding will support the initiation of design of the High Explosives Science and Engineering (HE S&E) building.	**-19,320**
Total, Readiness in Technical Base and Facilities	**-11,904**

Readiness in Technical Base and Facilities
Operations of Facilities

Description

The Operations of Facilities subprogram supports the base operations costs at the nuclear security enterprise sites, which includes facility leases, labor, facility planning and management, utilities, general services, and emergency services. It also provides for costs associated with regulatory compliance and environment, safety, health and quality. The Operations of Facilities subprogram also funds waste management activities, including treatment, storage and waste disposition of both hazardous and radiological wastes. It provides for the daily operations, and staffing requirements, while providing activities associated with sustaining equipment, systems, facilities, or capabilities to meet design requirements and operating conditions consistent with mission requirements

Operations of Facilities

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Operations of Facilities		
Kansas City Plant – Banister Road		
• At the Kansas City Plant, funding supports remaining operations and required maintenance costs at the current Bannister Road facility. The Bannister Road facility will be operated in a "run to replacement" mode, allowing certain facility and equipment maintenance to grow, while performing limited maintenance required for continued safe operations.	• Continues to support remaining operations and required maintenance costs at the current Bannister Road facility. Also includes funds for shutdown and surveillance activities at Bannister Road to meet regulatory requirements. **FY 2016-FY 2019** • The outyears will continue to fund base operations, including facility operations, utilities, steam, gas and electric distribution, leases, program management, waste management, ES&H and industrial safety.	• Decrease is due to transition of operations from Bannister Facility Complex to Botts Road Facility.
Kansas City Responsive Infrastructure Manufacturing and Sourcing (KCRIMS)		
• Supports continued transition and operations of the new facility as laid out in the KCRIMS transformation plan.	• This activity will be completed in FY 2014 as outlined in the Strategic Objective 5 by executing Kansas City Responsive Infrastructure Manufacturing and Sourcing.	• Not applicable.
Lawrence Livermore National Laboratory		
• At the Lawrence Livermore National Laboratory, funding provides for base operational capability needed to perform plutonium, tritium and high explosives activities; environmental tests; and regulated site-wide comprehensive waste management. Funding also supports facility and infrastructure capability for weapon assessment and certification; LEP research, development and design; plutonium research and technology programs; tritium recovery/loading and target manufacturing; and high explosives synthesis, and	• Continued funding provides for base facility operations to support NSE missions. This includes providing for facility and infrastructure operations which support plutonium, tritium and high explosives activities; environmental tests; and regulated site-wide comprehensive waste management. It also funds waste management facilities and activities including treatment, and offsite disposal of TRU waste to the Waste Isolation Pilot Plant (WIPP).	• The decrease is to reduce base operational costs and fund higher NNSA priorities.

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
formulation, processing, assembly and testing.	**FY 2016-FY 2019** • The outyears will continue to fund base operations, including facility operations, utilities, steam, gas and electric distribution, leases, program management, and waste management. It also supports ES&H, which includes radiation, industrial and high explosives safety.	
Los Alamos National Laboratory		
• At the Los Alamos National Laboratory, funding provides for base facility operations in support of plutonium production, research and development; chemistry and metallurgy research; weapons engineering and tritium capability; and beryllium operations. Funding also supports solid waste risk reduction activities (including ceasing low level and low-level mixed waste (LLW/LLMW) operations at Area G, Phase A site development of the Transuranic (TRU) Waste Facility, and continued processing of stored new generation TRU waste at Area G) as the path forward to meet Consent Order milestones as issued by the New Mexico Environmental Department. It funds the Los Alamos Pueblo Project at approximately $800,000 per year.	• Continued funding provides for base facility operations in support of plutonium production, research and development; chemistry and metallurgy research; weapons engineering and tritium capability; and beryllium operations. Also, funds solid waste risk reduction activities (including ceasing low level and low-level mixed waste (LLW/LLMW) operations at Area G, Phase A site development of the Transuranic (TRU) Waste Facility, and continued processing of stored new generation TRU waste at Area G). Funds the Los Alamos Pueblo Project at approximately $800,000 per year. **FY 2016-FY 2019** • The outyears will continue to fund base operations, including facility operations, utilities, steam, gas and electric distribution, leases, program management, and waste management. It also supports ES&H, which includes radiation, industrial and high explosives safety.	• The decrease is to reduce base operational costs and fund higher NNSA priorities.
Nevada National Security Site		
• At the Nevada National Security Site, funding provides for base facility operations in support of the LEPs; Security Category I/II Special Nuclear Material (SNM) handling and staging; the Nuclear	• Continued funding provides for base facility operations in support of Security Category I/II Special Nuclear Material (SNM) handling and staging; the LEPs; the Nuclear Counterterrorism	• The decrease is to reduce base operational costs and fund higher NNSA priorities.

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Counterterrorism program; DOE's Nuclear Criticality Safety Program (NCSP); and legacy environmental cleanup commitments. Also, provides experimentation capabilities including: NCSP's Nuclear Criticality Experimental Research Center (NCERC); large scale underground sub-critical plutonium experiments; high hazard, scientific experiments with special nuclear materials (e.g., dynamic plutonium experiments), and large high explosive charge experiments and testing.	program; DOE's NCSP; and legacy environmental cleanup commitments. **FY 2016-FY 2019** • The outyears will continue to fund base operations, including facility operations, utilities, steam, gas and electric distribution, leases, program management, and waste management. It also supports ES&H, which includes radiation, industrial and high explosives safety.	
Pantex Plant		
• At the Pantex Plant, funding provides for base operation costs for weapon assembly, disassembly, and surveillance in support of the LEPs; high explosives synthesis, formulation, and machining in support of production; and Special Nuclear Material non-destructive evaluation and requalification.	• Continued funding provides for base operation costs for weapon assembly, disassembly, and surveillance in support of the LEPs; high explosives synthesis, formulation, and machining in support of production; and Special Nuclear Material non-destructive evaluation and requalification. Also funds payment in lieu of taxes. **FY 2016-FY 2019** • The outyears will continue to fund base operations, including facility operations, utilities, steam, gas and electric distribution, leases, program management, and waste management. It also supports ES&H, which includes radiation, industrial and high explosives safety.	• The decrease is to reduce base operational costs and fund higher NNSA priorities.
Sandia National Laboratories		
• At Sandia National Laboratories, funding provides for major infrastructure capabilities including environmental test facilities for various environments such as electromechanical, abnormal and normal; Microelectronics Development Laboratory; Tech Area IV	• Continued funding provides for major infrastructure capabilities including environmental test facilities for various environments such as electromechanical, abnormal and normal; Microelectronics Development Laboratory; Tech Area IV	• The decrease is to reduce base operational costs and fund higher NNSA priorities.

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Accelerators; Tech Area V Nuclear Reactor facilities; Electromagnetic Test Facilities; Materials Characterization Laboratories, and Tonopah Test Range (TTR) in Nevada.	Accelerators; Tech Area V Nuclear Reactor facilities; Electromagnetic Test Facilities; Materials Characterization Laboratories; and TTR in Nevada. **FY 2016-FY 2019** • The outyears will continue to fund base operations, including facility operations, utilities, steam, gas and electric distribution, leases, program management, and waste management. It also supports ES&H, which includes radiation, industrial and high explosives safety.	
Savannah River Site		
• At the Savannah River Site, funding provides for base operations in support of production, reclamation of gas transfer systems for limited life component exchange and LEPs; production, recycling, and recovery of tritium and deuterium gases; and surveillance of Gas Transfer Systems (GTS).	• Funding provides for base facility operations in support of production, reclamation of gas transfer systems for limited life component exchange and LEPs; loading and unloading, recycling, and recovery of tritium and deuterium gases; and surveillance of GTS. **FY 2016-FY 2019** • The outyears will continue to fund base operations, including facility operations, utilities, steam, gas and electric distribution, leases, program management, and waste management. It also supports ES&H, which includes radiation and industrial safety.	• The decrease is to reduce base operational costs and fund higher NNSA priorities.
Y-12 National Security Complex		
• At the Y-12 National Security Complex, funding provides for base operations in support of the Y-12 complex including: enriched and depleted uranium operations; lithium and other special material operations; component production and fabrication; highly enriched uranium (HEU) down-blending activities; and weapon assembly and disassembly in support of LEPs.	• Continued funding provides for base operations in support of the Y-12 complex including: enriched and depleted uranium operations; lithium and other special material operations; component production and fabrication; HEU down-blending activities; and weapon assembly and disassembly in support of LEPs. Also funds payment in lieu of taxes.	• The decrease is to reduce base operational costs and fund higher NNSA priorities.

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
	FY 2016-FY 2019 • The outyears will continue to fund base operations, including facility operations, utilities, steam, gas and electric distribution, leases, program management, and waste management. It also supports ES&H, which includes radiation and industrial safety.	

Readiness in Technical Base and Facilities
Program Readiness

Description

The Program Readiness subprogram implements a multi-year strategy to provide capabilities (cross-cutting, multi-program advanced technologies and technical infrastructure, and provides trained, qualified skilled workers) that support the needs of the nuclear security enterprise. Program Readiness supports these objectives by providing the critical worker skills needed at laboratories, plants and experiment sites; funding CMR Transition activities; provide the funding for the DOE/NNSA Nuclear Criticality Safety Program (NCSP); supporting the DOE/NNSA Nuclear Safety R&D activities; investments at SNL and NNSS.

Program Readiness will continue to modernize capabilities supporting the current and future stockpile. Scope focuses on developing and executing strategies for capability sustainment, such as studies supporting the plutonium strategy as well as risk mitigation during transition out of Y-12's Building 9212; supporting the research and development of new capabilities and planning for technology deployment; and developing and expanding critical program skills.

As part of the Program Readiness subprogram, the Chemistry and Metallurgy Research facility (CMR) Transition activities is a key component of the plutonium strategy and will re-establish analytical chemistry (AC) and materials characterization (MC) capabilities needed for the plutonium enterprise in PF-4 and RLUOB, as NNSA maintains its commitment to cease programmatic operations in the CMR facility at LANL in approximately 2019. The CMR Transition activities include developing detailed plans to re-establish CMR capabilities; equipment purchases for AC and MC, leveraging safety basis changes that allow an increase in the amount of plutonium metal in RLUOB; planning and pre-conceptual design efforts for the re-use of several rooms in PF-4 by removing old equipment and installing new equipment; and pre-conceptual design efforts for the modular acquisition concept.

Program Readiness

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Program Readiness		
• Modernize programmatic capabilities that support the current and future stockpile. Scope will develop and execute programmatic strategies, support development of new capabilities, and sustain and expand critical program skills. Specific scope includes: o Execution of the plutonium strategy to transition out of CMR and maintain plutonium support capabilities with the deferral of construction of CMRR-NF at LANL. Conduct the planning study for PF-4 space re-configuration and analysis of AC and MC capabilities. o Managing the continuity of uranium and lithium processing capabilities during the transition out of building 9212 at Y-12. Invest in R&D for new depleted uranium and lithium technology, including critical skill development, planning, and new manufacturing techniques. o Establishment and execution of a long-range implementation plan for tritium investments at SRS and an architecture for consolidating the Gas Transfer Systems (GTS)/ Tritium enterprise to enhance the tritium capability and develop critical program skills in the engineering and operator pipeline. o Support modernization of manufacturing capabilities at LLNL through planning for LEP and warhead assessment procurement programs. o Maintain critical skills at KCP through the transition of the Kansas City KCRIMS project. Develop technological expertise through	• Continues to modernize programmatic capabilities that support the current and future stockpile. Scope will develop and execute programmatic strategies, support development of new capabilities, and sustain and expand critical program skills. Specific scope includes: o Execution of the plutonium strategy to transition out of CMR and maintain the plutonium capability with the deferral of construction of CMRR-NF at LANL. Install additional equipment to optimize the use of RLUOB. Conduct the planning study for PF-4 space re-configuration and broaden the analysis of AC and MC capabilities. o Managing the continuity of uranium and lithium processing capabilities during the transition out of building 9212 at Y-12. Invest in R&D for new depleted uranium and lithium technology, including critical skill development, and increased scope for planning and development of new manufacturing techniques in lithium processing. o Establishment and execution of a long-range implementation plan for tritium investments at SRS and an architecture for consolidating the GTS/Tritium enterprise to enhance the reliability of the tritium capability, and increase support for developing critical program skills in the engineering and operator pipeline. o Support modernization of manufacturing capabilities at LLNL through planning for LEP and warhead assessment procurement	• Implementation of a more balanced approach across all eight sites to ensure capability readiness. • Increases support for planning and development of new lithium manufacturing and processing techniques at Y-12. • Continues and expands plutonium studies and planning at LANL in support of plutonium capability modernization. • Broadens support for critical skills in tritium at SRS to maintain skilled operators and engineers.

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
support of technical fellowships and weapon intern programs. o At NNSS, maintain critical skills in vital weapons engineering disciplines, including experimental support for laboratories. o Conduct planning at PX for modernizing programmatic equipment for future LEPs, and develop critical program skills in support of weapon assembly and disassembly capabilities. o At SNL, conduct R&D projects for new technologies in support of LEP and stockpile modernization. Develop critical program skills in experimental operations in radiography and research for pulsed power alternatives. • Provides funding for experimental capabilities including: the DOE Nuclear Criticality Safety Program's Nuclear Criticality Experimental Research Center (NCERC); large scale underground sub-critical plutonium experiments; high hazard, scientific experiments with special nuclear materials (e.g., dynamic plutonium experiments); and large high explosive charge experiments and testing. • Provide Nuclear Safety R&D activities to influence the technical foundations for authorization basis decision making and reaffirmation of authorization bases of defense nuclear facilities and associated operations.	programs. o Maintain critical skills at KCP through the transition to KCRIMS. Develop technological expertise through support of technical fellowships and weapon intern programs. o At NNSS, maintain critical skills in vital weapons engineering disciplines, including experimental support for laboratories. o Conduct planning at PX for modernizing programmatic equipment for future LEPs, and develop critical program skills in support of weapon assembly and disassembly capabilities. • At SNL, conduct R&D projects for new technologies in support of LEP and stockpile modernization. Develop critical program skills in experimental operations in radiography and research for pulsed power alternatives. • Provides funding for experimental capabilities including: the DOE NCSP's NCERC; large scale underground sub-critical plutonium experiments; high hazard, scientific experiments with special nuclear materials (e.g., dynamic plutonium experiments); and large high explosive charge experiments and testing. • Provide Nuclear Safety R&D activities to influence the technical foundations for authorization basis decision making and reaffirmation of authorization bases of defense nuclear facilities and associated operations. **FY 2016-FY 2019** • Out-year funding supports continued investments in strategies, personnel, and planning for modernization of Defense Programs science and manufacturing capabilities. Focus will be on the transition of uranium processing and handling during facility transition at Y-12, and the	

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
	continuity of plutonium chemistry and metallurgy during the transition out of CMR at LANL. Out-year funding also focuses on reducing the risks in tritium, lithium and high explosive (HE) capabilities, and unique technologies at SNL and NNSS in support of stockpile stewardship activities. Continued support of vital program skills across the complex will be provided. • Continue to provide funding for experimental capabilities including: the DOE NCSP's NCERC; large scale underground sub-critical plutonium experiments; high hazard, scientific experiments with special nuclear materials (e.g., dynamic plutonium experiments); and large high explosive charge experiments and testing. • Continue to provide funding for Nuclear Safety R&D activities to influence the technical foundations for authorization basis decision making and reaffirmation of authorization bases of defense nuclear facilities and associated operations.	

Readiness in Technical Base and Facilities
Material Recycle and Recovery

Description

The RTBF Material Recycle and Recovery (MRR) subprogram provides recycling and recovery of plutonium, enriched and depleted uranium, lithium and tritium from fabrication and assembly operations, limited life components, and dismantlement of weapons and components. These activities support the implementation of new as well as improved processes for fabrication and recovery operations, material stabilization, conversion, and interim storage. MRR also provides for an increased pace of activities in the CMR de-inventory effort, the Confinement Vessel Disposition project, and the PF-4 vault de-inventory in order to consolidate and disposition excess materials, free up space for program needs, and reduce nuclear safety risk and personnel radiological exposure. MRR activities for Defense Programs at Y-12 are aligned to support the W76-1 LEP production.

Material Recycle and Recovery

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Material Recycle and Recovery		
• Provides for recycling and recovery of plutonium, enriched uranium, lithium and tritium from fabrication and assembly operations, limited life components, and dismantlement of weapons and nuclear components. • Implements new or improved processes for fabrication and recovery operations, material stabilization, conversion, and in-process storage. • Recycles and purifies materials to meet specifications for safe, secure, and environmentally acceptable storage, and to meet the directive schedule for tritium reservoir refills, and to support the increased workload associated with LEP production rates, additional weapon surveillance activities, increased piece part disassemblies and increases in Campaign and sustainment work in the nuclear facilities. o At LANL, activities include accelerated material stabilization, repackaging, and excess materials management to de-inventory PF-4 vault, nuclear materials information management, the Special Recovery Line, Confinement Vessel Disposition, CMR de-inventory, and nuclear materials planning and reporting. Accelerated vault de-inventory reduces nuclear safety risks and supports current and future needs for material storage associated with Pu^{238} operations, DSW, Campaign and other defense program missions in PF-4. Vault activities include assay, storage, packaging, transportation and waste disposal, as well as alternatives for processing and storage of LANL materials at Y-12, SRS, and NNSS will also be evaluated and optimized.	• Continues to provide for recycling and recovery of plutonium, enriched uranium, lithium and tritium from fabrication and assembly operations, limited life components, and dismantlement of weapons and nuclear components. • Implements new or improved processes for fabrication and recovery operations, material stabilization, conversion, and in-process storage. • Recycles and purifies materials to meet specifications for safe, secure, and environmentally acceptable storage, and to meet the directive schedule for tritium reservoir refills, and to support the increased workload associated with LEP production rates, additional weapon surveillance activities, increased piece part disassemblies and increases in Campaign and Sustainment work in the nuclear facilities. o At LANL, activities include accelerated material stabilization, repackaging, and excess materials management to de-inventory PF-4 vault, nuclear materials information management, the Special Recovery Line, Confinement Vessel Disposition, CMR de-inventory, and nuclear materials planning and reporting. Accelerated vault de-inventory reduces nuclear safety risks and supports current and future needs for material storage associated with Pu^{238} operations, DSW, Campaign and other defense program missions in PF-4. Vault activities include assay, storage, packaging, transportation and waste disposal, as well as alternatives for processing and storage of LANL materials at Y-12, SRS, and NNSS will also be evaluated and optimized.	• LANL vault de-inventory scope increases in FY 2015 and is maintained at the FY 2015 level through FY 2018. The vault de-inventory scope begins to wind down in FY 2019. Y-12 funding supports the W76 LEP schedule, future inventory requirements, and electro-refining cells. Additional funding for SRS reduces the backlog of maintenance on gas processing systems.

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
- At the SRS Tritium Extraction Facility, activities include recovery and purification of tritium, deuterium, and helium-3 gases from reservoir recycle gas, hydride storage vessels, and facility effluent cleanup systems. Gas mixtures are enriched to support the DSW schedules. - At Y-12, activities include uranium purification and conversion to UO_3, acid removal and waste processing, conversion of enriched uranium oxide to metal buttons, material transport and storage, and processing enriched uranium chips and scraps, as well as chemical conversion of lithium, and lithium salvage operations. MRR also funds the Central Scrap Management Office that manages the receipt, storage, and shipment of enriched uranium scrap and the Precious Metals Business Center that provides a cost-effective service to many users within the DOE complex.	- At the SRS Tritium Extraction Facility, activities include recovery and purification of tritium, deuterium, and helium-3 gases from reservoir recycle gas, hydride storage vessels, and facility effluent cleanup systems. Gas mixtures are enriched to support the DSW schedules. - At Y-12, activities include uranium purification and conversion to UO_3, acid removal and waste processing, conversion of enriched uranium oxide to metal buttons, material transport and storage, and processing enriched uranium chips and scraps, as well as chemical conversion of lithium, and lithium salvage operations. MRR also funds the Central Scrap Management Office that manages the receipt, storage, and shipment of enriched uranium scrap and the Precious Metals Business Center that provides a cost-effective service to many users within the DOE complex. **FY 2016-FY 2019** - Provides base capability and capacity across production plants and national laboratories for recycling and recovery of plutonium, uranium, lithium, tritium and other materials consistent with the Stockpile Stewardship Management Plan (SSMP) and Production and Planning Directive (P&PD). LANL vault de-inventory scope increases from FY14 levels. Y-12 scope remains stable as Major Item of Equipment (MIE) projects are executed.	

Readiness in Technical Base and Facilities
Containers

Description
The Containers subprogram funds off-site shipping container research and development, design, certification, re-certification, test and evaluation, production and procurement, fielding and maintenance, decontamination and disposal, and off-site transportation authorization of shipping containers for nuclear materials and components supporting both the nuclear weapons program and nuclear materials consolidation. These efforts include efficiencies achieved by close coordination of planning and operations with users and customers.

Containers

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Containers		
• Provides for shipping container research and development, design, certification, re-certification, test and evaluation, production and procurement, fielding and maintenance, decontamination and disposal, and off-site transportation authorization of shipping containers for nuclear materials and components supporting both the nuclear weapons program and nuclear materials consolidation. • Completes development and certification of the DPP-3 container to improve safety, security, maintainability, and content scope. Recertifies container fleet every five years to ensure containers still meet regulations and requirements. • Continues to add new contents to existing container fleet. • Develops new containers in response to changing regulations, which historically have been updated every 10-15 years and were last updated in 2004. Updated regulations could put some older containers in grandfathered status or eliminate or severely restrict their usage depending on how they are changed. • Continues fabrication of needed containers including the DPP-3 and DPP-2 to support phased transition of contents from the DT-22. • Provides container refurbishment, reconditioning, and annual maintenance and certification to ensure containers are available for use to support weapons production, LEP, surveillance, and dismantlement activities.	• Continues to provide for shipping container research and development, design, certification, re-certification, test and evaluation, production and procurement, fielding and maintenance, decontamination and disposal, and off-site transportation authorization of shipping containers for nuclear materials and components supporting both the nuclear weapons program and nuclear materials consolidation. • Develops new containers in response to changing regulations, which historically have been updated every 10-15 years, and were last updated in 2004. Updated regulations will put older containers in grandfathered status, eliminate, or severely restrict their usage depending on their mission use. • Completes development and certification of the DPP-1 container to improve safety, security, maintainability, and maintain content quality. • Recertifies container fleet every five years to ensure containers still meet regulations and requirements. • Continues to add new contents to existing container fleet. • Continue fabrication of needed DPP-2 to support phased transition of contents from the DT-22. • Commence fabrication of needed DPP-1 to support phased transition of contents from the Model FL container. • Provides container refurbishment, reconditioning, and annual maintenance and certification to ensure containers are available for use to support weapons production, LEP, surveillance, and	• Maintains the container program to support the nuclear weapons program and nuclear materials consolidation.

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
	dismantlement activities. **FY 2016-FY 2019** • Continues to provide for shipping container research and development, design, certification, re-certification, test and evaluation, production and procurement, fielding and maintenance, decontamination and disposal, and off-site transportation authorization of shipping containers for nuclear materials and components supporting both the nuclear weapons program and nuclear materials consolidation. • Complete development of new containers in response to changing regulations, which historically have been updated every 10-15 years, and were last updated in 2004. Updated regulations will put older containers in grandfathered status, eliminate, or severely restrict their usage depending on their mission use. • Completes development and certification of the DPP-3 container to improve safety, security, maintainability, and maintain content quality. • Commence development and certification of the ES-4100 container to improve safety, security, maintainability, and maintain content quality. • Recertifies container fleet every five years to ensure containers still meet regulations and requirements. • Continues to add new contents to existing container fleet. • Complete fabrication of needed DPP-2 to support phased transition of content from the DT-22. • Complete fabrication of needed DPP-3 to support phased transition of contents from the DT-20 and DT-23. • Complete fabrication of needed DPP-1 to support	

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
	phased transition of contents from the Model FL container. • Provides container refurbishment, reconditioning, and annual maintenance and certification to ensure containers are available for use to support weapons production, LEP, surveillance, and dismantlement activities. Provides disposal of non-compliant containers and containers that are replaced by new designed containers.	

Readiness in Technical Base and Facilities
Storage

Description

The RTBF Storage subprogram provides effective storage and management of pits, plutonium, enriched and depleted uranium, lithium, tritium, heavy water, weapons components and other materials. The Storage subprogram now includes LANL for onsite SAVY-4000 storage container certification, surveillance and testing and pit surveillance scope of work at Pantex.

Storage

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Storage		
• Provides for effective storage and management of pits, highly enriched uranium (HEU), and other weapons nuclear and non-nuclear materials. Includes: receipt, storage, and inventory of nuclear materials, non-nuclear materials, HEU, enriched lithium, and components from dismantled warheads. • At Pantex, activities include long-term storage of special nuclear materials, which involved planning, engineering, design, and start-up activities; processing and repackaging materials for safe storage; storage activities for the strategic reserve; national security inventory thermal monitoring and characterizations; disposition of legacy materials; and nuclear materials management, including planning, assessment, and forecasting nuclear material requirements. Funding includes pit surveillance and provides for the procurement and installation of the second High Resolution Computed Tomography capability. • At Y-12, activities include the management and storage of uranium, lithium, and other nuclear and weapons materials, including the nation's strategic reserve of HEU. The Storage subprogram supports the loading, operating, and maintaining of HEU Materials Facility. This subprogram also provides the long-term planning and analysis of materials required for the Y-12 manufacturing strategy in support of the nuclear weapons stockpile. • Continues to support the emphasis on nuclear material consolidation and de-inventory activities	• Continues to provide for effective storage and management of pits, HEU, and other weapons nuclear and non-nuclear materials. Includes: receipt, storage, and inventory of nuclear materials, non-nuclear materials, HEU, enriched lithium, and components from dismantled warheads. • At LANL, activities include onsite SAVY-4000 storage container certification, surveillance, testing and procurements. At Pantex, activities include long-term storage of special nuclear materials, which involved planning, engineering, design, and start-up activities; processing and repackaging materials for safe storage; storage activities for the strategic reserve; national security inventory thermal monitoring and characterizations; disposition of legacy materials; and nuclear materials management, including planning, assessment, and forecasting nuclear material requirements. Funding includes pit surveillance and provides for the procurement and installation of the second High Resolution Computed Tomography capability. • At Y-12, activities include the management and storage of uranium, lithium, and other nuclear and weapons materials, including the nation's strategic reserve of HEU. The Storage subprogram supports the loading, operating, and maintaining of HEU Materials Facility. This subprogram also provides the long-term planning and analysis of materials required for the Y-12 manufacturing strategy in support of the nuclear weapons stockpile.	• Provides additional funding to Y-12 to support Area 5 de-inventory and procurement of Pantex's second CoLOSSIS unit to meet pit surveillance needs.

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
across the nuclear enterprise.	• Continues to support the emphasis on nuclear material consolidation and de-inventory activities across the nuclear enterprise. **FY 2016-FY 2019** • Provides base capability and capacity across production plants and national laboratories for storage of plutonium, uranium, lithium, tritium and other materials consistent with SSMP and P&PD. Provides additional funding to Y-12 to support Area 5 de-inventory and transition to UPF.	

Readiness in Technical Base and Facilities
Maintenance and Repair of Facilities

Description

The Maintenance and Repair of Facilities subprogram funds the direct funded maintenance activities at NNSA sites across the NSE. It supports costs for labor, materials, and supplies for corrective, preventive and predictive maintenance activities. Also, it includes costs to conduct required surveillances on vital safety systems, (e.g., air monitoring systems) and building support systems, (e.g., HVAC). This subprogram will deploy BUILDER management system to implement enterprise-wide, risk-informed investments in existing infrastructure. Maintenance prioritization will be based on mission needs, probability of failure of a system or a component and risk determination with regard to safety, security and environmental requirements. The investment strategy is to focus on those structures, systems, and components that are considered essential to the national security mission.

This subprogram will also fund roof replacement projects executed under the Roof Asset Management Program. It will allow NNSA to investigate and implement other enterprise-wide Asset Management Programs for which the strategic, centralized procurement of common equipment like roofs, chillers, and lighting would be more cost effective.

Maintenance and Repair

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Maintenance and Repair of Facilities		
• Funds the direct maintenance activities at NNSA sites across the nuclear security enterprise. These costs include completing prioritized annual surveillances and preventative maintenance of the vital systems, structures, and components at mission essential facilities. Funding also includes activities associated with corrective maintenance and predictive maintenance. Provides funds for unplanned or unforeseen events as corrective maintenance activities. Provides for maintenance of all vital safety systems in both nuclear and non-nuclear facilities essential for national security missions. • In addition: o At KCP, funding provides for real property maintenance, process equipment maintenance, excess facility surveillance and maintenance. o At Pantex, funding provides for Bay and Cell maintenance, emerging requirements, and common site support. o At SNL, funding provides for micro-fabrication facility, Silicon Fabrication, TTR, ACRR and Environmental Test Facilities. o At SRS, funding provides for maintenance activities associated with gas transfer systems. o At Y-12, funding provides for facility risk reduction activities and repairs of identified structural deficiencies in mission essential facilities. o At LANL, funding provides for maintenance funds for DARHT, LANSCE, Beryllium, waste management, radiological laboratory, and tritium facilities. o At NNSS, funding provides for maintenance of	• Continues to fund the direct maintenance activities at NNSA sites across the nuclear security enterprise. These costs include labor materials and supplies for corrective, preventive and predictive maintenance activities. It also pays for completing prioritized annual surveillances and preventive maintenance of the vital systems, structures, and components at existing facilities. This program also funds priority roof replacement projects under RAMP. • In addition: o At KCP, funds maintenance of process equipment and tenant improvement equipment, and Bannister Road surveillance and maintenance. o At Pantex, funds Bays and Cell maintenance, emerging requirements, and common site support. o At SNL, funds space charge share to support maintenance activities. o At SRS, funds maintenance on tritium facilities and associated equipment and activities associated with gas transfer systems. o At Y-12, funds repairs of identified structural deficiencies in mission essential facilities, fire system surveillances and repairs. o At LANL, funds maintenance activities at PF-4, CMR, DARHT, LANSCE, Beryllium, waste management, radiological laboratory, and tritium facilities o At NNSS, funds maintenance of JASPER, BEEF, DAF, U1a. o At LLNL, funds maintenance activities at	• The decrease is due to slower pace of maintenance activities at Bannister Federal Complex at KCP and deferral of ten percent of the predictive and preventive maintenance scope at the NSE sites.

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
JASPER, BEEF, DAF, U1a. o At LLNL, funding provides for maintenance activities at Contained Firing Facility, Superblock maintenance, HEAF facility, HE machine shops, and waste management facilities.	Contained Firing Facility, Superblock, HEAF, HE machine shops, NIF and waste management facilities. **FY 2016-FY 2019** • In the outyears, funding will continue to support the direct maintenance activities at NNSA sites across the nuclear security enterprise, which includes costs for labor, materials, and supplies for corrective, preventive and predictive maintenance activities. It also includes costs to conduct required surveillances on vital safety systems, (e.g., air monitoring systems) and building support systems (e.g., HVAC). These costs include completing prioritized annual surveillances and preventative maintenance of the vital systems, structures, and components at existing facilities.	

Readiness in Technical Base and Facilities
Recapitalization

Description

The Recapitalization subprogram is an investment strategy for managing risks in existing infrastructure and capabilities by prioritizing investments to improve the condition and extend the design life of the structures, capabilities or systems. Recapitalization supports upgrading the aging NNSA nuclear security infrastructure and improving the safety and quality of the workplace for NNSA's talented and dedicated workforce. Recapitalization also supports and improves the reliability and efficiency of NNSA's core infrastructure to support safe, secure, and environmentally responsible execution of all programs.

The Recapitalization subprogram includes costs for General Plant Projects, Capital Equipment Projects, Expense Funded Projects, and Capabilities Based Investments activities.

Recapitalization funds are also used to disposition infrastructure that is no longer needed thus reducing surveillance and maintenance costs on obsolete facilities and significantly lowering risks to worker, the public, the environment, and program objectives.

A concentrated effort entitled the Capabilities Based Investments (CBI) continues to implement multi-year projects and strategies to sustain, enhance or replace Defense Programs (DP) capabilities through focused investments supporting the core programmatic requirements across the enterprise. These investments address needs beyond any single facility, Campaign, or weapon system and are essential to achieving program mission objectives. Over the years, DP's science and manufacturing capabilities have been lost or degraded due to aging, broken or outdated equipment and supporting systems. To support ongoing and future DP's weapons activities, CBI invests in projects to reduce risk to the mission and ensure that needed capabilities are available for LEPs and other mission work. CBI provides a corollary to NNSA's line item construction by funding smaller projects to enhance or sustain critical DP capabilities across the enterprise.

Recapitalization

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Recapitalization		
• Provides funds for needed investments in obsolete/aging facilities and infrastructure to improve its condition. These costs include upgrades of the Bays and Cells at PX; fire lead-ins and suppression system improvements at NNSS; seismic upgrades at LANL; switchgear and HVAC repairs at various mission essential facilities at Y-12; Silicon Fab and micro fabrication recapitalization; Annual Core Research Reactor (ACRR) refurbishment and Tonopah Test Range recapitalization at SNL, and HE machine shop refurbishment at LLNL. • Provides targeted, strategic investments for life-extension and modernization of enduring requirements needed to sustain DP's capabilities. CBI will provide funding to implement projects across the nuclear security enterprise, such as: o At LANL, upgrades in TA-11 to support environmental testing needs associated with the B61 LEP. o At LLNL, investments to support annual stockpile assessments and surveillance. o At NNSS, DAF x-ray equipment replacement upgrades. o At Pantex, revitalization of the flame detection and Radiation Alarm Monitoring Systems (RAMS) in areas used during weapons assembly/disassembly operations. o At SRS, replacement of aging calorimeters used for gas transfer activities. o At Y-12, mission critical investments needed to support continuity of enriched uranium capability and Direct Electrolytic Reduction (DER) deployment to support uranium oxide	• Continues to provide urgent improvements to facilities and work spaces and improve safety, reliability and working conditions. • Funds prioritized investments in obsolete/aging facilities and infrastructure to include DAF fire suppression system and electrical system upgrades at Nevada; Facility Risk Reduction implementation in enriched uranium (EU) and non-EU facilities at Y-12; High Pressure Fire Loop lead-in/Flame Detection/Radiation Alarm system at PX; Chiller and boiler replacements, HVAC upgrades at various sites. It also funds Other Project Costs associated with Line Item Construction, such as LLNL, Y-12, and SNL Emergency Operations Center. • CBI continues to provide targeted, strategic investments for life-extension and modernization of enduring requirements needed to sustain DP's capabilities. CBI provides funding to implement projects across the nuclear security enterprise including continued investments to: support LEP assessment at LLNL, support B61 LEP environmental testing needs at LANL, and enable DP's mission across the enterprise. Additional FY 2015 projects include: o At NNSS, investments to modernize down-draft tables and radiography capabilities for sub-critical experiments. o At Pantex, vacuum chamber upgrades needed for programmatic deliverables. o At SNL, investments to lithium battery R&D and testing. o At Y-12, investments to provide an enriched uranium canning station.	• The increase in Recapitalization is to modernize aging infrastructure and for additional safety-related recapitalization. • Increases in CBI activities from FY14 to FY15 reflect increased needs at each site to maintain defense program's capabilities and scope deferred from previous years across the enterprise.

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
conversion to metal for use in CSA re-manufacturing.	**FY 2016-FY 2019** • Continues to provide urgent improvements to facilities and work spaces and improve safety, reliability and working conditions. • Provides funds for needed investments in obsolete/aging facilities and infrastructure to improve its condition. These costs include upgrades of the Bays and Cells at PX; fire lead-ins at DAF; seismic upgrades at LANL; switchgear and HVAC repairs at various mission essential facilities at Y-12; ACRR refurbishment and TTR recapitalization at SNL, and HE machine shop refurbishment at LLNL. • Continues to provide targeted, strategic investments for life-extension and modernization of enduring requirements needed to sustain DP's capabilities. CBI will provide funding to implement projects across the nuclear security enterprise including continued investments to support projects initiated in previous fiscal years, including investments in Radiation Alarm Monitoring and Flame Detection systems in bays and cells at Pantex, B61 environmental testing capabilities at LANL, and investments to support warhead assessment at LLNL. • Through the outyear funding profile (FYNSP), CBI will successfully manage and execute targeted capability investments across the enterprise by applying previously successful program management practices. Increases in program funding in FY2016 and beyond are consistent with feedback from field representatives regarding the need for capability investments at each site.	

Readiness in Technical Base and Facilities
Construction

Description

The RTBF Construction subprogram plays a critical role in revitalizing the nuclear security enterprise including the nuclear weapons manufacturing and research and development infrastructure. Investments from this subprogram will improve the responsiveness and/or utility of the infrastructure and its technology base. The subprogram is focused on two primary objectives: (1) identification, planning, and prioritization of the projects supporting national security objectives, particularly the weapons programs, and (2) development and execution of these projects within approved cost and schedule baselines.

The funding request for FY 2015 reflects the start of preliminary design for Emergency Operations Centers at Y-12, LLNL and SNL. The acquisition strategy will utilize one basic design for construction of two facilities at two different locations, e.g., single design for LLNL and Y-12. These facilities will incorporate lessons learned from responding to natural disasters such as the earthquake and tsunami that impacted the Fukushima Daiichi nuclear power plant.

The funding request for FY 2015 reflects the continued design and preparatory construction for Uranium Processing Facility (UPF), Y-12. Following construction of the UPF building and installation of required support systems, installation of uranium processing equipment will be phased and prioritized to move critical capabilities out of Building 9212 as soon as practicable.

Requested FY 2015 funding will be used to continue construction of the Transuranic Waste Facility Project, and TA-55 Reinvestment Project II, Phase C, LANL and continue design of the Transuranic Liquid Waste Treatment Facility project at LANL. In addition, funding is requested to start the design of the TA-55 Reinvestment Project, Phase III Project at LANL and the High Explosive Science and Engineering Facility at Pantex.

50 US Code 2746 requires that if the estimated cost of completing a conceptual design for a construction project exceeds $3,000,000, the Secretary shall submit to Congress a request for funds for the conceptual design before submitting a request for funds for the construction project. NNSA anticipates that the estimated cost to complete the conceptual design of the following two projects will exceed the $3,000,000 threshold:

1. Weapons Engineering Facility at the Sandia National Laboratories, New Mexico, and;
2. Lithium Production Facility at the Y-12 National Security Complex.

The rough-order of magnitude cost estimates to complete the conceptual design is between $7,000,000 and $8,000,000 for each of the above planned projects. NNSA plans to request design funds in FY 2017 for the Lithium Production Facility and FY 2018 for the Weapons Engineering Facilities.

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Construction		
• Begin non-nuclear subprojects and site preparation activities for UPF at Y-12. • Start design of the Transuranic (TRU) Liquid Waste Treatment facility project. • Complete design and start construction of RLWTF Upgrade Project's Low Level Waste Treatment Facility subproject. • Start construction of TRU Waste Facility Phase B subproject. • Complete design and start construction of TA-55 Reinvestment Project (TRP)-II, Phase C subproject.	• Continue subprojects and site preparation activities for UPF at Y-12. Achieve project baseline in October 2015. • Start design of the High Explosive (HE) Science, and Engineering Facility at Pantex. • Continue construction of TRP-II, Phase C subproject at LANL. • Start design of the TA-55 Reinvestment Project, Phase III at LANL. • Continue design of the TRU Liquid Waste project, and continue construction on the RLWTF's Low Level Liquid Waste subproject at LANL. • Start design of Emergency Operations Center activities at Y-12, SNL, and LLNL. **FY 2016-FY 2019** • In FY 2016, complete construction of HE Pressing Facility and start operations in FY 2017 at Pantex. • Begin design activities associated with the Electrical Infrastructure Upgrade Project at LLNL, LANL and Y-12. • Continue design and construction activities on Emergency Operation Centers. • Begin design activities for the Y-12 Fire stations. • In FY 2017, start design and construction of the following: o Design of the Lithium Production Facility, Y-12. o Design of Tritium Responsive Infrastructure Modernization (TRIM) Project, SRS. o Construction (long-lead procurement) of TA-55 Reinvestment Project, Phase III, LANL. o Construction of HE Science and Engineering Facility, Pantex.	• Adds TA-55 Reinvestment Project Phase III at LANL, HE Science and Engineering Facility at PX, and the Emergency Operations Centers at Y-12, LLNL and SNL. • Continues previously started projects: TRU Waste Facility, TRP-II, Phase C, and TLW at LANL and UPF at Y-12. • Complete construction funding for the RLWTF, Low Level Liquid Waste subproject at LANL.

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
	• In FY 2017, complete construction of: o TRU Waste Facility at LANL and start operation in FY 2018. o TA-55 Reinvestment Project II, Phase C o Radioactive Liquid Waste Treatment Facility Upgrade, Low Level Liquid Waste Treatment Facility subproject. • In FY 2018, start design of the following: o Component Fabrication and Qualification Facility, Pantex. o Weapons Engineering Facility, SNL. o Energetic Materials Characterization Facility, LANL.	

Readiness in Technical Base and Facilities Performance Measures

In accordance with the GPRA Modernization Act of 2010, the Department sets targets for, and tracks progress toward, achieving performance goals for each program. For more information, refer to the Department's FY 2013 Annual Performance Report.

	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019

Construction Projects (formerly Major Construction Projects) - Execute construction projects within approved costs and schedules, as measured by the total percentage of projects with total estimated cost (TEC) greater than $20 million with a schedule performance index (ratio of budgeted cost of work performed to budgeted cost of work scheduled) and a cost performance index (ratio of budgeted cost of work performed to actual cost of work performed) between 0.9-1.15.

	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Target	90% of projects	90% of projects	90% of projects	90% of projects	90% of projects	90% of projects	90% of projects
Result	**Met** - 90						
Endpoint Target	Annually achieve 90% of baselined construction projects with TEC greater than $20M with actual SPI and CPI of 0.9-1.15 as measured against approved baseline definitions.						

Facility Operations – Enable NNSA missions by providing operational facilities to support nuclear weapon dismantlement, life extension, surveillance, and research and development activities, as measured by percent of scheduled versus planned days mission-critical and mission-dependent facilities are available without missing key deliverables.

	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Target	N/A	95% availability	95% availability	95% availability	95% availability	95% availability	95% availability
Result							
Endpoint Target	Mission critical and mission dependent facilities are available at least 95% of scheduled days annually.						

Note: This performance measure was located in the Site Stewardship program in the FY 2014 Congressional Justification but has been moved to RTBF, due to direction by Congress.

Readiness in Technical Base and Facilities
Capital Summary

(Dollars in Thousands)

	Total	Prior Years	FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Current	FY 2015 vs FY 2014
Capital Operating Expenses Summary (including (Major Items of Equipment (MIE)							
Capital Equipment >$500K (including MIE)	661,082	71,261	55,593	67,532	67,532	85,678	+18,146
Total, Capital Operating Expenses	**661,082**	**71,261**	**55,593**	**67,532**	**67,532**	**85,678**	**+18,146**
Capital Equipment > $500K (including MIE)							
Total Non-MIE Capital Equipment (>$500K)	389,863	58,476	44,307	45,282	45,282	46,278	+996
Betterment and Replacement of the 201 MHz Modules 2, 3, and 4 at the LANSCE accelerator, LANL	42,667	12,165	7,286	10,750	10,750	8,500	-2,250
Calciner, Y-12	39,300	0	1,300	1,200	1,200	7,800	+6,600
Colossis, PX	7,952	620	0	5,100	5,100	1,400	-3,700
Electrorefiners, Y-12	70,000	0	1,500	3,300	3,300	6,500	+3,200
Direct Electrolytic Reduction, Y-12	67,000		400	600	600	5,000	+4,400
LINAC, Device Assembly Facility, NNSS	3,200	0	800	1,300	1,300	1,100	-200
Enriched Uranium Salt Synthesis (UCl3), Y-12	34,000	0	0	0	0	2,000	+2,000
Additive Machine for Nuclear Explosives Package Metal Components, LLNL	2,100	0	0	0	0	2,100	+2,100
Jig Borer (5 Axis Milling Machine), LLNL	2,600	0	0	0	0	2,600	+2,600
Verson Hydro-Form Press, LLNL	2,400	0	0	0	0	2,400	+2,400
Total, Capital Equipment (including MIE)	**661,082**	**71,261**	**55,593**	**67,532**	**67,532**	**85,678**	**+18,146**
Total, Capital Summary	**661,082**	**71,261**	**55,593**	**67,532**	**67,532**	**85,678**	**+18,146**

Outyears for Readiness in Technical Base and Facilities

	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Capital Operating Expenses Summary (including (Major Items of Equipment (MIE)				
Capital Equipment >$500K (including MIE)	86,620	87,311	89,900	85,987
Total, Capital Operating Expenses	**86,620**	**87,311**	**89,900**	**85,987**
Capital Equipment > $500K (including MIE)				
Total Non-MIE Capital Equipment (>$500K)	47,296	48,337	49,400	50,487
Betterment and Replacement of the 201 MHz Modules 2, 3, and 4 at the LANSCE accelerator, LANL	3,966	0	0	0
Calciner, Y-12	8,000	8,000	9,000	4,000
Colossis, PX	358	474	0	0
Electrorefiners, Y-12	13,000	13,000	13,000	13,000
Direct Electrolytic Reduction, Y-12	8,000	11,000	12,000	12,000
LINAC, Device Assembly Facility, NNSS	0	0	0	0
Enriched Uranium Salt Synthesis (UCl3), Y-12	6,000	6,500	6,500	6,500
Additive Machine for Nuclear Explosives Package Metal Components, LLNL	0	0	0	0
Jig Borer (5 Axis Milling Machine), LLNL	0	0	0	0
Verson Hydro-Form Press, LLNL	0	0	0	0
Total, Capital Equipment (including MIE)	**86,620**	**87,311**	**89,900**	**85,987**

Construction Projects Summary

	(Dollars in Thousands)					
	Total	Prior Years	FY 2013 Current	FY 2014 Current	FY 2015 Request	FY 2015 vs FY 2014
15-D-613, Emergency Operatons Center, Y-12						
Total Estimated Cost (TEC)	20,000	0	0	0	2,000	+2,000
Other Project Cost (OPC)	2,500	0	0	450	450	0
TPC, 15-D-613, Emergency Operatons Center, Y-12	**22,500**	**0**	**0**	**450**	**2,450**	**+2,000**
15-D-612, Emergency Operatons Center, LLNL						
TEC	20,000	0	0	0	2,000	+2,000
OPC	2,500	0	200	600	200	-400
TPC, 15-D-612, Emergency Operatons Center, LLNL	**22,500**	**0**	**200**	**600**	**2,200**	**+1,600**
15-D-611, Emergency Operatons Center, SNL						
TEC	40,000	0	0	0	4,000	+4,000
OPC	2,700	0	0	400	200	-200
TPC, 15-D-611, Emergency Operatons Center, SNL	**42,700**	**0**	**0**	**400**	**4,200**	**+3,800**
15-D-302, TA-55 Reinvestment Project Phase III, LANL						
TEC	140,062	0	0	0	16,062	+16,062
OPC	29,500	0	500	4,000	3,000	-1,000
TPC, 15-D-302, TA-55 Reinvestment Project Phase III, LANL	**169,562**	**0**	**500**	**4,000**	**19,062**	**+15,062**
15-D-301, HE Science & Engineering Facility, PX						
TEC	72,300	0	0	0	11,800	+11,800
OPC	24,700	390	1,400	750	100	-650
TPC, 15-D-301, HE Science & Engineering Facility, PX	**97,000**	**390**	**1,400**	**750**	**11,900**	**+11,150**

	(Dollars in Thousands)					
	Total	Prior Years	FY 2013 Current	FY 2014 Current	FY 2015 Request	FY 2015 vs FY 2014
12-D-301, TRU Waste Facilities, LANL						
TEC	83,990	28,064	22,266	26,722	6,938	-19,784
OPC	22,874	8,717	2,960	3,593	3,580	-13
TPC, 12-D-301, TRU Waste Facilities, LANL	**106,864**	**36,781**	**25,226**	**30,315**	**10,518**	**-19,797**
11-D-801, TA-55 Reinvestment Project, Phase 2, LANL						
TEC	93,561	44,705	8,177	30,679	10,000	-20,679
OPC	15,630	8,640	1,100	1,783	2,125	+342
TPC, 11-D-801, TA-55 Reinvestment Project, Phase 2, LANL	**109,191**	**53,345**	**9,277**	**32,462**	**12,125**	**-20,337**
10-D-501, Nuclear Facility Risk Reduction, Y-12						
TEC	65,796	47,887	17,889	0	0	0
OPC	10,000	5,423	661	1,714	1,224	-490
TPC, 10-D-501, Nuclear Facility Risk Reduction, Y-12	**75,796**	**53,310**	**18,550**	**1,714**	**1,224**	**-490**
09-D-404, Test Capabilities Revitalization - II, SNL						
TEC	49,687	38,355	8,828	0	0	0
OPC	8,122	7,565	557	0	0	0
TPC, 09-D-404, Test Capabilities Revitalization - II, SNL	**57,809**	**45,920**	**9,385**	**0**	**0**	**0**
08-D-802, High Explosive Pressing Facility, PX						
TEC	140,397	105,461	17,815	0	0	0
OPC	4,840	2,589	200	300	400	+100
TPC, 08-D-802, High Explosive Pressing Facility, PX	**145,237**	**108,050**	**18,015**	**300**	**400**	**+100**
07-D-220, Radioactive Liquid Waste Treatment Facility Upgrade, LANL						
TEC	184,992	44,992	0	45,114	0	-45,114
OPC	29,078	11,471	1,640	2,179	3,000	+821
TPC, 07-D-220, Radioactive Liquid Waste Treatment Facility Upgrade, LANL	**214,070**	**56,463**	**1,640**	**47,293**	**3,000**	**-44,293**

	(Dollars in Thousands)					
	Total	Prior Years	FY 2013 Current	FY 2014 Current	FY 2015 Request	FY 2015 vs FY 2014
07-D-220-04, Transuranic Liquid Waste Facility, LANL						
TEC	85,605	0	0	10,605	15,000	+4,395
OPC	10,428	0	0	1,639	654	-985
TPC, 07-D-220-04, Transuranic Liquid Waste Facility, LANL	**96,033**	**0**	**0**	**12,244**	**15,654**	**+3,410**
07-D-140, Project Engineering and Design (PED), VL						
TEC	20,183	18,183	2,000	0	0	0
OPC	0	0	0	0	0	0
TPC, 07-D-140, Project Engineering and Design (PED), VL	**20,183**	**18,183**	**2,000**	**0**	**0**	**0**
06-D-140, Project Engineering and Design (PED), VL						
TEC	39,992	0	0	2,500	0	-2,500
OPC	0	0	0	0	0	0
TPC, 06-D-140, Project Engineering and Design (PED), VL	**39,992**	**0**	**0**	**2,500**	**0**	**-2,500**
06-D-141, PED/Construction, Uranium Processing Facility, Y-12						
TEC	TBD	508,185	312,783	297,000	322,000	+25,000
OPC	TBD	95,128	0	12,000	13,000	+1,000
TPC, 06-D-141, PED/Construction, Uranium Processing Facility, Y-12	**TBD**	**603,313**	**312,783**	**309,000**	**335,000**	**+26,000**
Total All Construction Projects						
TEC	1,056,565	835,832	389,758	412,620	389,800	-22,820
OPC	162,872	139,923	9,218	29,408	27,933	-1,475
Total Project Cost (TPC) All Construction Projects	**1,219,437**	**975,755**	**398,976**	**442,028**	**417,733**	**-24,295**

Outyears to Completion for Readiness in Technical Base and Facilities

	(Dollars in Thousands)				
	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request	Outyears to Completion
18-D-XXX, Energetic Materials Characterization, LANL					
TEC	0	0	7,000	0	0
OPC	200	200	1,000	0	0
TPC, 18-D-XXX, Energentic Materials Characterization, LANL	**200**	**200**	**8,000**	**0**	**0**
18-D-XXX, HE Component Fabrication & Qualification Facility, PX					
TEC	0	0	21,300	30,000	9,000
OPC	1,000	1,000	1,000	2,000	2,000
TPC, 18-D-XXX, HE Component Fabrication & Qualification Facility, PX	**1,000**	**1,000**	**22,300**	**32,000**	**11,000**
18-D-XXX, Weapons Engineering Facility, SNL					
TEC	0	0	35,000	70,500	63,500
OPC	1,000	1,000	2,000	4,000	4,000
TPC, 18-D-XXX, Weapons Engineering Facility, SNL	**1,000**	**1,000**	**37,000**	**74,500**	**67,500**
17-D-XXX, Tritium Responsive Infrastructure Modernization, SRS					
TEC	0	9,000	35,000	15,000	0
OPC	1,000	500	500	2,000	0
TPC, 17-D-XXX, Tritium Responsive Infrastructure Modernization, SRS	**1,000**	**9,500**	**35,500**	**17,000**	**0**
17-D-XXX, Lithium Production Facility, Y-12					
TEC	0	30,000	0	55,000	0
OPC	500	500	500	3,000	5,000
TPC, 17-D-XXX, Lithium Production Facility, Y-12	**500**	**30,500**	**500**	**58,000**	**5,000**

	(Dollars in Thousands)				
	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request	Outyears to Completion
16-D-XXX, Electrical Improvements for Nuclear Operations, Y-12					
TEC	5,000	20,000	9,000	21000	0
OPC	3,000	3,000	4,000	3,000	0
TPC, 16-D-XXX, Electrical Improvements for Nuclear Operations, Y-12	**8,000**	**23,000**	**13,000**	**24,000**	**0**
16-D-XXX, Electrical Infrastructure Upgrades, LLNL					
TEC	15,000	8,000	0	0	0
OPC	1,000	1,000	0	0	0
TPC, 16-D-XXX, Electrical Infrastructure Upgrades, LLNL	**16,000**	**9,000**	**0**	**0**	**0**
16-D-XXX, Electrical Infrastructure Upgrades, LANL					
TEC	15,000	10,000	0	0	0
OPC	1,500	1,000	0	0	0
TPC, 16-D-XXX, Electrical Infrastructure Upgrades, LANL	**16,500**	**11,000**	**0**	**0**	**0**
16-D-XXX, Fire Station, Y-12					
TEC	5,000	10,000	5,000	0	0
OPC	500	500	1,000	0	0
TPC, 16-D-XXX, Fire Station, Y-12	**5,500**	**10,500**	**6,000**	**0**	**0**
15-D-613, Emergency Operations Center, Y-12					
TEC	2,000	16,000	0	0	0
OPC	250	500	500	200	150
TPC, 15-D-613, Emergency Operations Center, Y-12	**2,250**	**16,500**	**500**	**200**	**150**
15-D-612, Emergency Operations Center, LLNL					
TEC	2,000	16,000	0	0	0
OPC	500	500	300	200	0
TPC, 15-D-612, Emergency Operations Center, LLNL	**2,500**	**16,500**	**300**	**200**	**0**

	(Dollars in Thousands)				
	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request	Outyears to Completion
15-D-611, Emergency Operations Center, SNL					
TEC	4,000	16,000	16,000	0	0
OPC	200	200	200	1,500	0
TPC, 15-D-611, Emergency Operations Center, SNL	**4,200**	**16,200**	**16,200**	**1,500**	**0**
15-D-302, TA-55 Reinvestment Project Phase III, LANL					
TEC	38,000	33,000	31,000	10,000	12,000
OPC	3,000	3,000	3,000	6,000	7,000
TPC, 15-D-302, TA-55 Reinvestment Project Phase III, LANL	**41,000**	**36,000**	**34,000**	**16,000**	**19,000**
15-D-301, HE Science and Engineering Facility, PX					
TEC	0	20,000	33,500	7,000	0
OPC	100	100	6,000	13,654	2,206
TPC, 15-D-301, HE Science and Engineering Facility, PX	**100**	**20,100**	**39,500**	**20,654**	**2,206**
12-D-301, TRU Waste Facilities, LANL					
TEC	0	0	0	0	0
OPC	3,322	702	0	0	0
TPC, 12-D-301, TRU Waste Facilities, LANL	**3,322**	**702**	**0**	**0**	**0**
11-D-801, TA-55 Reinvestment Project, Phase 2, LANL					
TEC	0	0	0	0	0
OPC	1,000	982	0	0	0
TPC, 11-D-801, TA-55 Reinvestment Project, Phase 2, LANL	**1,000**	**982**	**0**	**0**	**0**
07-D-220-04, Transuranic Liquid Waste Facility, LANL					
TEC	60,000	0	0	0	0
OPC	2,061	1,500	1,500	2,000	1,074
TPC, 07-D-220-04, Transuranic Liquid Waste Facility, LANL	**62,061**	**1,500**	**1,500**	**2,000**	**1,074**

	(Dollars in Thousands)				
	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request	Outyears to Completion
06-D-141, PED/Construction, Uranium Processing Facility, Y-12					
TEC	TBD	TBD	TBD	TBD	TBD
OPC	TBD	TBD	TBD	TBD	TBD
TPC, 06-D-141, PED/Construction, Uranium Processing Facility, Y-12	**430,000**	**500,000**	**515,000**	**520,000**	**0**
Total All Construction Projects					
TEC	146,000	188,000	192,800	208,500	84,500
OPC	20,133	16,184	21,500	37,554	21,430
Total Project Cost (TPC) All Construction Projects	**166,133**	**204,184**	**214,300**	**246,054**	**105,930**

15-D-613, Emergency Operations Center
Y-12 National Security Complex, Oak Ridge, Tennessee
Project is for Design and Construction

1. Summary and Significant Changes

The most recent DOE O 413.3B approved Critical Decision (CD) is Critical Decision 0, Approve Mission Need, approved on July 26, 2012, with a preliminary cost range of $45,000 to $75,000 for three Emergency Operations Centers (EOC) at Y-12, Lawrence Livermore National Laboratory, and Sandia National Laboratory and CD-4 date range of 2nd Quarter of Fiscal Year (FY) 2018 and 2nd Quarter FY 2020. The TEC for this project remains at the rough order of magnitude (ROM) estimate of $20,000.

A Federal Project Director has not been assigned to this project. Consistent with the Department of Energy (DOE) Order 413.3B, a Federal Project Director will be assigned upon CD-1 approval.

This Project Data Sheet (PDS) includes a new start for the budget year.

This PDS is new.

2. Critical Decision (CD) and D&D Schedule[a]

(fiscal quarter or date)

	CD-0	CD-1	Design Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2015	07/26/2012	2Q FY 2015	1Q FY 2017	1Q FY 2016	2Q FY 2017	2Q FY 2020	NA	NA

CD-0 – Approve Mission Need
CD-1 – Approve Alternative Selection and Cost Range
CD-2 – Approve Performance Baseline
CD-3 – Approve Start of Construction
CD-4 – Approve Start of Operations or Project Closeout
D&D Start – Start of Demolition & Decontamination (D&D) work
D&D Complete –Completion of D&D work

3. Baseline and Validation Status

(dollars in thousands)

	TEC, Design	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2015	4,000	16,000	20,000	2,500	NA	2,500	22,500

4. Project Description, Scope, and Justification

Mission Need

The Y-12 Emergency Operations Center will provide a survivable, habitable facility from which to monitor site conditions, respond to abnormal events, and provide command and control during the integrated response to an operational emergency. The current onsite facility is not compliant with DOE Order 151.1C "Comprehensive Emergency Management System." The order requires that emergency operations/response centers be capable of supporting continuous emergency operations for an extended period of time and survive various severe events, such as earthquakes and tornadoes.

[a] The schedules are only estimates and consistent with the high end of the schedule ranges.

Providing alternative emergency operations/response capabilities is consistent with both the DOE and National Nuclear Security Strategic Plans. In addition, the alternative capability will meet DOE Order 151.1C requirements by providing increased communication efficiency and event coordination, providing a habitable and sustainable working environment.

Scope and Justification

Scope

The final scope will be established at the time the project CD-2 is approved. During the conceptual design phase, feasible options will be evaluated to ensure the space need is correctly sized to meet the sites critical mission needs.

However, the minimum capabilities based on DOE Order 151.1C, will be provided. Capabilities will include: a) responding effectively and efficiently to operational emergencies, providing emergency assistance so that appropriate response measures are taken to protect workers, the public, the environment, and national security; b) recognizing and categorizing emergencies, as necessary; classifying emergencies promptly; and monitoring parameters associated with the emergency to detect changed or degraded conditions; c) reporting and notifying emergencies; and d) accomplishing re-entry activities properly and safely and commencing recovery and post-emergency activities properly.

Space will be provided for:
Emergency Operations/Emergency Command Center (EOC/ECC)
Emergency Response Dispatching and Emergency Communications
Emergency Alarm Monitoring Capabilities
Emergency Management Staffing;

Considerations will be given for survivability and habitability (continued use of facility during emergencies), sustainability, and ease access to the site for responders and managers.

Justification

The existing facility has the following limitations:

- Using aging facilities with extremely limited workspace; facilities not designed to survive the high-consequence natural phenomena events such as earthquakes, tornadoes, or floods.
- Existing facilities are within the range of worst-case hazardous material releases analyzed in the preliminary hazard assessments and due to leak path factors, the facilities will not provide a significant barrier to hazardous material releases and not equipped with positive pressure filtration system, i.e. HEPA filtration for habitability.
- Lacks provision to sustain 24 hour operations for durations required by DOE Order 151.1C

A July 2011 report by the DOE Office of Health Safety and Security, *Independent Oversight Evaluation of Emergency Response Facilities at the Y-12 National Security Complex*, identified concerns associated with onsite response facilities due to the lack of both habitability measures (pressurized and filtered air systems) and seismic construction. These vulnerabilities could result in the operational capabilities of these facilities being degraded during a hazardous material or seismic event that could result in a reduction in emergency response functions. The proposed Emergency Operations Center at Y-12 will effectively and efficiently support the Y-12 mission by providing a habitable, survivable facility from which to implement the comprehensive emergency management system for the Y-12 Complex.

Risk Description	Risk Handling
Changing security status and posture could impact project planning and execution.	Mitigate: The project will monitor security status during the planning and construction phases.
Continuing Resolution related funding issues may impact project execution throughout the life of the project funding cycle.	Mitigate. Continue to work with NNSA senior management to ensure funding requirements are met in time to support execution.
Changes in market/economic conditions (improvements) could exceed escalation allowances budgeted in the estimate.	Mitigate: Continually monitor market conditions and adjust as needed.

The project is being conducted in accordance with the project management requirements in DOE O 413.3B, Program and Project Management for the Acquisition of Capital Assets, and all appropriate project management requirements have been met.

5. Financial Schedule

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2015	2,000	2,000	1,000
FY 2016	2,000	2,000	2,500
FY 2017	0	0	500
Total, Design	4,000	4,000	4,000
Construction			
FY 2017	16,000	16,000	3,000
FY 2018	0	0	10,000
FY 2019	0	0	3,000
Total, Construction	16,000	16,000	16,000
TEC			
FY 2015	2,000	2,000	1,000
FY 2016	2,000	2,000	2,500
FY 2017	16,000	16,000	3,500
FY 2018	0	0	10,000
FY 2019	0	0	3,000
Total, TEC	20,000	20,000	20,000
Other Project Cost (OPC)			
OPC except D&D			
FY 2014	450	450	450
FY 2015	450	450	450
FY 2016	250	250	250
FY 2017	500	500	500
FY 2018	500	500	500
FY 2019	200	200	200
FY 2020	150	150	150

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Total, OPC except D&D	2,500	2,500	2,500
D&D	0	0	0
Total, D&D	0	0	0
OPC			
FY 2014	450	450	450
FY 2015	450	450	450
FY 2016	250	250	250
FY 2017	500	500	500
FY 2018	500	500	500
FY 2019	200	200	200
FY 2020	150	150	150
Total, OPC	2,500	2,500	2,500
Total Project Cost (TPC)			
FY 2014	450	450	450
FY 2015	2,450	2450	1,450
FY 2016	2,250	2250	2,750
FY 2017	16,500	16,500	4,000
FY 2018	500	500	10,500
FY 2019	200	200	3,200
FY 2020	150	150	150
Total, TPC	22,500	22,500	22,500

6. Details of Project Cost Estimate [a]

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	3,300		NA
Contingency	700		NA
Total, Design	4,000		NA
Construction			
Site Work	500		NA
Equipment	500		NA
Construction	13,000		NA
Contingency	2,000		NA
Total, Construction	16,000		NA
Total, TEC	20,000		NA
Contingency, TEC	2,700		NA
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	250		NA
Conceptual Design	650		NA
Start-Up	600		NA
Other OPC Costs	500		NA
Contingency	500		NA
Total, OPC except D&D	2,500		NA
D&D			
D&D	NA		NA
Contingency	NA		NA
Total, D&D	NA		NA
Total, OPC	2,500		NA
Contingency, OPC	500		NA
Total, TPC	22,500		NA
Total, Contingency	3,200		NA

[a] The numbers are only estimates and consistent with the high end of the cost ranges.

7. Schedule of Appropriation Requests

($K)

Request		Prior Years	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	Outyears	Total
FY 2015	TEC	0	0	2,000	2,000	16,000	0	0	0	20,000
	OPC	0	450	450	250	500	500	200	150	2,500
	TPC	0	450	2,450	2,250	16,500	500	200	150	22,500

8. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	2QFY 2020
Expected Useful Life (number of years)	30
Expected Future Start of D&D of this capital asset (fiscal quarter)	3QFY 2050

(Related Funding requirements)

(dollars in thousands)

	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	NA	NA	NA	NA
Utilities	NA	NA	NA	NA
Maintenance & Repair	NA	NA	NA	NA
Recapitalization	NA	NA	NA	NA
Total	NA	NA	NA	NA

9. Required D&D Information

Area	Square Feet
Area of new construction	NA
Area of existing facility(s) being replaced and D&D'ed by this project	NA
Area of other D&D outside the project	NA
Area of additional D&D space to meet the "one-for-one" requirement from the banked area	NA

10. Acquisition Approach

Design and construction contracts will be acquired through open competition; selection will be based on best value to the government and awards will be on firm-fixed price delivery. Acquisition management alternative will be performed during the conceptual design phase.

15-D-612, Emergency Operations Center,
Lawrence Livermore National Laboratory, California
Project is for Design and Construction

1. Summary and Significant Changes

The most recent DOE O 413.3B approved Critical Decision (CD) is Critical Decision 0, Approve Mission Need, approved on July 26, 2012, with a preliminary cost range of $45,000 to $75,000 for three Emergency Operations Centers (EOC) at Y-12, Lawrence Livermore National Laboratory, and Sandia National Laboratory and CD-4 date range of 2nd Quarter of Fiscal Year (FY) 2018 and 2nd Quarter FY 2020. The TEC for this project remains at the rough order of magnitude (ROM) estimate of $20,000.

A Federal Project Director has not been assigned to this project. Consistent with the Department of Energy (DOE) Order 413.3B, a Federal Project Director will be assigned upon CD-1 approval.

This Project Data Sheet (PDS) includes a new start for the budget year.

This PDS is new.

2. Critical Decision (CD) and D&D Schedule[a]

(fiscal quarter or date)

	CD-0	CD-1	Design Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2015	07/26/2012	4Q FY 2014	2Q FY 2017	1Q FY 2016	2Q FY 2017	4Q FY 2019	NA	NA

CD-0 – Approve Mission Need
CD-1 – Approve Alternative Selection and Cost Range
CD-2 – Approve Performance Baseline
CD-3 – Approve Start of Construction
CD-4 – Approve Start of Operations or Project Closeout
D&D Start – Start of Demolition & Decontamination (D&D) work
D&D Complete –Completion of D&D work

3. Baseline and Validation Status

(dollars in thousands)

	TEC, Design	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2015	4,000	16,000	20,000	2,500	NA	2,500	22,500

4. Project Description, Scope, and Justification

Mission Need

The mission need for the emergency operations capability is to provide a centralized, comprehensive emergency management system framework for the development, coordination, control and direction of emergency planning, preparedness, readiness assurance, responses and recovery actions. The current facility is not compliant with the DOE Order 151.1C "Comprehensive Emergency Management System." DOE Order 151.1C requires that the emergency operations center be capable of supporting continuous emergency operations for at least 14 days, survive design basis events, such as earthquakes, and be easily accessible.

[a] The schedules are only estimates and consistent with the high end of the schedule ranges.

Continued reliance on existing facilities limits the ability to respond quickly to high consequence events. Access and egress of existing facilities at LLNL is limited and requires emergency vehicles to drive through congested and gated areas.

Providing alternative emergency operations/response capabilities is consistent with both the DOE and National Nuclear Security Strategic Plans. In addition, the alternative capability will meet DOE Order 151.1C requirements by providing increased communication efficiency and event coordination, providing a habitable and sustainable working environment.

Scope and Justification

Scope

The scope will be established at the time the project CD-2 is approved. During the conceptual design phase, feasible options will be evaluated to ensure the space need is correctly sized to meet the sites critical mission needs.

However, the minimum capabilities based on DOE Order 151.1C, will be provided. Capabilities will include: a) responding effectively and efficiently to operational emergencies and energy emergencies, providing emergency assistance so that appropriate response measures are taken to protect workers, the public, the environment, and national security; b) recognizing and categorizing emergencies, as necessary; classifying emergencies promptly; and monitoring parameters associated with the emergency to detect changed or degraded conditions; c) reporting and notifying emergencies; and d) accomplishing re-entry activities properly and safely and commencing recovery and post-emergency activities properly.

Space will be provided for:
Emergency Operations Center/Emergency Command Center (EOC/ECC)
Emergency Response Dispatching and Emergency Communications
Emergency Alarm Monitoring Capabilities
Emergency Management Staffing;

Considerations will be given for survivability and habitability (continued use of facility during emergencies), sustainability, and ease access to the site for responders and managers.

Justification

The existing facility has the following limitations:

- Using “Temporary” locations and facilities with extremely limited workspace
- Facilities not designed or located to survive the high-consequence natural phenomena events, such as earthquakes, tornadoes, or floods.
- Downwind proximity of the buildings are all within the range of worst-case hazardous material releases analyzed in the Emergency Preparedness Hazard Assessment.
- Due to leak path factors, the facilities will not provide a significant barrier to hazardous material releases and not equipped with positive pressure filtration system, i.e. HEPA filtration for habitability.
- Lacks provision to sustain 24 hour operations for durations required by DOE Order 151.1C
- Access and egress limited, requires drive through site and emergency vehicle mobility through multiple gates
- Americans with Disabilities Act (ADA) noncompliant

Risk Description	Risk Handling
Changing security status and posture could impact project planning and execution.	Mitigate: The project will monitor security status during the planning and construction phases.
Continuing Resolution related funding issues may impact project execution throughout the life of the project funding cycle.	Mitigate. Continue to work with NNSA senior management to ensure funding requirements are met in time to support execution.
Changes in market/economic conditions (improvements) could exceed escalation allowances budgeted in the estimate.	Mitigate: Continually monitor market conditions and adjust as needed.

The project is being conducted in accordance with the project management requirements in DOE O 413.3B, Program and Project Management for the Acquisition of Capital Assets, and all appropriate project management requirements have been met.

5. Financial Schedule

(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2015	2,000	2,000	1,500
FY 2016	2,000	2,000	2,250
FY 2017	0	0	250
Total, Design	4,000	4,000	4,000
Construction			
FY 2017	16,000	16,000	8,000
FY 2018	0	0	6,000
FY 2019	0	0	2,000
Total, Construction	16,000	16,000	16,000
TEC			
FY 2015	2,000	2,000	1,500
FY 2016	2,000	2,000	2,250
FY 2017	16,000	16,000	8,250
FY 2018	0	0	6,000
FY 2019	0	0	2,000
Total, TEC	20,000	20,000	20,000
Other Project Cost (OPC)			
OPC except D&D			
FY 2013	200	200	200
FY 2014	600	600	600
FY 2015	200	200	200
FY 2016	500	500	500
FY 2017	500	500	500
FY 2018	300	300	300
FY 2019	200	200	200

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Total, OPC except D&D	2,500	2,500	2,500
D&D	0	0	0
Total, D&D	0	0	0
OPC			
FY 2013	200	200	200
FY 2014	600	600	600
FY 2015	200	200	200
FY 2016	500	500	500
FY 2017	500	500	500
FY 2018	300	300	300
FY 2019	200	200	200
Total, OPC	2,500	2, 500	2,500
Total Project Cost (TPC)			
FY 2013	200	200	200
FY 2014	600	600	600
FY 2015	2,200	2,200	1,700
FY 2016	2,500	2,500	2,750
FY 2017	16,500	16,500	8,750
FY 2018	300	300	6,300
FY 2019	200	200	2,200
Total, TPC	22,500	22,500	22,500

6. Details of Project Cost Estimate [a]

	(dollars in thousands)		
	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	3,300		NA
Contingency	700		NA
Total, Design	4,000		NA
Construction			
Site Work	500		NA
Equipment	1,500		NA
Construction	12,000		NA
Contingency	2,000		NA
Total, Construction	16,000		NA

(dollars in thousands)

[a] The numbers are only estimates and consistent with the high end of the cost ranges.

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total, TEC	20,000		NA
Contingency, TEC	2,700		NA
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	200		NA
Conceptual Design	800		NA
Start-Up	500		NA
Other OPC Costs	500		NA
Contingency	500		NA
Total, OPC except D&D	2,500		NA
Contingency OPC	500		NA
D&D			
D&D	NA		NA
Contingency	NA		NA
Total, D&D	NA		NA
Total, OPC	2,500		NA
Contingency, OPC	500		NA
Total, TPC	22,500		NA
Total, Contingency	3,200		NA

7. Schedule of Appropriation Requests

($K)

Request		Prior Years	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	Outyears	Total
FY 2015	TEC	0	0	2,000	2,000	16,000	0	0	0	20,000
	OPC	200	100	700	500	500	300	200	0	2,500
	TPC	200	100	2,700	2,500	16,500	300	200	0	22,500

8. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	2QFY 2020
Expected Useful Life (number of years)	30
Expected Future Start of D&D of this capital asset (fiscal quarter)	3QFY 2050

(Related Funding requirements)

(dollars in thousands)

	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	NA	NA	NA	NA
Utilities	NA	NA	NA	NA
Maintenance & Repair	NA	NA	NA	NA
Recapitalization	NA	NA	NA	NA
Total	NA	NA	NA	NA

9. Required D&D Information

Area	Square Feet
Area of new construction	NA
Area of existing facility(s) being replaced and D&D'ed by this project	NA
Area of other D&D outside the project	NA
Area of additional D&D space to meet the "one-for-one" requirement from the banked area	NA

10. Acquisition Approach

Design and construction contracts will be acquired through open competition; selection will be based on best value to the government and awards will be on firm-fixed price delivery. Acquisition management alternative will be performed during the conceptual design phase.

15-D-611, Emergency Operations Center
Sandia National Laboratories, New Mexico
Project is for Design and Construction

1. Summary and Significant Changes

The most recent DOE O 413.3B approved Critical Decision (CD) is Critical Decision 0, Approve Mission Need, approved on July 26, 2012, with a preliminary cost range of $45,000 to $75,000 for three Emergency Operations Centers (EOC) at Y-12, Lawrence Livermore National Laboratory, and Sandia National Laboratory (SNL) and CD-4 date range of 2nd Quarter of Fiscal Year (FY) 2018 and 2nd Quarter FY 2020. The TEC for this project remains at the rough order of magnitude (ROM) estimate of $40,000.

The project will utilize the design from the Los Alamos National Laboratory (LANL) Emergency Operations Center (EOC) Replacement Project, Line Item No. 01-D-702 completed in 2004 incorporating lessons learned. Prior to CD-0 approval for the SNL EOC project, various safety, emergency management, and emergency response subject matter experts verified that the LANL EOC design met all of the then current functional and operational requirements for compliance with all Department of Energy (DOE) and regulatory requirements in place in 2012. This approach will again be used to verify the design basis before release of a design/build contract that will be based on the LANL design. This approach is both expeditious and cost effective in obtaining this much needed capability at SNL.

A Federal Project Director has not been assigned; but will be upon CD-1 approval consistent with DOE O 413.3B.

This Project Data Sheet (PDS) includes a new start for the budget year.

This PDS is new.

2. Critical Decision (CD) and D&D Schedule[a]

(fiscal quarter or date)

	CD-0	CD-1	Design Complete	CD2[b]	CD 3[b]	CD-4	D&D Start	D&D Complete
FY 2015	07/26/2012	1Q FY 2015	4Q FY 2015	3Q FY 2015	3Q FY 2015	4Q FY 2019	1Q FY 2019	4Q FY 2019

CD-0 – Approve Mission Need
CD-1 – Approve Alternative Selection and Cost Range
CD-2 – Approve Performance Baseline
CD-3 – Approve Start of Construction
CD-4 – Approve Start of Operations or Project Closeout
D&D Start – Start of Demolition & Decontamination (D&D) work
D&D Complete –Completion of D&D work

3. Baseline and Validation Status

(dollars in thousands)

	TEC, Design	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2014	2,000	38,000	40,000	1,500	1,200	2,700	42,700

[a] The schedules are only estimates and consistent with the high end of the schedule ranges.
[b] CD-2/3 will be tailored for Design-Build Acquisition

4. Project Description, Scope, and Justification

Mission Need

The Emergency Operations Center (EOC) at SNL in Albuquerque, New Mexico will provide centralized, comprehensive emergency management capability for the development, coordination, control and direction of emergency planning, preparedness, readiness assurance, response and recovery actions. The current facility is not compliant with the DOE Order 151.1C "Comprehensive Emergency Management System." DOE Order 151.1C requires that the emergency operations/response centers be capable of supporting continuous emergency operations for at least 14 days, is able to survive design basis events, including earthquakes, and be easily accessible. The current SNL facilities fail to meet the vast majority of this order or other requirements.

Existing facilities limit SNL ability to respond quickly to high consequence events, and in some events would preclude an SNL emergency response, leaving the SNL emergency management and response personnel to shelter in place while other emergency resources attempted to respond to an SNL event. Access and egress of existing facilities is limited for both personnel and emergency vehicles and requires emergency vehicles to drive through congested and gated areas of the site.

Providing emergency operations, coordination, management, and response capabilities is required of SNL by their contract in order to meet DOE Order requirements as well as to comply with response plans developed jointly with Kirtland Air Force Base and the City of Albuquerque, NM. In some types of emergency scenarios SNL is the designated primary responsible responder. The SNL EOC project is consistent with DOE requirements, NNSA Strategic Plans and the NNSA Stockpile Stewardship Management Plan where the project is included in the Integrated Project List (IPL) as an NNSA priority.

Scope and Justification

Scope

The project would provide a single consolidated facility, with requisite parking for both personnel and response equipment, garaging for emergency response vehicles, computing, communications, building systems, and fuel and water storage sufficient to meet the following requirements as specified in DOE Orders.

Justification

Emergency Response Operations at SNL currently occupy three substandard facilities with additional personnel and equipment scattered throughout the New Mexico site due to the unavailability of space at these individual locations. The current EOC is housed in the basement of a facility built in 1949. This facility has never been retrofitted with the building systems, communications or other capabilities referenced above as requirements. Existing facilities only marginally meet requirements for habitability and space for required personnel and equipment. Emergency vehicles are parked outside in the elements requiring windows to be scraped of ice in winter before making an emergency response.

The EOC is located in a tightly constrained site in the densely populated SNL Technical Area (TA) I. Given the current location, several complications arise for the EOC. If a low probability/high impact event were to occur within TA-I the current EOC would be located within the affected area. Such an event could require that the EOC itself be evacuated due to insufficient habitability conditions. In a high probability/low impact scenario, the current EOC is hampered by limited access points both out of and into TA-I which would result in delayed response TAs-I, III, IV and V and the remote test areas. In both instances referenced, the level of response would be degraded by current location and conditions. Although SNL emergency response personnel have worked to address numerous shortfalls and gaps due to the quality and location of the current location, their efforts have potentially masked a situation that may compromise a response in the future.

The existing facilities have the following additional limitations:

- Using "Temporary" locations and facilities with extremely limited workspace
- Facilities not designed or located to survive the high-consequence natural phenomena events, such as earthquakes, tornadoes, or floods.
- Downwind proximity of the buildings means they are within the range of worst-case hazardous material releases analyzed in the hazards analysis.

- The facilities will not provide a significant barrier to hazardous material releases and are not equipped with positive pressure filtration system, i.e. HEPA filtration for habitability.
- Lack ability to sustain 24 hour operations for durations required by DOE Order 151.1C
- Access and egress limited, requires drive through site and emergency vehicle mobility through multiple gates
- Americans with Disabilities Act (ADA) non-compliant

The project is considered to be a minimum to low risk project, because SNL will be using the design and lessons learned from the Los Alamos National Laboratory EOC project. This approach should minimize project unknowns related to design and construction. The project will be sited in TA-2 of SNL which is well documented and lightly used previously which will mitigate site-related risks. A risk management plan will be developed during initial project planning. In addition, the NEPA for the construction effort was analyzed as part of the SNL Site-Wide Environmental Impact Statement which is currently in final review.

The project will be conducted in accordance with the project management requirements in DOE O 413.3B, Program and Project Management for the Acquisition of Capital Assets, and all appropriate project management requirements will be met.

5. Financial Schedule

(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2015	2,000	2,000	2,000
Total, Design	2,000	2,000	2,000
Construction			
FY 2015	2,000	2,000	1,000
FY 2016	4,000	4,000	5,000
FY 2017	16,000	16,000	13,000
FY 2018	16,000	16,000	16,000
FY 2019	0	0	3,000
Total, Construction	38,000	38,000	38,000
TEC			
FY 2015	4,000	4,000	3,000
FY 2016	4,000	4,000	5,000
FY 2017	16,000	16,000	13,000
FY 2018	16,000	16,000	16,000
FY 2019	0	0	3,000
Total, TEC	40,000	40,000	40,000
Other Project Cost (OPC)			
OPC except D&D			
FY 2014	400	400	400
FY 2015	200	200	200
FY 2016	200	200	200
FY 2017	200	200	200
FY 2018	200	200	200
FY 2019	300	300	300
Total, OPC except D&D	1,500	1,500	1,500
D&D			

	(dollars in thousands)		
	Appropriations	Obligations	Costs
FY 2019	1,200	1,200	1,200
Total, D&D	1,200	1,2 00	1,200
OPC			
FY 2014	400	400	400
FY 2015	200	200	200
FY 2016	200	200	200
FY 2017	200	200	200
FY 2018	200	200	200
FY 2019	1,500	1,500	1,500
Total, OPC	2,700	2,700	2,700
Total Project Cost (TPC)			
FY 2014	400	400	400
FY 2015	4,200	4,200	3,200
FY 2016	4,200	4,200	5,200
FY 2017	16,200	16,200	13,200
FY 2018	16,200	16,200	16,200
FY 2019	1,500	1,500	4,500
Total, TPC	42,700	42,700	42,700

6. Details of Project Cost Estimate

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	1,500	NA	NA
Contingency	500	NA	NA
Total, Design	2,000	NA	NA
Construction			
Site Work	4,900	NA	NA
Equipment	4,500	NA	NA
Construction	24,800	NA	NA
Contingency	3,800	NA	NA
Total, Construction	38,000	NA	NA
Total, TEC	40,000	NA	NA
Contingency, TEC	4,300	NA	NA
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	0	NA	NA
Conceptual Design	400	NA	NA
Start-Up	400	NA	NA
Other OPC Costs	400	NA	NA
Contingency	300	NA	NA
Total, OPC except D&D	1,500	NA	NA
D&D			
D&D	1,000	NA	NA
Contingency	200	NA	NA
Total, D&D	1,200	NA	NA
Total, OPC	2,700	NA	NA
Contingency, OPC	500	NA	NA
Total, TPC	42,700	NA	NA
Total, Contingency	4,800	NA	NA

7. Schedule of Appropriation Requests

($K)

Request		Prior Years	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	Outyears	Total
FY 2015	TEC	0	0	4,000	4,000	16,000	16,000	0	0	40,000
	OPC	0	400	200	200	200	200	1,500	0	2,700
	TPC	0	400	4,200	4,200	16,200	16,200	1,500	0	42,700

8. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	4QFY 2019
Expected Useful Life (number of years)	30
Expected Future Start of D&D of this capital asset (fiscal quarter)	4QFY 2049

(Related Funding requirements)

(dollars in thousands)

	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	NA	NA	NA	NA
Utilities	NA	NA	NA	NA
Maintenance & Repair	NA	NA	NA	NA
Recapitalization	NA	NA	NA	NA
Total	NA	NA	NA	NA

9. Required D&D Information

Area	Square Feet
Area of new construction	47,000
Area of existing facility(s) being replaced and D&D'ed by this project	8,000
Area of other D&D outside the project	NA
Area of additional D&D space to meet the "one-for-one" requirement from the banked area	39,000

Name(s) and site location(s) of existing facility(s) to be replaced:
803 in Technical Area I

10. Acquisition Approach

Design-Build tailored acquisition strategy will be utilized with a CD-2/3 approach. Design and construction contracts will be acquired through open competition; selection will be based on best value to the government and awards will be on firm-fixed price delivery.

15-D-302, TA-55 Reinvestment Project Phase (TRP) III
Los Alamos National Laboratory (LANL), Los Alamos, New Mexico
Project is for Design and Construction

1. Summary and Significant Changes

The most recent DOE O 413.3B approved Critical Decision (CD) for the overall project is CD-0 that was approved on March 23, 2005, with a pre-conceptual design Total Project Cost range of $125,000 to $195,000. Since the CD-0 approval, the project was split into three projects, TRP-I, TRP II and TRP III. TRP I and TRP II Phase A and B have been successfully completed. TRP II Phase C has completed design and is expected to receive CD-2/CD-3 in 3 Quarter (Q) of Fiscal Year (FY) 2014. The top range for the TRP III is estimated at $169,562 and the CD-4 is estimated to be completed in 4Q FY 2022. A CD-3A may be needed to procure long-lead equipment items. This will be determined upon CD-1 approval.

A Federal Project Director has not been assigned to this project, but one will be assigned upon CD-1 approval.

This Project Data Sheet (PDS) does include a new start for the budget year.

This PDS is new.

2. Critical Decision (CD) and D&D Schedule

(fiscal quarter or date[a])

	CD-0	CD-1	Design Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2015	03/23/2005	1QFY 2015	2Q FY 2018	4QFY 2017	2Q FY 2018	4Q FY 2022	NA	NA

CD-0 – Approve Mission Need
CD-1 – Approve Alternative Selection and Cost Range
CD-2 – Approve Performance Baseline
CD-3 – Approve Start of Construction
CD-4 – Approve Start of Operations or Project Closeout
D&D Start – Start of Demolition & Decontamination (D&D) work
D&D Complete –Completion of D&D work

(Fiscal Quarter or Date)

	CD-3A
FY 2017:	1Q FY 2017

CD-3A: Approve long-lead procurement activities.

3. Baseline and Validation Status

	TEC, Design	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2015	30,062	110,000	140,062	29,500	NA	29,500	169,562

[a] The schedules are only estimates and consistent with the high end of the schedule ranges

4. Project Description, Scope, and Justification

Mission Need

The Plutonium Faciltiy-4 (PF-4) within Technical Area (TA) 55 is a Hazard Category 2 nuclear facility. The mission need for the TRP III is driven by the fact that PF-4 proposed upgrades are planned in the only NNSA facility authorized to produce plutonium pits for the enduring stockpile. PF-4 has been in operation for over 35 years and, before the TRP I and TRP II upgrades, the infrastructure and systems were aging and approaching the end of their service life, required excessive maintenance, and experienced increased operating costs and reduced system reliability. And the facility is not in compliance with increases in safety and regulatory requirements are required for the fire protection systems, confinement ventilation, and fire water distribution.

TRP III is the final phase of the three-phase project that will upgrade PF-4 within the TA-55 boundary at LANL. TRP I replaced the cooling tower for the TA-55 and TRP II Phase A and B seismically strengthened two glove-boxes, replaced ovens, and confinement doors. TRP II Phase C will upgrade additional glove-boxes, relocate the Uninterruptible power supply to a safety class building and replace a number of criticality alarm systems.

Scope and Justification

TRP III addresses the balance of the 20 critical safety systems in TA-55 Plutonium Facility and implements Defense Nuclear Facilities Safety Board Recommendations that were approved as part of the mission need and not previously executed as part of TRP I and TRP II.

TRP III scope includes:

1. Replacing fire suppression systems, upgrading fire alarm panels, wiring and devices,
2. Upgrading active confinement ventilation; and
3. Removing TA-55 Office Buildings from the Fire Water Loop.

Risks

Risk Driver	Handling Strategy
Ongoing facility and program operations in PF-4 have the potential to impact TRP III execution	Mitigate: The project team will complete interface agreements with the facility and ensure TRP III work has been integrated with TA-55 Programmatic, Operations and Maintenance activities.
Changing requirements for nuclear safety, quality assurance and security status could impact project planning	Mitigate: The project will track requirement changes and will review any potential impacts with senior NNSA management through change control process.
Continuing Resolution related funding issues may impact project execution	Mitigate. Continue to work with NNSA senior management to ensure funding requirements are met in time to support TRP III execution.

The project is being conducted in accordance with the project management requirements in DOE O413.3B, Program and Project Management for the Acquisition of Capital Assets, and all appropriate project management requirements have been met.

Funds appropriated under this data sheet may be used for contracted support services to the Federal Project Director to conduct independent assessments of the planning and execution of this project required by DOE Order 413.3B and to conduct technical reviews of design and construction documents.

5. Financial Schedule

(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2015	16,062	16,062	6,000
FY 2016	14,000	14,000	18,062
FY 2017	0	0	4,000
FY 2018	0	0	2,000
Total, Design	30,062	30,062	30,062
Construction			
FY 2016	24,000	24,000	0
FY 2017	33,000	33,000	10,000
FY 2018	31,000	31,000	37,000
FY 2019	10,000	10,000	36,000
FY 2020	12,000	12,000	25,000
FY 2021	0	0	2,000
Total, Construction	110,000	110,000	110,000
TEC			
FY 2015	16,062	16,062	6,000
FY 2016	38,000	38,000	18,062
FY 2017	33,000	33,000	14,000
FY 2018	31,000	31,000	39,000
FY 2019	10,000	10,000	36,000
FY 2020	12,000	12,000	25,000
FY 2021	0	0	2,000
Total, TEC	140,062	140,062	140,062
Other Project Cost (OPC)			
OPC except D&D			
FY 2013	500	500	500
FY 2014	4,000	4,000	4,000
FY 2015	3,000	3,000	3,000
FY 2016	3,000	3,000	3,000
FY 2017	3,000	3,000	3,000
FY 2018	3,000	3,000	3,000

(dollars in thousands)	Appropriations	Obligations	Costs
FY 2019	6,000	6,000	6,000
FY 2020	4,000	4,000	4,000
FY 2021	2,000	2,000	2,000
FY 2022	1,000	1,000	1,000
Total, OPC except D&D	29,500	29,500	29,500
D&D			
FY 2015	NA	NA	NA
Total, D&D	NA	NA	NA
OPC			
FY 2013	500	500	500
FY 2014	4,000	4,000	4,000
FY 2015	3,000	3,000	3,000
FY 2016	3,000	3,000	3,000
FY 2017	3,000	3,000	3,000
FY 2018	3,000	3,000	3,000
FY 2019	6,000	6,000	6,000
FY 2020	4,000	4,000	4,000
FY 2021	2,000	2,000	2,000
FY 2022	1,000	1,000	1,000
Total, OPC except D&D	29,500	29,500	29,500
Total Project Cost (TPC)			
FY 2013	500	500	500
FY 2014	4,000	4,000	4,000
FY 2015	19,062	19,062	9,000
FY 2016	41,000	41,000	21,062
FY 2017	36,000	36,000	17,000
FY 2018	34,000	34,000	42,000
FY 2019	16,000	16,000	42,000
FY 2020	16,000	16,000	29,000
FY 2021	2,000	2,000	4,000
FY 2022	1,000	1,000	1,000
Total TPC	169,562	169,562	169,562

6. Details of Project Cost Estimate

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	23,562		NA
Federal Support	1,500		NA
Contingency	5,000		NA
Total, Design	30,062		NA
Construction			
Site Work	0		NA
Equipment	6,000		NA
Construction	83,000		NA
Federal Support	2,000		NA
Contingency	19,000		NA
Total, Construction	110,000		NA
			NA
Total, TEC	140,063		NA
Contingency, TEC	24,000		NA
			NA
Other Project Cost (OPC)			NA
			NA
OPC except D&D			NA
Conceptual Planning	2,000		NA
Conceptual Design	6,000		NA
Start-Up	10,000		NA
Project Support	2,000		NA
Contingency	9,500		NA
Total, OPC except D&D	29,500		NA
D&D			
D&D	NA		NA
Contingency	NA		NA
Total, D&D	NA		NA
Total, OPC	29,500		NA
Contingency, OPC	9,500		NA
			NA
Total, TPC	169,563		NA
Total, Contingency	33,500		NA

7. Schedule of Appropriation Requests

($K)

Request		Prior Years	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	Outyears	Total
FY 2015	TEC	0	0	16,062	38,000	33,000	31,000	10,000	12,000	140,062
	OPC	500	4,000	3,000	3,000	3,000	3,000	6,000	7,000	29,500
	TPC	500	4,000	19,062	41,000	36,000	34,000	16,000	19,000	169,562

8. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	NA
Expected Useful Life (number of years)	NA
Expected Future Start of D&D of this capital asset (fiscal quarter)	NA

(Related Funding requirements)

(dollars in thousands)

	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	NA	NA	NA	NA
Utilities	NA	NA	NA	NA
Maintenance & Repair	NA	NA	NA	NA
Total	NA	NA	NA	NA

9. Required D&D Information

Area	Square Feet
Area of new construction	NA
Area of existing facility(s) being replaced and D&D'd by this project	NA
Area of other D&D outside the project	NA
Area of additional D&D space to meet the "one-for-one" requirement from the banked area	NA

Name(s) and site location(s) of existing facility(s) to be replaced: NA

10. Acquisition Approach

Design and Construction Management will be implemented by Los Alamos National Security, LLC through the LANL Management and Operating Contract. The TRP III Acquisition Strategy is based on tailored procurement strategies in order to mitigate risks that are inherent in construction activities going on simultaneously with facility operations. The TRP III will be implemented via LANL-issued final design/construction contracts based on detailed performance requirements/specifications developed during the preliminary design phase.

15-D-301 High Explosive Science and Engineering Facility
Pantex Plant, Amarillo, TX
Project is for Design and Construction

1. Summary and Significant Changes

The most recent DOE O 413.3B approved Critical Decision (CD) is CD-0, Approve Mission Need, approved on November 22, 2011, with a preliminary cost range between $34,000 to $97,000 and CD-4 range between 4 Quarter (Q) Fiscal Year (FY) 2018 to 3Q FY 2020.

A Federal Project Director has not been assigned to this project, but one will be appointed upon CD-1 approval.

This Project Data Sheet (PDS) does include a new start for the budget year.

This PDS is new.

2. Critical Decision (CD) and D&D Schedule

(fiscal quarter or date[a])

	CD-0	CD-1	Design Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2015	11/22/2011	4QFY 2014	3QFY 2016	4QFY 2015	4QFY 2016	3QFY 2020	4QFY 2018	3QFY 2020

CD-0 – Approve Mission Need
CD-1 – Approve Alternative Selection and Cost Range
CD-2 – Approve Performance Baseline
CD-3 – Approve Start of Construction
CD-4 – Approve Start of Operations or Project Closeout
D&D Start – Start of Demolition & Decontamination (D&D) work
D&D Complete –Completion of D&D work

3. Baseline and Validation Status

(dollars in thousands[b])

	TEC, Design	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2015	11,800	60,500	72,300	6,100	18,600	24,700	97,000

4. Project Description, Scope, and Justification

Mission Need

The mission need for the High Explosive Science, Technology & Engineering (HE ST&E) is to maintain a capability based infrastructure to support weapons stockpile schedule commitments through HE manufacturing, surveillance, testing, Special Nuclear Material technology development, and waste operation oversight and management at the Pantex Plant.

[a] The schedules are only estimates and consistent with the high end of the schedule ranges.
[b] The numbers are only estimates and consistent with the high end of the cost ranges.

Scope and Justification

Construct a new HE facility up to 75,000 gross square feet to provide:

- Sufficient HE capacity to efficiently support laboratory operations, improve safety and HE ST&E functions for the HE Center of Excellence;
- Consolidation of HE technology capabilities/capacities into a single, right-sized HE ST&E facility which will result in cost avoidance over the 50 year life;
- Adequate classified computer systems for daily operations and capability to improve core surveillance activities, modeling and analysis in support of the Design Agency;
- Adequate and safe electrical systems to support modern and improved scientific analysis and testing equipment;
- Adequate and operational HVAC systems to maintain temperature and humidity in support of HE requirements and human comfort factors; and
- Leadership in Energy and Environmental Design (LEED) gold status required by Department of Energy Sustainability.

The FY 2011 Biennial plan for the ST&E base includes a milestone to "develop, implement, and apply a suite of physics-based models and high-fidelity databases to enable predictive simulation of the initial conditions for secondary performance." This capability does not currently exist at Pantex due to the fact that an environmentally controlled computer server area for cluster and super-fast computers, modeling workstations, or high-capacity data lines in order to perform high-fidelity physics based modeling is not available. Current facilities do not have the infrastructure to provide the cooling and power necessary to operate a high output computer based modeling system. This gap will be addressed as part of any selected HE ST&E solution.

The current HE ST&E personnel, as well as laboratory operations, are located in 15 separate facilities which are an average of 58 years old. They are not constructed for today's operations, HE limits, are spread out and do not provide for efficient work processes. Distance between facilities increases travel time for personnel and materials back and forth which add additional cost to operations. In addition, safety, security, and environmental issues associated with these aging facilities are mounting, as are the costs of addressing them.

Current HE capacity limits that prohibit quantities greater than a small amount create inefficient operations in several of the laboratories. HE limits mandate additional moves of HE to various facilities as well as to maintain safe separation limits. The HE capacity limitations are primarily due to the original design and structure of the old facilities. For example a current single-room facility layout requires the HE sampled to be containerized and moved out of the facility before opening, then removing the sample to perform the analysis. The numerous HE handling activities required to load, unload and move the HE increase potential safety hazards.

Detailed alternative analysis is being performed and the option with the optimum life cycle cost will be selected.

Risk Description	Risk Handling
Changing security status and posture could impact project planning and execution.	Mitigate: The project will monitor security status during the planning and construction phases.
Continuing Resolution related funding issues may impact project execution throughout the life of the project funding cycle.	Mitigate. Continue to work with NNSA senior management to ensure funding requirements are met in time to support execution.
Changes in Market/economic conditions (improvements) could exceed escalation allowances budgeted in the estimate.	Mitigate: Continually monitor market conditions and adjust as needed.

The project is being conducted in accordance with the project management requirements in DOE O 413.3B, Program and Project Management for the Acquisition of Capital Assets, and all appropriate project management requirements have been met. Construction work will be performed only after CD-3 approval.

5. Financial Schedule

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2015	11,800	11,800	5,750
FY 2016	0	0	3,250
FY 2017	0	0	2,800
Total, Design	11,800	11,800	11,800
Construction			
FY 2017	20,000	20,000	7,250
FY 2018	33,500	33,500	29,100
FY 2019	7,000	7,000	22,150
FY 2020	0	0	2,000
Total, Construction	60,500	60,500	60,500
TEC			
FY 2015	11,800	11,800	5,750
FY 2016	0	0	3,250
FY 2017	20,000	20,000	10,050
FY 2018	33,500	33,500	29,100
FY 2019	7,000	7,000	22,150
FY 2020	0	0	2,000
Total, TEC	72,300	72,300	72,300
Other Project Cost (OPC)			
OPC except D&D			
FY 2012	390	390	390
FY 2013	1,400	1,400	1,400
FY 2014	750	750	750
FY 2015	100	100	100
FY 2016	100	100	100
FY 2017	100	100	100
FY 2018	1,000	1,000	1,000
FY 2019	1,610	1,610	1,610
FY 2020	650	650	650
Total, OPC except D&D	6,100	6,100	6,100
D&D			
FY 2018	5,000	5,000	5,000
FY 2019	12,044	12,044	12,044
FY 2020	1,556	1,556	1,556
Total, D&D	18,600	18,600	18,600
OPC			
FY 2012	390	390	390
FY 2013	1,400	1,400	1,400
FY 2014	750	750	750
FY 2015	100	100	100
FY 2016	100	100	100

	(dollars in thousands)		
	Appropriations	Obligations	Costs
FY 2017	100	100	100
FY 2018	6,000	6,000	6,000
FY 2019	13,654	13,654	13,654
FY 2020	2,206	2,206	2,206
Total, OPC	24,700	24,700	24,700
Total Project Cost (TPC)			
FY 2012	390	390	390
FY 2013	1,400	1400	1400
FY 2014	750	750	750
FY 2015	11,900	11,900	5,850
FY 2016	100	100	3,350
FY 2017	20,100	20,100	10,150
FY 2018	39,500	39,500	35,100
FY 2019	20,654	20,654	35,804
FY 2020	2,206	2,206	4,206
Total, TPC	97,000	97,000	97,000

6. Details of Project Cost Estimate[a]

	(dollars in thousands)		
	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	9,000		NA
Federal Design Reviews-Support	500		NA
Contingency	2,300		NA
Total, Design	11,800		NA
Construction			
Site Work	5,000		NA
Equipment	5,000		NA
Construction	38,000		NA
Federal Project Review/Support	2,000		NA
Contingency	10,500		NA
Total, Construction	60,500		NA
Total, TEC	72,300		NA
Contingency, TEC	12,800		NA
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	390		NA
Conceptual Design	1,210		NA
Start-Up	3,000		NA
Other OPC Costs	400		NA
Contingency	1,100		NA
Total, OPC except D&D	6,100		NA
D&D			
D&D	15,044		NA
Contingency	3,556		NA
Total, D&D	18,600		NA
Total, OPC	24,700		NA
Contingency, OPC	4,656		NA
Total, TPC	97,000		NA
Total, Contingency	17,456		NA

[a] The numbers are only estimates and based on the high end of the cost ranges.

Request		Prior Years	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	Outyears	Total
FY 2015	TEC	0	0	11,800	0	20,000	33,500	7,000	0	72,300
	OPC	1,790	750	100	100	100	6,000	13,654	2,206	24,700
	TPC	1,790	750	11,900	100	20,100	39,500	20,654	2,206	97,000

8. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	NA
Expected Useful Life (number of years)	NA
Expected Future Start of D&D of this capital asset (fiscal quarter)	NA

(Related Funding requirements)

(dollars in thousands)

	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	NA	NA	NA	NA
Utilities	NA	NA	NA	NA
Maintenance & Repair	NA	NA	NA	NA
Total	NA	NA	NA	NA

9. Required D&D Information

Area	Square Feet
Area of new construction	74,000
Area of existing facility(s) being replaced and D&D'ed by this project	81,335
Area of other D&D outside of the project	0
Area of additional D&D space to meet the "one-for-one" requirement from the banked area	0

Name(s) and site location(s) of existing facility(s) to be replaced:
Zone 11, Bldgs 11-2, 11-5, 11-14, 11-16, 11-18, 11-19, 11-22, 11-27, 11-28, 11-29, 11-38, 11-45, 11-51, 12-2A, & 09-059. Additional buildings may be identified for demolition prior to performance baseline approval (CD-2).

10. Acquisition Approach

Both the design and construction will be acquired through firm-fixed price contracts. Design and construction management may be performed by the Management and Operating Contractor. Final determination will be made when the Acquisition Strategy is approved by the Program Secretarial Officer upon CD-1 approval.

12-D-301, Transuranic (TRU) Waste Facility,
Los Alamos National Laboratory (LANL), Los Alamos, New Mexico
Project is for Construction Only

1. Significant Changes

The most recent DOE O 413.3B approved Critical Decision (CD) for the overall project is CD-2, which was approved on February 28, 2013 with a Total Project Cost (TPC) of $106,864 and a CD-4 of 2 Quarter (Q) of Fiscal Year (FY) 2018.

12-D-301-01: Phase A, Site Development
The most recent DOE O 413.3B approved CD for Phase A, Site Development is CD-4, Approve Project Completion, which was approved on December 20, 2012.

12-D-301-02: Phase B, Staging and Characterization Facility
The most recent DOE O 413.3B approved CD for Phase B, Staging and Characterization Facility, is CD-2, Approve Performance Baseline, which was approved on February 28, 2013, to allow time for the project to address comments from the Defense Nuclear Facilities Safety Board received in June 2012, with TPC of $99,254 and CD-4 date of January 31, 2018. Additional engineered controls were found to be necessary to mitigate the potential impact of vehicles heavier than 10,000 pounds traveling along the major road next to the facility and to design a safety significant fire suppression system. The CD-3A was delayed to allow the federal project team to re-evaluate the most cost-effective procurement strategy to procure long-lead safety systems.

The Resource Conservation and Recovery Act (RCRA) Permit was received in December 2013 from State of New Mexico.

$2,000 from FY 2013 construction funding was transferred to 07-D-140-02 to complete the design of two additional critical safety systems identified above. Original FY 2013 Appropriation was $24,204. This was reduced by 1,938 due to the government wide sequestration and rescission. To maintain the approved baseline, the FY 2015 appropriation request is increased to $6,938 from $5,000 shown in the FY 2014 President's Budget Request.

A Federal Project Director has been assigned to this project.
This PDS does not include a new start for the budget year.
This is an update of the FY 2014 PDS.

2. Design, Construction, and D&D Schedule

(fiscal quarter or date)

	CD-0	CD-1	Design Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2012	02/07/2006	08/10/2010	TBD	TBD	TBD	TBD	N/A	N/A
FY 2013	02/07/2006	08/10/2010	6/15/2013	8/22/2012	08/23/2013	08/22/2017	N/A	N/A
FY 2014 PB	02/07/2006	08/10/2010	08/15/2014	02/28/2013	08/15/2014	01/31/2018	N/A	N/A
FY 2015	02/07/2006	08/10/2010	4Q FY 2014	02/28/2013	4Q FY 2014	2Q FY 2018	N/A	N/A

12-D-301-01: Phase A: Site Development

(fiscal quarter or date)

	CD-0	CD-1	Design Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2012	02/07/2006	08/10/2010	07/06/2011	03/09/2011	01/09/2012	02/01/2013	N/A	N/A
FY 2013 PB	02/07/2006	08/10/2010	09/30/2011	07/18/2011	02/24/2012	07/09/2013	N/A	N/A
FY 2014	02/07/2006	08/10/2010	09/30/2011	07/18/2011	02/13/2012	12/20/2012	N/A	N/A
FY 2015	02/07/2006	08/10/2010	09/30/2011	07/18/2011	02/13/2012	12/20/2012	N/A	N/A

12-D-301-02: Phase B: Staging and Characterization Facility

(fiscal quarter or date)

	CD-0	CD-1	Design Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2012	02/07/2006	08/10/2010	TBD	TBD	TBD	TBD	N/A	N/A
FY 2013	02/07/2006	08/10/2010	6/15/2013	8/22/2012	08/23/2013	08/22/2017	N/A	N/A
FY 2014 PB	02/07/2006	08/10/2010	8/15/2014	02/28/2013	08/15/2014	01/31/2018	N/A	N/A
FY 2015	02/07/2006	08/10/2010	4Q FY 2014	02/28/2013	4Q FY 2014	2Q FY 2018	N/A	N/A

CD-0 – Approve Mission Need
CD-1 – Approve Alternative Selection and Cost Range
CD-2 – Approve Performance Baseline
CD-3 – Approve Start of Construction
CD-4 – Approve Start of Operations or Project Closeout
D&D Start – Start of Demolition & Decontamination (D&D) work
D&D Complete – Completion of D&D work

(Fiscal Quarter or Date)

	CD-3A
FY 2014:	2Q FY 2014

CD-3A: Approve long-lead procurement activities for Phase B.

3. Baseline and Validation Status

(fiscal quarter or date)

	TEC, Design	TEC, Construction	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
FY 2012	18,193	TBD	TBD	TBD	TBD	TBD	71,000 – 124,000
FY 2013	18,183	65,807	83,990	10,000	N/A	10,000	93,990
FY 2014PB	18,183	65,807	83,990	22,911	N/A	22,911	106,901
FY 2015	20,183	63,807	83,990	22,874	N/A	22,874	106,864

12-D-301-01: Phase A: Infrastructure and Site Improvements

(fiscal quarter or date)

	TEC, Design	TEC, Construction	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
FY 2012	3,000	9,881	12,881	600	N/A	600	13,481
FY 2013 PB	3,136	5,636	8,772	440	N/A	440	9,212
FY 2014	2,359	5,137	7,496	114	N/A	114	7,610

12-D-301-02: Phase B: Staging and Characterization Facility

(fiscal quarter or date)

	TEC, Design	TEC, Construction	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
FY 2012	15,193	TBD	TBD	TBD	TBD	TBD	TBD
FY 2013	15,047	60,171	75,218	9,560	N/A	9,560	84,778
FY 2014 PB	15,911	60,495	76,406	22,760	N/A	22,760	99,166
FY 2015	17,824	58,670	76,494	22,760	N/A	22,760	99,254

4. Project Description, Justification, and Scope

The Department of Energy (DOE) signed an Order of Consent ("Consent Order") with the State of New Mexico, effective on March 1, 2005. The Consent Order requires DOE to complete a cleanup of the Los Alamos National Laboratory (LANL) by December 29, 2015. As part of the Consent Order, the State of New Mexico requires closure of four Material Disposal Areas (MDAs) in TA-54. The current set of Transuranic (TRU) waste storage and process facilities resides in MDA G. MDA G will undergo a phased closure, consistent with the Consent Order. It is not be feasible to keep the TRU facilities operational in the midst of Area G closure activities. Therefore, ongoing management of newly generated TRU waste must be reconstituted at a location outside of the closure boundaries. During closure of MDA G existing facilities and waste handling capabilities will be used on an interim basis for newly generated TRU waste until the replacement facilities become operational.

12-D-301-01: Phase A: Site Development Scope

The scope was limited to infrastructure development (such as construction of site utilities) to prepare the selected site for the construction of Phase B Staging and Characterization Facility. Construction of the Staging and Characterization Facility requires the site to obtain a modification to the LANL Resource Conservation and Recovery Act (RCRA) permit from the State of New Mexico Environmental Division. All Phase A scope was completed without a RCRA Permit. Phase A was completed ahead of the baseline schedule and under the baseline budget.

12-D-301-02: Phase B: Staging and Characterization Facility Scope

The scope involves the storage and operation support building facility construction and installation of equipment to store and characterize Defense Programs newly generated TRU waste prior to transport to the Waste Isolation Pilot Plant (WIPP) in Carlsbad, New Mexico. The capability provided by this facility is part of a comprehensive, long-term strategy to consolidate radioactive waste operations into a more compact area that can operate safely, securely, and effectively for the foreseeable future. The facility is currently designated as a hazard category 2 nuclear facility, seismic design category 2. The facility will be sized to stage/store up to 1,240 drum equivalent of waste. The facility's sizing reflects Defense Programs projected generation waste.

FY 2015 activities include continuation of Phase B construction.

Risks

Risk Driver	Handling Strategy
Improved construction market conditions could result in higher bids than the baseline estimate	Request for construction contract has been issued earlier than planned and results are expected in early march.

The project is being conducted in accordance with the project management requirements in DOE O 413.3B, Program and Project Management for the Acquisition of Capital Assets, and all appropriate project management requirements have been met.

Funds appropriated under this data sheet may be used for contracted support services to the Federal Project Director to conduct independent assessments of the planning and execution of this project required by DOE Order 413.3B and to conduct technical reviews of design and construction documents.

No construction funds for Phase B construction will be used without a CD-3, except to procure long lead equipment items and to prepare documents to procure construction subcontracts.

5. Financial Schedule

12-D-301-01, Phase A, Infrastructure

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED (07-D-140-02)			
FY 2008	2,272	2,272	0
FY 2009	0	0	0
FY 2010	0	0	0
FY 2011	87	87	2,359
Total, PED (07-D-140-02)	2,359	2,359	2,359
Construction			
FY 2012	5,137	5,137	3,818
FY 2013	0	0	1,319
Total, Construction	5,137	5,137	5,137
TEC			
FY 2008	2,272	2,272	0
FY 2009	0	0	0
FY 2010	0	0	0
FY 2011	87	87	2,359
FY 2012	5,137	5,137	3,818
FY 2013	0	0	1,319
Total, TEC	7,496	7,496	7,496
Other Project Cost (OPC)			
OPC except D&D			
FY 2012	50	50	50
FY 2013	64	64	64
Total, OPC except D&D	114	114	114
Total Project Cost (TPC)			
FY 2008	2,272	2,272	0
FY 2009	0	0	0
FY 2010	0	0	0
FY 2011	87	87	2,359
FY 2012	5,187	5,187	3,868
FY 2013	64	64	1,383
Total, TPC	7,610	7,610	7,610

12-D-301-02, Phase B Staging and Characterization Facility

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED (07-D-140-02)			
FY 2008	180	180	0
FY 2009	7,223	7,223	0
FY 2010	0	0	349
FY 2011	4,903	4,903	3,898
FY 2012	3,518	3,518	7,261
FY 2013	2,000	2,000	3,883
FY 2014	0	0	2,433
Total, PED (07-D-140-02)	17,824	17,824	17,824
Construction			
FY 2012	4,744	4,744	0
FY 2013	20,266	20,266	179
FY 2014	26,722	26,722	3,000
FY 2015	6,938	6,938	38,175
FY 2016	0	0	17,316
Total, Construction	58,670	58,670	58,670
TEC			
FY 2008	180	180	0
FY 2009	7223	7223	0
FY 2010	0	0	349
FY 2011	4903	4903	3898
FY 2012	8,262	8,262	7,261
FY 2013	22,266	22,266	4,062
FY 2014	26,722	26,722	5,433
FY 2015	6,938	6,938	38,175
FY 2016	0	0	17,316
Total, TEC	76,494	76,494	76,494
Other Project Cost (OPC)			
OPC except D&D			
FY 2006	806	806	806
FY 2007	1,883	1,883	1,883
FY 2008	993	993	993
FY 2009	357	357	357
FY 2010	1,829	1,829	1,829
FY 2011	1,510	1,510	1,510
FY 2012	1,289	1,289	1,289
FY 2013	2,896	2,896	2,896
FY 2014	3,593	3,593	3,593
FY 2015	3,580	3,580	3,580
FY 2016	3,322	3,322	3,322
FY 2017	702	702	702
Total, OPC except D&D	22,760	22,760	22,760

(dollars in thousands)	Appropriations	Obligations	Costs
Total Project Cost (TPC)			
FY 2006	806	806	806
FY 2007	1,883	1,883	1,883
FY 2008	1,173	1,173	993
FY 2009	7,580	7,580	357
FY 2010	1,829	1,829	2,178
FY 2011	6,413	6,413	5,408
FY 2012	9,551	9,551	8,550
FY 2013	25,162	25,162	6,958
FY 2014	30,315	30,315	9,026
FY 2015	10,518	10,518	41,755
FY 2016	3,322	3,322	20,638
FY 2017	702	702	702
Total, TPC	99,254	99,254	99,254

Total Project

(dollars in thousands)	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED (07-D-140-02)			
FY 2008	2,452	2,452	0
FY 2009	7,223	7,223	0
FY 2010	0	0	349
FY 2011	4,990	4,990	6,257
FY 2012	3,518	3,518	7,261
FY 2013	2,000	2,000	3,883
FY 2014	0	0	2,433
Total, PED (07-D-140-02)	20,183	20,183	20,183
Construction			
FY 2012	9,881	9,881	3,818
FY 2013	20,266	20,266	1,498
FY 2014	26,722	26,722	3,000
FY 2015	6,938	6,938	38,175
FY 2016	0	0	17,316
Total, Construction	63,807	63,807	63,807
TEC			
FY 2008	2,452	2,452	0
FY 2009	7,223	7,223	0
FY 2010	0	0	349
FY 2011	4,990	4,990	6,257
FY 2012	13,399	13,399	11,079
FY 2013	22,266	22,266	5,381
FY 2014	26,722	26,722	5,433
FY 2015	6,938	6,938	38,175
FY 2016	0	0	17,316
Total, TEC	83,990	83,990	83,990

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Other Project Cost (OPC)			
OPC except D&D			
FY 2006	806	806	806
FY 2007	1,883	1,883	1,883
FY 2008	993	993	993
FY 2009	357	357	357
FY 2010	1,829	1,829	1,829
FY 2011	1,510	1,510	1,510
FY 2012	1,339	1,339	1,339
FY 2013	2,960	2,960	2,960
FY 2014	3,593	3,593	3,593
FY 2015	3,580	3,580	3,580
FY 2016	3,322	3,322	3,322
FY 2017	702	702	702
Total, OPC except D&D	22,874	22,874	22,874
Total Project Cost (TPC)			
FY 2006	806	806	806
FY 2007	1883	1883	1883
FY 2008	3,445	3,445	993
FY 2009	7,580	7,580	357
FY 2010	1,829	1,829	2,178
FY 2011	6,500	6,500	7,767
FY 2012	14,738	14,738	12,418
FY 2013	25,226	25,226	8,341
FY 2014	30,315	30,315	9,026
FY 2015	10,518	10,518	41,755
FY 2016	3,322	3,322	20,638
FY 2017	702	702	702
Total, TPC	106,864	106,864	106,864

6. Details of Cost Estimate

12-D-301-01 Phase A, Infrastructure

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED) (07-D-140-02)			
Design	2,272	2,967	2,967
Contingency	0	169	169
Total, PED	2,272	3,136	3,136
Construction			
Site Preparation	5,137	4,392	4,392
Other Construction	0	0	0
Contingency	0	1,245	1,245
Total, Construction	5,137	5,637	5,637
Total, TEC	7,496	8,773	8,773
Contingency, TEC	0	1,414	1,414
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Design[a]	0	0	0
Project Support	50	66	66
Start-up	64	119	119
Contingency	0	255	255
Total, OPC except D&D	114	440	440
D&D			
D&D	N/A	N/A	N/A
Contingency	N/A	N/A	N/A
Total, D&D	N/A	N/A	N/A
Total, OPC	114	440	440
Contingency, OPC	0	255	255
Total, TPC	7,610	9,213	9,213
Total, Contingency	0	1,669	1,669

[a] Conceptual Design is funded under Phase B.

12-D-301-02, Phase B; Staging and Characterization Facility

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED) (07-D-140-02)			
Design	16,612	14,699	14,699
Contingency	1,212	1,212	1,212
Total, PED	17,824	15,911	15,911
Construction			
Site Preparation	0	0	0
Equipment	4,337	4,337	4,337
Other Construction	37,315	34,758	34,758
Federal Project Support	2,000	2,000	2,000
Contingency	15,018	19,904	19,904
Total, Construction	58,670	60,495	60,495
Total, TEC	76,494	76,406	76,406
Contingency, TEC	16,230	20,613	20,613
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	3,005	3,005	3,005
Conceptual Design	2,857	2,857	2,857
Project Support	5,494	5,494	5,494
Start-up	8,194	8,194	8,194
Contingency	3,210	3,210	3,210
Total, OPC except D&D	22,760	22,760	22,760
D&D			
D&D	N/A	N/A	N/A
Contingency	N/A	N/A	N/A
Total, D&D	N/A	N/A	N/A
Total, OPC	22,760	22,760	22,760
Contingency, OPC	3,210	3,210	3,210
Total, TPC	99,254	96,166	96,166
Total, Contingency	19,440	23,823	23,823

Total Project

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED) (07-D-140-02)			
Design	18,971	16,971	16,971
Contingency	1,212	1,212	1,212
Total, PED	20,183	18,183	18,183
Construction			
Site Preparation	5,137	5,311	5,311
Equipment	4,337	4,337	4,337
Other Construction	37,315	34,758	34,758
Federal Project Support	2,000	2,000	2,000
Contingency	15,018	19,401	19,401
Total, Construction	63,807	65,807	65,807
Total, TEC	83,990	83,990	83,990
Contingency, TEC	16,230	20,613	20,613
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	3,005	3,005	3,005
Conceptual Design	2,857	2,857	2,857
Project Support	5,544	5,544	5,544
Start-up	8,258	8,295	8,295
Contingency	3,210	3,211	3,211
Total, OPC except D&D	22,874	22,911	22,911
D&D			
D&D	N/A	N/A	N/A
Contingency	N/A	N/A	N/A
Total, D&D	N/A	N/A	N/A
Total, OPC	22,874	22,911	22,911
Contingency, OPC	3,210	3,211	3,211
Total, TPC	106,864	107,825	107,825
Total, Contingency	19,440	24,938	24,938

7. Schedule of Appropriation Requests

(dollars in thousands)

		Prior Years	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Outyears	Total
FY 2012	TEC	14,675	13,399	12,349	71,151	12,426	TBD	TBD	TBD	TBD
	OPC	8,118	942	1,867	TBD	TBD	TBD	TBD	TBD	TBD
	TPC	22,793	14,341	14,216	TBD	TBD	TBD	TBD	TBD	TBD
FY 2013	TEC	14,665	13,399	24,204	31,722	0	0	0	0	83,990
	OPC	8,118	942	100	100	740	0	0	0	10,000
	TPC	22,783	14,341	24,304	31,822	740	0	0	0	93,990
FY 2014 Total Project	TEC	14,665	13,399	24,204	26,722	5,000	0	0	0	83,990
	OPC	7,378	1,339	2,997	3,593	3,580	3,322	702	0	22,911
	TPC	22,043	14,738	27,201	30,315	8,580	3,322	702	0	106,901
FY 2014 Phase A	TEC	2,272	5,312	0	0	0	0	0	0	7,584
	OPC	0	50	101	0	0	0	0	0	151
	TPC	2,272	5,362	101	0	0	0	0	0	7,735
FY 2014 Phase B	TEC	12,393	8,087	24,204	26,722	5,000	0	0	0	76,406
	OPC	7,378	1,289	2,896	3,593	3,580	3,322	702	0	22,760
	TPC	19,771	9,376	27,100	30,315	8,580	3,322	702	0	99,166
FY 2015 Phase A	TEC	2,359	5,137	0	0	0	0	0	0	7,496
	OPC	0	50	64	0	0	0	0	0	114
	TPC	2,359	5,137	64	0	0	0	0	0	7,610
FY 2015 Phase B	TEC	12,306	8,262	22,266	26,722	6,938	0	0	0	76,494
	OPC	7,378	1,289	2,896	3,593	3,580	3,322	702	0	22,760
	TPC	19,684	9,551	25,162	30,315	10,518	3,322	702	0	99,254
FY 2015 Total Project	TEC	14,665	13,399	22,266	26,722	6,938	0	0	0	83,990
	OPC	7,378	1,339	2,960	3,593	3,580	3,322	702	0	22,874
	TPC	22,043	14,738	25,226	30,315	10,518	3,322	702	0	106,864

8. Related Operations and Maintenance Funding Requirements

Start of Operation of Beneficial Occupancy (fiscal quarter or date)	2Q FY 2018
Expected Useful Life (number of years)	50
Expected Future Start of D&D of this capital asset (fiscal quarter)	FY 2068

(Related Funding Requirements)

(dollars in thousands)

	Annual Current Total Estimate	Previous Total Estimate	Life-Cycle Cost Current Total Estimate	Previous Total Estimate
Operations	4,000	4,000	200,000	200,000
Maintenance	2,000	2,000	100,000	100,000
Total, Operations and Maintenance	6,000	6,000	300,000	300,000

9. Required D&D Information

Area	Square Feet
Area of new construction……………………………………………………………………………………………	29,500
Area of existing facility(ies) being replaced and D&D'ed by this project………………………………	0
Area of other D&D outside the project……………………………………………………………………………	550,698
Area of additional D&D space to meet the "one-for-one" requirement taken from the banked area………………………………………………………………………………………………………	None

Name(s) and site location(s) of existing facility(s) to be replaced: TA-54 Disposal Area G. Cost for the D&D of TA-54 is not the responsibility of the National Nuclear Security Administration and will be paid by the Office of Environmental Management (EM) Program. Area G cost will be part of the EM budget and responsibility.

10. Acquisition Approach

The project will be executed in two phases. Phase A will provide Site Development for Phase B Facility. Both Phases will be executed through firm-fixed price design-bid-build contracts. The Management and Operating partner will provide project, design, and construction management oversight; procure the design and construction services; and perform transition to operations activities. Phase B will provide the Facility for the new TRU waste operations.

11-D-801, TA-55 Reinvestment Project – Phase II (TRP II)
Los Alamos National Laboratory (LANL), Los Alamos, New Mexico
Project is for Design and Construction

1. Significant Changes

The most recent DOE O 413.3B approved Critical Decision (CD) for the combined three phases of TRP II was CD-1, Approve Alternative Selection and Cost Range that was approved on July 15, 2008, with a preliminary cost range of $75,400 to $99,900 and a preliminary CD-4 of FY 2016. Subsequent to CD-1 approval, TRP II was split into three phases with each pursuing CD-2 through CD-4 separately.

Latest approved Baseline Change was on November 18, 2011 with a preliminary cost of $99,900 and CD-4 of FY 2017.

11-D-801-01 Phase A: Glovebox #1 and Air Dryers
The most recent DOE O 413.3B approved CD is CD-4 for Phase A, which was approved on May 29, 2013 with a Total Project Cost (TPC) of $13,304, below baseline cost.

11-D-801-02 Phase B: Glovebox #2 and Confinement Doors
The most recent DOE O 413.3B approved CD is CD-4 for Phase B, which was approved on September 12, 2013, with TPC of $9,016, below baseline cost.

11-D-801-03 Phase C: Glovebox #3, Exhaust Stack, UPS, Criticality Alarm System, Vault Water Tanks, and PF-7Demolition
The most recent DOE O 413.3B approved CD is CD-1, Approve Alternative Selection and Cost Range, which was approved on July 15, 2008 with a TPC not to exceed the overall project's preliminary cost range of $99,900. A performance baseline/approve start of construction (CD-2/3) is in planned for the third quarter of FY 2014. The most current TPC estimate for the overall project is $109,191 including $3,000 for federal support due to changes in contractor's cost model and the need to protect the glove-boxes from being impacted during a design-basis seismic event by other connected systems by potentially adding flexible pieces at the glove-boxes and connected systems interface. An Independent Project Review was conducted by the NNSA Office of Acquisition and Project Management in December 2013 that validated the cost increase.

A Federal Project Director at the appropriate level has been assigned to this project.

This PDS does not include New Start for the budget year.

This is an update of the FY 2014 PDS.

2. Design, Construction, and D&D Schedule

(fiscal quarter or date)

	CD-0	CD-1	Design Complete[a]	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2011	03/23/2005	7/15/2008	3QFY2012	TBD	TBD	TBD	N/A	N/A
FY 2012	03/23/2005	7/15/2008	3QFY2012	TBD	TBD	TBD	N/A	N/A
FY 2013	03/23/2005	7/15/2008	3QFY2012	4Q FY 2012	1Q FY 2014	4Q FY 2017	1Q FY 2017	4Q FY 2017
FY 2014	03/23/2005	7/15/2008	2QFY2014	2Q FY 2014	2Q FY 2014	4Q FY 2017	1Q FY 2017	4Q FY 2017
FY 2015	03/23/2005	7/15/2008	2QFY2014	3Q FY 2014	3Q FY 2014	4Q FY 2017	1Q FY 2017	4Q FY 2017

[a] PED funds are used only for the preliminary design. Final design is performed with construction funds.

11-D-801-01 Phase A: Glovebox #1 and Air Dryers

(fiscal quarter or date)

	CD-0	CD-1	PED Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2011	03/23/2005	07/15/2008	3QFY2012	11/24/2009	1QFY2010	3QFY2013	N/A	N/A
FY 2012	03/23/2005	07/15/2008	2QFY2011	11/24/2009	1QFY2011	3QFY2013	N/A	N/A
FY 2013	03/23/2005	07/15/2008	1QFY 2011	11/24/2009	11/28/2011	4QFY2013	N/A	N/A
FY 2014	03/23/2005	07/15/2008	11/22/2011	11/24/2009	11/22/2011	4QFY2013	N/A	N/A
FY 2015	03/23/2005	07/15/2008	11/22/2011	11/24/2009	11/22/2011	5/29/2013	N/A	N/A

11-D-801-02 Phase B: Glovebox 2 and Confinement Doors

(fiscal quarter or date)

	CD-0	CD-1	Design Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2011	03/23/2005	07/15/2008	3QFY2012	3QFY2010	TBD	TBD	N/A	N/A
FY 2012 PB	03/23/2005	07/15/2008	4QFY2011	06/03/2010	4QFY2011	2QFY2014	N/A	N/A
FY 2013	03/23/2005	07/15/2008	1QFY 2011	06/03/2010	2QFY2012	1QFY2014	N/A	N/A
FY 2014	03/23/2005	07/15/2008	02/13/2012	06/03/2010	02/13/2012	1QFY2014	N/A	N/A
FY 2015	03/23/2005	07/15/2008	02/13/2012	06/03/2010	02/13/2012	9/12/2013	N/A	N/A

11-D-801-03 Phase C: Glovebox 3, Exhaust Stack, UPS, Criticality Alarm System, Vault Water Tanks, and PF-7Demolition[a]

(fiscal quarter or date)

	CD-0	CD-1	Design Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2011	03/23/2005	07/15/2008	3QFY2012	3QFY2011	TBD	TBD	N/A	N/A
FY 2012	03/23/2005	07/15/2008	3QFY2012	3QFY2011	TBD	TBD	N/A	N/A
FY 2013	03/23/2005	07/15/2008	3QFY2012	4QFY2012	1QFY2014	4QFY2017	1Q FY 2017	4Q FY 2017
FY 2014	03/23/2005	7/15/2008	2QFY2014	2Q FY 2014	2Q FY 2014	4Q FY 2017	1Q FY 2017	4Q FY 2017
FY 2015	03/23/2005	7/15/2008	2QFY2014	3Q FY 2014	3Q FY 2014	4Q FY 2017	1Q FY 2017	4Q FY 2017

CD-0 – Approve Mission Need
CD-1 – Approve Alternative Selection and Cost Range
CD-2 – Approve Performance Baseline
CD-3 – Approve Start of Construction
CD-4 – Approve Start of Operations or Project Closeout
D&D Start – Start of Demolition & Decontamination (D&D) work
D&D Complete – Completion of D&D work

[a] The schedule for Phase C is only an estimate and consistent with the high end of the schedule ranges.

3. Baseline and Validation Status

(dollars in thousands)

	PED Design	TEC, Design	TEC, Construction	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
FY 2011	13,684	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2012	14,684	12,700	56,715	84,099	15,477	N/A	15,477	99,576
FY 2013	14,745	6,664	62,864	84,273	15,627	N/A	15,627	99,900
FY 2014	14,745	9,142	60,386	84,273	15,199	428	15,627	99,900
FY 2015	14,745	9,142	69,674	93,561	14,764	866	15,630	109,191

11-D-801-01 Phase A: Glovebox #1 and Air Dryers

(dollars in thousands)

	PED Design	TEC, Design	TEC, Construction	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
FY 2011	3,700	TBD	15,330	19,030	440	N/A	440	19,470
FY 2012	4,289	1,848	12,448	18,585	443	N/A	443	19,028
FY 2013	2,890	1,176	9,093	13,159	495	N/A	495	13,654
FY 2014	2,890	568	9,701	13,159	495	N/A	495	13,654
FY 2015	2,890	568	9,351	12,809	495	N/A	495	13,304

11-D-801-02 Phase B: Glovebox 2 and Confinement Doors

(dollars in thousands)

	PED Design	TEC, Design	TEC, Construction	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
FY 2012	5,069	854	11,041	16,964	621	N/A	621	17,585
FY 2013	3,348	67	7,119	10,534	704	N/A	704	11,238
FY 2014	3,348	167	7,019	10,534	704	N/A	704	11,238
FY 2015	3,348	167	4,797	8,312	704	N/A	704	9,016

11-D-801-03 Phase C: Glovebox 3, Exhaust Stack, UPS, Criticality Alarm System, Vault Water Tanks, and PF-7 Demolition[a]

(dollars in thousands)

	PED Design	TEC, Design	TEC, Construction	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
FY 2012	5,326	9,998	33,226	43,224	14,413	N/A	14,413	62,963
FY 2013	8,507	5,421	46,652	60,580	14,000	428	14,428	75,008
FY 2014	8,507	8,407	43,666	60,580	14,000	428	14,428	75,008
FY 2015	8,507	8,407	55,526	72,440	13,565	866	14,431	86,871

4. Project Description, Justification, and Scope

The LANL Plutonium Facility (PF-4) major facility and infrastructure systems are aging and approaching the end of their service life, and, as a consequence, are beginning to require excessive maintenance. As a result, the facility is experiencing increased operating costs and reduced system reliability. Compliance with increases in safety and regulatory requirements is critical to mission essential operations, and thus becoming more costly and cumbersome to maintain due to the physical conditions of facility support systems and equipment.

This project will enhance safety and enable cost effective operations so that the facility can continue to support critical Defense Programs missions and activities. LANL identified 20 potential subprojects at the pre-conceptual stage for

[a] The numbers are only estimates and consistent with the high end of the cost ranges.

upgrades and modernization. The subprojects were selected utilizing a risk-based prioritization process that considered the current condition of the equipment, risk of failure to the worker, the environment, and the public, and risk of failure to programmatic and facility operations. To meet mission need objectives within an operating nuclear facility, the TRP project is being executed as three separate, distinct capital line item projects, TRP I, TRP II, and TRP III.

TRP II Overall Scope: Consists of seven (7) subprojects to be completed in three phases:
1. Replacement of Uninterruptible Power Supply
2. Refurbishment of Air Dryers
3. Replacement of Confinement Doors
4. Replacement of Criticality Alarms
5. Vault Water Tank Cooling System Upgrades
6. Replacement/Refurbishment of Glovebox Stands (Seismic)
7. Upgrade Exhaust Stack Sampling System

Phase A: Glovebox Stand 1 and Air Dryers:
Air Dryers – Refurbish of Air Dryers.
Glovebox Stands Group 1 – Seismically upgrade the GB #1 stand.

Phase B: Glovebox Stand 2 and Confinement Doors:
Glovebox Stands Group 2 – Seismically upgrade the GB #2 stand.
Replace existing PF-4 confinement doors.

Phase C: Glovebox Stand 3, Exhaust Stack, UPS, Criticality Alarm System, Vault Water Tanks, and PF-7 Demolition
Glovebox Stands Group 3 – Seismically upgrade the GB #3 stands.
Upgrade the sampling system for existing PF-4 exhaust stacks.
PF-7 demolition to prepare for uninterruptable power supply installation.
Replace existing Uninterruptible Power Supply.
Upgrade Pu-238 vault water tanks cooling system.
Replace existing Criticality Alarm detectors and circuits in the PF-4.

Risks

Risk Driver	Handling Strategy
Ongoing facility and program operations in PF-4 have the potential to impact TRP II execution	Mitigate: Mitigate: The project team completed interface agreements with the facility and ensure TRP II work has been integrated with TA-55 Programmatic, Operations and Maintenance activities
Changing requirements for nuclear safety, quality assurance and security status could impact project planning	Mitigate: The project will track requirement changes and will review any potential impacts with senior NNSA management through change control process.
Continuing Resolution related funding issues may impact project execution	Mitigate. Continue to work with NNSA senior management to ensure funding requirements are met in time to support TRP II execution.

The project is being conducted in accordance with the project management requirements in DOE O413.3B, Program and Project Management for the Acquisition of Capital Assets, and all appropriate project management requirements have been met.

Funds appropriated under this data sheet may be used to provide independent assessments of the planning and execution of this line item project.

5. Financial Schedule

11-D-801-01 Phase A: Glovebox #1 and Air Dryers

(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED (06-D-140-02)			
FY 2008	1,500	1,500	24
FY 2009	1,390	1,390	500
FY 2010	0	0	1,366
FY 2011	0	0	1,000
Total, PED (06-D-140-02)	2,890	2,890	2,890
Final Design (11-D-801)			
FY 2011	568	568	171
FY 2012	0	0	397
Total, Final Design (11-D-801)	568	568	568
Total, Design	3,458	3,458	3,458
Construction			
FY 2011	9,351	9,351	0
FY 2012	0	0	6,835
FY 2013	0	0	2,516
Total, Construction	9,351	9,351	9,351
TEC			
FY 2008	1,500	1,500	24
FY 2009	1,390	1,390	500
FY 2010	0	0	1,366
FY 2011	9,919	9,919	1,171
FY 2012	0	0	7,232
FY 2013	0	0	2,516
Total, TEC	12,809	12,809	12,809

(dollars in thousands)	Appropriations	Obligations	Costs
Other Project Cost (OPC)			
OPC except D&D			
FY 2008	10	10	10
FY 2009	40	40	40
FY 2010	50	50	50
FY 2011	50	50	50
FY 2012	45	45	45
FY 2013	300	300	300
Total, OPC except D&D	495	495	495
Total Project Cost (TPC)			
FY 2008	1,510	1,510	34
FY 2009	1,430	1,430	540
FY 2010	50	50	1,416
FY 2011	9,969	9,969	1,221
FY 2012	45	45	7,277
FY 2013	300	300	2,816
Total, TPC	13,304	13,304	13,304

11-D-801-02 Phase B: Glovebox 2 and Confinement Doors

(dollars in thousands)	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED (06-D-140-02)			
FY 2009	3,348	3,348	500
FY 2010	0	0	500
FY 2011	0	0	2,348
Total, PED (06-D-140-02)	3,348	3,348	3,348
Final Design (11-D-801)			
FY 2011	167	167	0
FY 2012	0	0	167
Total, Final Design	167	167	167
Total, Design	3,515	3,515	3,515

(dollars in thousands)	Appropriations	Obligations	Costs
Construction			
FY 2011	4,797	4,797	0
FY 2012	0	0	1,150
FY 2013	0	0	3,647
Total, Construction	4,797	4,797	4,797
TEC			
FY 2009	3,348	3,348	500
FY 2010	0	0	500
FY 2011	4,964	4,964	2,348
FY 2012	0	0	1,317
FY 2013	0	0	3,647
Total, TEC	8,312	8,312	8,312
Other Project Cost (OPC)			
OPC except D&D			
FY 2008	10	10	10
FY 2009	40	40	40
FY 2010	50	50	50
FY 2011	50	50	50
FY 2012	50	50	50
FY 2013	300	300	300
FY 2014	204	204	204
Total, OPC except D&D	704	704	704
Total Project Cost (TPC)			
FY 2008	10	10	10
FY 2009	3,388	3,388	540
FY 2010	50	50	550
FY 2011	5,014	5,014	2,398
FY 2012	50	50	1,367
FY 2013	300	300	3,947
FY 2014	204	204	204
Total, TPC	9,016	9,016	9,016

11-D-801-03 Phase C: Glovebox 3, Exhaust Stack, UPS, Criticality Alarm System, Vault Water Tanks, and PF-7 Demolition

(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED (06-D-140-02)			
FY 2009	3,507	3,507	2,468
FY 2010	5,000	5,000	4,118
FY 2011	0	0	1,630
FY 2012	0	0	149
FY 2013	0	0	0
FY 2014	0	0	142
Total, PED (06-D-140-02)	8,507	8,507	8,507
Final Design (11-D-801)			
FY 2011	2,505	2,505	0
FY 2012	5,902	5,902	395
FY 2013	0	0	5,242
FY 2014	0	0	2,770
Total, Final Design	8,407	8,407	8,407
Total, Design	16,914	16,914	16,914
Construction			
FY 2011	2,572	2,572	0
FY 2012	4,098	4,098	0
FY 2013	8,177	8,177	0
FY 2014	30,679	30,679	13,663
FY 2015	10,000	10,000	32,575
FY 2016	0	0	9,288
Total, Construction	55,526	55,526	55,526
TEC			
FY 2009	3,507	3,507	2,468
FY 2010	5,000	5,000	4,118
FY 2011	5,077	5,077	1,630
FY 2012	10,000	10,000	544
FY 2013	8,177	8,177	5,242
FY 2014	30,679	30,679	13,805
FY 2015	10,000	10,000	32,575
FY 2016	0	0	9,288
Total, TEC	72,440	72,440	72,440

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Other Project Cost (OPC)			
OPC except D&D			
FY 2005	854	854	854
FY 2006	1,919	1,919	1,919
FY 2007	980	980	980
FY 2008	1,323	1,323	1,323
FY 2009	10	10	10
FY 2010	219	219	219
FY 2011	1,762	1,762	1,762
FY 2012	1,178	1,178	1,178
FY 2013	500	500	500
FY 2014	1,579	1,579	1,579
FY 2015	2,125	2,125	2,125
FY 2016	1,000	1,000	1,000
FY 2017	116	116	116
Total, OPC except D&D	13,565	13,565	13,565
D&D			
FY 2017	866	866	866
Total, D&D	866	866	866
OPC			
FY 2005	854	854	854
FY 2006	1,919	1,919	1,919
FY 2007	980	980	980
FY 2008	1,323	1,323	1,323
FY 2009	10	10	10
FY 2010	219	219	219
FY 2011	1,762	1,762	1,762
FY 2012	1,178	1,178	1,178
FY 2013	500	500	500
FY 2014	1,579	1,579	1,579
FY 2015	2,125	2,125	2,125
FY 2016	1,000	1,000	1,000
FY 2017	982	982	982
Total, OPC	14,431	14,431	14,431

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Total Project Cost (TPC)			
FY 2005	854	854	854
FY 2006	1,919	1,919	1,919
FY 2007	980	980	980
FY 2008	1,323	1,323	1,323
FY 2009	3,517	3,517	2,478
FY 2010	5,219	5,219	4,337
FY 2011	6,839	6,839	3,392
FY 2012	11,178	11,178	1,722
FY 2013	8,677	8,677	5,742
FY 2014	32,258	32,258	15,384
FY 2015	12,125	12,125	34,700
FY 2016	1,000	1,000	10,288
FY 2017	982	982	982
Total, TPC	86,871	86,871	86,871

Total Project

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED (06-D-140-02)			
FY 2008	1,500	1,500	24
FY 2009	8,245	8,245	3,468
FY 2010	5,000	5,000	5,984
FY 2011	0	0	4,978
FY 2012	0	0	149
FY 2013	0	0	0
FY 2014	0	0	142
Total, PED (06-D-140-02)	14,745	14,745	14,745
Final Design (11-D-801)			
FY 2011	3,240	3,240	171
FY 2012	5,902	5,902	959
FY 2013	0	0	5,242
FY 2014	0	0	2,770
Total, Final Design	9,142	9,142	9,142
Total, Design	23,887	23,887	23,887

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Construction			
FY 2011	16,720	16,720	0
FY 2012	4,098	4,098	7,985
FY 2013	8,177	8,177	6,163
FY 2014	30,679	30,679	13,663
FY 2015	10,000	10,000	32,575
FY 2016	0	0	9,288
Total, Construction	69,674	69,674	69,674
TEC			
FY 2008	1,500	1,500	24
FY 2009	8,245	8,245	3,468
FY 2010	5,000	5,000	5,984
FY 2011	19,960	19,960	5,149
FY 2012	10,000	10,000	9,093
FY 2013	8,177	8,177	11,405
FY 2014	30,679	30,679	16,575
FY 2015	10,000	10,000	32,575
FY 2016	0	0	9,288
Total, TEC	93,561	93,561	93,561
Other Project Cost (OPC)			
OPC except D&D			
FY 2005	854	854	854
FY 2006	1,919	1,919	1,919
FY 2007	980	980	980
FY 2008	1,343	1,343	1,343
FY 2009	90	90	90
FY 2010	319	319	319
FY 2011	1,862	1,862	1,862
FY 2012	1,273	1,273	1,273
FY 2013	1,100	1,100	1,100
FY 2014	1,783	1,783	1,783
FY 2015	2,125	2,125	2,125
FY 2016	1,000	1,000	1,000
FY 2017	116	116	116
Total, OPC except D&D	14,764	14,764	14,764

(dollars in thousands)

	Appropriations	Obligations	Costs
D&D			
FY 2017	866	866	866
Total, D&D	866	866	866
OPC			
FY 2005	854	854	854
FY 2006	1,919	1,919	1,919
FY 2007	980	980	980
FY 2008	1,343	1,343	1,343
FY 2009	90	90	90
FY 2010	319	319	319
FY 2011	1,862	1,862	1,862
FY 2012	1,273	1,273	1,273
FY 2013	1,100	1,100	1,100
FY 2014	1,783	1,783	1,783
FY 2015	2,125	2,125	2,125
FY 2016	1,000	1,000	1,000
FY 2017	982	982	982
Total, OPC	15,630	15,630	15,630
Total Project Cost (TPC)			
FY 2005	854	854	854
FY 2006	1,919	1,919	1,919
FY 2007	980	980	980
FY 2008	2,843	2,843	1,367
FY 2009	8,335	8,335	3,558
FY 2010	5,319	5,319	6,303
FY 2011	21,822	21,822	7,011
FY 2012	11,273	11,273	10,366
FY 2013	9,277	9,277	12,505
FY 2014	32,462	32,462	18,358
FY 2015	12,125	12,125	34,700
FY 2016	1,000	1,000	10,288
FY 2017	982	982	982
Total, TPC	109,191	109,191	109,191

6. Details of Cost Estimate

11-D-801-01 Phase A: Glovebox #1 and Air Dryers

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED) (06-D-140-02)	2,890	2,784	3,330
Contingency (06-D-140-02)	0	106	370
Final Design (11-D-801)	568	568	1,200
Final Design Contingency (11-D-801)			300
Total Design	3,458	3,458	5,200
Construction			
Site Preparation			
Equipment			
Other Construction	9,351	7,779	10,680
Federal Project Support			
Contingency	0	1,922	3,150
Total, Construction	9,351	9,701	13,830
Total, TEC	12,809	13,159	19,030
Contingency, TEC	0	2,028	3,820
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning			
Conceptual Design			
Start-up	482	472	410
Contingency	13	23	30
Total, OPC except D&D	495	495	440
D&D			
D&D			
Contingency			
Total, D&D	0	0	0
Total, OPC	495	495	440
Contingency, OPC	13	23	30
Total, TPC	13,304	13,654	19,470
Total, Contingency	13	2,051	3,850

11-D-801-02 Phase B: Glovebox 2 and Confinement Doors

	(dollars in thousands)		
	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED) (06-D-140-02)	3,348	3,001	3,542
Contingency (06-D-140-02)	0	347	400
Final Design (11-D-801)	167	167	1,600
Final Design Contingency (11-D-801)			350
Total Design	3,515	3,515	5,892
Construction			
Site Preparation			
Equipment			
Other Construction	4,797	5,360	8,266
Federal Project Support			
Contingency	0	1,659	3,424
Total, Construction	4,797	7,019	11,690
Total, TEC	8,312	10,534	17,582
Contingency, TEC	0	2,006	4,174
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning			
Conceptual Design			
Start-up	642	681	574
Contingency	62	23	47
Total, OPC except D&D	704	704	621
D&D			
D&D			
Contingency			
Total, D&D	0	0	0
Total, OPC	704	704	621
Contingency, OPC	62	23	47
Total, TPC	9,016	11,238	18,203
Total, Contingency	62	2,029	4,221

11-D-801-03 Phase C: Glovebox 3, Exhaust Stack, UPS, Criticality Alarm System, Vault Water Tanks, and PF-7 Demolition

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED) (06-D-140-02)	8,365	7,828	0
Federal Project Support (06-D-140-02) [a]	142		
Contingency (06-D-140-02)	0	679	0
Final Design (11-D-801)	7,907	4,508	
Federal Project Support (11-D-801) [a]	500		
Final Design Contingency (11-D-801)	0	1,421	
Total Design	16,914	14,436	0
Construction			
Other Construction	44,187	37,305	
Federal Project Support	2,500	1,500	
Contingency	8,839	8,839	
Total, Construction	55,526	47,644	0
Total, TEC	72,440	62,080	0
Contingency, TEC	8,839	10,939	0
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning			
Conceptual Design	5,071	5,071	
Start-up	6,621	6,621	
Contingency	1,873	1,873	
Total, OPC except D&D	13,565	13,565	0
D&D			
D&D	700	300	
Contingency	166	128	
Total, D&D	866	428	0
Total, OPC	14,431	13,993	0
Contingency, OPC	2,039	2,001	0
Total, TPC	86,871	76,073	0
Total, Contingency	10,878	12,940	0
Total Project			

[a] Needed for federal technical support through Independent Project Reviews required by DOE Order 413.3B and to conduct technical reviews of design and construction documents in support of the Federal Project Director.

	(dollars in thousands)		
	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED) (06-D-140-02)	14,603	13,613	6,872
Federal Project Support (06-D-140-02) [a]	142	0	0
Contingency (06-D-140-02)	0	1,132	770
Final Design (11-D-801)	8,642	5,243	2,800
Federal Project Support (11-D-801) [a]	500	0	0
Final Design Contingency (11-D-801)	0	1,421	650
Total Design	23,887	21,409	11,092
Construction			
Other Construction	58,335	50,444	18,946
Federal Project Support	2,500	1,500	0
Contingency	8,839	12,420	6,574
Total, Construction	69,674	64,364	25,520
Total, TEC	93,561	85,773	36,612
Contingency, TEC	8,839	14,973	7,994
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	0	0	0
Conceptual Design	5,071	5,071	0
Start-up	7,745	7,774	984
Contingency	1,948	1,919	77
Total, OPC except D&D	14,764	14,764	1,061
D&D			
D&D	700	300	0
Contingency	166	128	0
Total, D&D	866	428	0
Total, OPC	15,630	15,192	1,061
Contingency, OPC	2,114	2,047	77
Total, TPC	109,191	100,965	37,673
Total, Contingency	10,953	17,020	8,071

[a] Needed for federal technical support through Independent Project Reviews required by DOE Order 413.3B and to conduct technical reviews of design and construction documents in support of the Federal Project Director.

7. Schedule of Appropriation Requests

(dollars in thousands)

		Prior Years	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	Outyears	Total
FY 2011	TEC	53,324	20,221	20,468	42,480	TBD	TBD	TBD	TBD	TBD	TBD
	OPC	12,188	2,600	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
	TPC	65,512	22,821	20,468	42,480	TBD	TBD	TBD	TBD	TBD	TBD
FY 2012	TEC	54,086	8,889	8,624	12,500	0	0	0	0	0	84,099
	OPC	8,290	1,500	2,577	2,200	910	0	0	0	0	15,477
	TPC	62,376	10,389	11,201	14,700	910	0	0	0	0	99,576
FY 2013	TEC	44,705	8,889	30,679	0	0	0	0	0	0	84,273
	OPC	8,773	1,133	1,783	2,125	806	1,007	0	0	0	15,627
	TPC	53,478	10,022	32,462	2,125	806	1,007	0	0	0	99,900
FY 2014 Phase A	TEC	13,159	0	0	0	0	0	0	0	0	13,159
	OPC	195	300	0	0	0	0	0	0	0	495
	TEC	13,354	300	0	0	0	0	0	0	0	13,654
FY 2014 Phase B	TEC	10,534	0	0	0	0	0	0	0	0	10,534
	OPC	200	300	204	0	0	0	0	0	0	704
	TEC	10,734	300	204	0	0	0	0	0	0	11,238
FY 2014 Phase C	TEC	21,012	8,889	30,679	0	0	0	0	0	0	60,580
	OPC	8,245	500	1,579	2,125	1,000	979	0	0	0	14,428
	TEC	29,257	9,389	32,258	2,125	1,000	979	0	0	0	75,008
FY 2014 Total Project	TEC	44,705	8,889	30,679	0	0	0	0	0	0	84,273
	OPC	8,640	1,100	1,783	2,125	1,000	979	0	0	0	15,627
	TEC	53,345	9,989	32,462	2,125	1,000	979	0	0	0	99,900
FY 2015 Phase A	TEC	12,809	0	0	0	0	0	0	0	0	12,809
	OPC	195	300	0	0	0	0	0	0	0	495
	TEC	13,004	300	0	0	0	0	0	0	0	13,304
FY 2015 Phase B	TEC	8,312	0	0	0	0	0	0	0	0	8,312
	OPC	200	300	204	0	0	0	0	0	0	704
	TEC	8,512	300	204	0	0	0	0	0	0	9,016
FY 2015 Phase C	TEC	23,584	8,177	30,679	10,000	0	0	0	0	0	72,440
	OPC	8,245	500	1,579	2,125	1,000	982	0	0	0	14,431
	TEC	31,829	8,677	32,258	12,125	1,000	982	0	0	0	86,871
FY 2015 Total Project	TEC	44,705	8,177	30,679	10,000	0	0	0	0	0	93,561
	OPC	8,640	1,100	1,783	2,125	1,000	982	0	0	0	15,630
	TEC	53,345	9,277	32,462	12,125	1,000	982	0	0	0	109,191

8. Related Operations and Maintenance Funding Requirements

Start of Operation of Beneficial Occupancy (fiscal quarter or date)	4Q FY 2017
Expected Useful Life (number of years)	25
Expected Future Start of D&D of this capital asset (fiscal quarter)	4Q FY 2040

(Related Funding Requirements)

(dollars in thousands)

	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	N/A	N/A	N/A	N/A
Maintenance	N/A	N/A	N/A	N/A
Total, Operations and Maintenance	N/A	N/A	N/A	N/A

9. Required D&D Information

Area	Square Feet
Area of new construction	1,200
Area of existing facility(s) being replaced	1,200
Area of other D&D outside the project	0
Area of additional D&D space to meet the “one-for-one” requirement	0

Name(s) and site location(s) of existing facility(s) to be replaced: Uninterruptible Power Supply is planned to be relocated immediately outside of the existing structure (this represents demolition of the 1,200 square feet PF-7 structure).

10. Acquisition Approach

Design and Construction Management will be implemented by Los Alamos National Security, LLC through the LANL Management and Operating Contract. The TRP Acquisition Strategy is based on tailored procurement strategies for each subproject in order to mitigate risks. The TRP subprojects will be implemented via LANL-issued final design/construction contracts based on detailed performance requirements/specifications developed during the preliminary design phase.

07-D-220-04 Transuranic Liquid Waste (TLW) Facility,
Los Alamos National Laboratory (LANL), Los Alamos, New Mexico
Project is for Design and Construction

1. Significant Changes

The TLW Facility was a subproject under project 07-D-220 Radioactive Liquid Waste Treatment Facility Upgrade Project (RLWTF). However, the Fiscal Year (FY) 2014 Omnibus Appropriation created a separate line item for the TLW.

The most recent DOE O 413.3B approved is the Revised Critical Decision (CD) is CD-1, which was approved on September 23, 2013 with a Total Project Cost (TPC) top range of $96,033 and CD-4 date of 4Q FY 2020.

A Federal Project Director at the appropriate level has been assigned to this project.

This Project Data Sheet (PDS) does not include a new start for the budget year.
This PDS is new but provides an update to information in the FY 2014 07-D-220 RLWTF PDS.

2. Design, Construction, and D&D Schedule

(fiscal quarter or date[a])

	CD-0	CD-1	Design Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2014	10/04/2004	09/16/2011	1QFY 2017	4QFY 2016	1Q FY 2017	4Q FY 2020	N/A	N/A
FY 2015	10/04/2004	09/23/2013	1QFY 2017	4QFY 2016	2Q FY 2017	4Q FY 2020	N/A	N/A

CD-0 – Approve Mission Need
CD-1 – Approve Alternative Selection and Cost Range
CD-2 – Approve Performance Baseline
CD-3 – Approve Start of Construction
CD-4 – Approve Start of Operations or Project Closeout
D&D Start – Start of Demolition & Decontamination (D&D) work
D&D Complete –Completion of D&D work

3. Baseline and Validation Status[b]

	TEC, Design	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2014	20,546	74,270	94,816	12,780	0	12,780	107,596
FY 2015	25,605	60,000	85,605	10,428	0	10,428	96,033

4. Project Description, Justification, and Scope

Project Description

The radioactive liquid waste (RLW) treatment and disposal capability at LANL supports 15 technical areas, 63 buildings, and 1,800 sources of RLW. This capability must be continuously available to receive and treat liquid waste generated from Stockpile Stewardship and other activities. This project will design and construct a new facility to treat transuranic liquid waste mostly generated at the Plutonium Facility (PF-4), the only facility in the nation capable and designated to produce pits for the enduring stockpiles.

[a] The schedules are only estimates and consistent with the high end of the schedule ranges.
[b] The numbers are only estimates and consistent with the high-end of the cost range.

Project Justification

Significant portions of the RLW system are almost 50 years old and their reliability is significantly diminished. The recent transuranic storage tank failure demonstrated the inability of RLW components to remain in service beyond their design life and exemplified the high cost of repair. This created the need to extend the life of a portion of the existing room that treats transuranic waste until the new facility is designed and constructed. The new facility will be built to comply with the current codes and standards including International Building Code, seismic design/construction codes and the National Electric Code (NEC). Recent operations and safety reviews have highlighted the need for enhanced seismic conformance for the existing facilities at LANL. Continuous workarounds are required to keep systems running and excessive corrosion threatens system availability. Degraded and outdated facility systems pose elevated risk to workers.

The replacement is needed to remediate significant deficiencies associated with the existing RLW treatment capabilities that pose a threat to the long-term availability of this function. The replacement is ultimately aimed at providing an RLW treatment capability that is safe, reliable, and effective for the next 50 years in support of primary missions at LANL.

Project Scope

The scope includes the design and construction to build a single-story reinforced concrete structure to house the processing equipment, capable of treating up to 30,000 liters of transuranic liquid waste each year; which includes a control room, labs, and a separate utility building. This new facility will be approximately 2,000 sq ft to 4,000 sq ft, hazard category 3 nuclear facility and will replace, as a minimum, the following existing capability:

1) Transuranic (TRU) waste treatment;
2) TRU influent storage.

The project is being conducted in accordance with the project management requirements in DOE Order 413.3B, Program and Project Management for the Acquisition of Capital Assets and all appropriate project management requirements have been met.

Funds appropriated under this data sheet may be used for contracted support services to the Federal Project Director to conduct independent assessments of the planning and execution of this project.

Construction funds will not be used until approval of Critical Decision 3, Approve Start of Construction, except procuring long-lead equipment, if necessary.

Risks

Risk Driver	Handling Strategy
Lack of Competitive Bids for Construction Contracts	Issue request for proposal nationwide through the FedBizOps.
Escalation Rates Significantly Exceed Those Factored Into Current Estimates	Add sufficient contingency to mitigate potential increases.

5. Financial Schedule

07-D-220-04: Transuranic Liquid Waste Subproject

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2014	10,605	10,605	2,000
FY 2015	15,000	15,000	15,000
FY 2016	0	0	7,593
FY 2017	0	0	1,012
Total, Design	25,605	25,605	25,605
Construction			
FY 2016	60,000	60,000	5,000
FY 2017	0	0	40,000
FY 2018	0	0	13,416
FY 2019	0	0	1,584
Total, Construction	60,000	60,000	60,000
TEC			
FY 2014	10,605	10,605	2,000
FY 2015	15,000	15,000	15,000
FY 2016	60,000	60,000	12,593
FY 2017	0	0	41,012
FY 2018	0	0	13,416
FY 2019	0	0	1,584
Total, TEC	85,605	85,605	85,605
Other Project Cost (OPC)			
OPC except D&D			
FY 2014	1,639	1,639	1,639
FY 2015	654	654	654
FY 2016	2,061	2,061	2,061
FY 2017	1,500	1,500	1,500
FY 2018	1,500	1,500	1,500
FY 2019	2,000	2,000	2,000
FY 2020	1,074	1,074	1,074
Total, OPC except D&D	10,428	10,428	10,428

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Total Project Cost (TPC)			
FY 2014	12,244	12,244	3,639
FY 2015	15,654	15,654	15,654
FY 2016	62,061	62,061	14,654
FY 2017	1,500	1,500	42,512
FY 2018	1,500	1,500	14,916
FY 2019	2,000	2,000	3,584
FY 2020	1,074	1,074	1,074
Total, TPC	96,033	96,033	96,033

6. Details of Project Cost Estimate

07-D-220-04: Transuranic Liquid Waste Subproject

	(dollars in thousands)		
	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	17,393	17,393	NA
Design Support (Federal) [a]	300	300	NA
Contingency	7,912	4,319	NA
Total, Design	25,605	22,012	NA
Construction			
Site Preparation			
Equipment			NA
Other Construction	36,737	36,737	NA
Construction Support (Federal) [a]	1,000	1,000	NA
Contingency	22,263	22,470	NA
Total, Construction	60,000	60,207	NA
Total, TEC	85,605	82,219	NA
Contingency, TEC	30,175	26,789	NA
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning			NA
Conceptual Design[b]	NA		NA
Safety Basis and Design Support	5,041	7,041	NA
Start-Up	2,537	2,537	NA
Contingency	2,850	3,202	NA
Total, OPC except D&D	10,428	12,780	NA
D&D			
D&D	0	0	NA
Contingency	0	0	NA
Total, D&D	0	0	NA
Total, OPC	10,428	12,780	NA
Contingency, OPC	2,850	3,202	NA
Total, TPC	96,033	94,999	NA
Total, Contingency	33,025	29,991	NA

[a] Needed for contracted support services to the Federal Project Director to conduct Independent Project Reviews required by DOE Order 413.3B and to conduct technical reviews of design and construction documents

[b] Conceptual design is part of the RLWTF (07-D-220).

7. Schedule of Appropriation Requests

		Prior Years	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	Out-Years	Total
FY 2014 TLW	TEC	0	0	15,466	14,255	56,332	0	0	0	86,053
	OPC	0	0	1,639	654	2,061	1,500	1,500	5,426	12,780
	TPC	0	0	17,105	14,909	58,393	1,500	1,500	5,426	98,833
FY 2015 TLW	TEC	0	0	10,605	15,000	60,000	0	0	0	85,605
	OPC	0	0	1,639	654	2,061	1,500	1,500	3,074	10,428
	TPC	0	0	12,244	15,654	62,061	1,500	1,500	3,074	96,033

8. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	4QFY2020
Expected Useful Life (number of years)	50
Expected Future Start of D&D of this capital asset (fiscal quarter)	4QFY2070

(Related Funding requirements)

(dollars in thousands)

	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	TBD	TBD	TBD	TBD
Maintenance	TBD	TBD	TBD	TBD
Total, Operations & Maintenance	TBD	TBD	TBD	TBD

9. Required D&D Information

The one-for-one offset requirement will be met by utilizing site-banked square footage. A plan for D&D of the existing facility will be developed at the end of construction of the new facility when characterization data is available. D&D of the current facility is too far in the future for accurate cost estimates at this time.

Area	Square Feet
Area of new construction	2,000-4000
Area of existing facility(s) being replaced	0
Area of other D&D outside the project	0
Area of additional D&D space to meet the “one-for-one” requirement	2,000-4000

Name(s) and site location(s) of existing facility(s) to be replaced: Banked space will be used to meet one for one replacement.

10. Acquisition Approach

The TLW design and construction will be obtained through competitively awarded contracts using a firm fixed price contract.

06-D-141, Uranium Processing Facility (UPF)
Y-12 National Security Complex, Oak Ridge, Tennessee
Project is for Design and Construction

1. Significant Changes

The most recent DOE Order 413.3B approved Critical Decision (CD) is CD-1 reaffirmation that was approved on 06/08/2012 with a preliminary cost range of $4.2 billion to $6.5 billion and CD-4 of 4th quarter (Q) fiscal year (FY) 2022.

In light of evolving project funding projections and increased design maturity, the high-end of the CD-1 cost range was determined to be unachievable. As a consequence and consistent with the Department's build-to-budget strategy, the NNSA Administrator chartered a review of UPF alternatives to stay within the CD-1 cost range. The objectives of the alternatives under consideration should deliver Building 9212 capabilities for not more than $6.5 billion and no later than 2025.

FY 2015 funds will be used to continue the design, continue the UPF Site Readiness Subproject, and start the Site Infrastructure and Services (SIS) Subproject. For FY 2015 and the outyears, the numbers presented are estimates and will be finalized once the project has an approved CD-2 performance baseline. Consistent with NNSA's increased emphasis on project management rigor, the total project cost (TPC) and baseline schedule will not be approved until the design is sufficiently mature to support a credible cost and schedule estimate.

The construction execution plan has been refined since FY 2014. The Site Preparation Subproject (06-D-141-02) has been further segmented into a smaller more manageable project, Site Infrastructure and Support (SIS) Subproject (06-D-141-05). The SIS Subproject will include a subset of the former Site Preparation Subproject scope excluding the large scale site excavation and mass fill that forms the foundation for the nuclear facility base mat. Those work activities related to the nuclear facility's base mat will be included in the Nuclear Facility, Process Equipment, and Balance of Facilities Subproject (06-D-141-04). Additional subprojects may be identified as design and acquisition plans complete in FY 2015.

Site Readiness Subproject (06-D-141-01): Site Readiness received CD-2/3 approval in January 2013. The Total Project Cost for the subproject is $65,000 and CD-4 is 2Q FY 2015.

Site Preparation Subproject (06-D-141-02): Scope moved to SIS (06-D-141-05) and the Nuclear Facility (06-D-141-04).

West End Protected Area Reduction (WEPAR) Subproject (06-D-141-03): Removed. Scope of work is being re-evaluated and is not included in this request.

Nuclear Facility, Process Equipment, and Balance of Facilities Subproject (06-D-141-04): The nuclear facility subproject preliminary cost range is to be determined (TBD) with a projected CD-2/3 and CD-4 date TBD. Prior to CD-2, NNSA will determine the feasibility of further subdividing this subproject.

Site Infrastructure and Services (SIS) Subproject (06-D-141-05): SIS is planned to receive CD-2/3 approval in FY 2014. The preliminary cost range for the subproject is $47,490 - $59,500 and CD-4 is 4Q FY 2016.

This PDS does not include a new start for the budget year.

A Level 4 PMCDP qualified Federal Project Director has been assigned to this project.

This PDS reflects a FY 2015 reduction of $164 million, and an aggregate reduction (FY 2012-2015) of $229 million from the FY 2014 President's Budget Request. As represented in the FY 2015 request, design, construction and Other Project Costs (OPC) will continue to be executed through the line item funding. Funds will be obligated and recorded in the appropriate object classes (object class 32.0 and 25.4) as defined in Office of Management and Budget Circular A-11. After October 1, 2011, OPC work has and will only be performed using funding specifically appropriated by Congress for the project.

2. Critical Decision (CD) and D&D Schedule

(fiscal quarter or date)

	CD-0	CD-1	Design Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2011	12/17/2004	07/25/2007	2QFY2014	TBD	TBD	TBD	TBD	TBD
FY 2012	12/17/2004	07/25/2007	2QFY2014	4QFY2013	4QFY2013	TBD	TBD	TBD
FY 2013	12/17/2004	07/25/2007	2QFY2014	4QFY2013	4QFY2013	4QFY2022	N/A	N/A
FY 2014	12/17/2004	06/08/2012	4QFY2015	3Q FY2014	3QFY2015	TBD	N/A	N/A
FY 2015	12/17/2004	06/08/2012	TBD	TBD	TBD	TBD	N/A	N/A

Site Readiness Subproject (06-D-141-01)

(fiscal quarter or date)

	CD-0	CD-1	Design Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2014 PB	12/17/2004	06/08/2012	01/29/2013	01/29/2013	01/29/2013	2QFY2015	N/A	N/A
FY 2015	12/17/2004	06/08/2012	01/29/2013	01/29/2013	01/29/2013	2QFY2015	N/A	N/A

Nuclear Facility, Process Equipment, and Balance of Facilities Subproject (06-D-141-04)

(fiscal quarter or date)

	CD-0	CD-1	Design Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2014	12/17/2004	07/25/2007	4QFY2015	3QFY2014	3QFY2015	TBD	N/A	N/A
FY 2015	12/17/2004	07/25/2007	TBD	TBD	TBD	TBD	N/A	N/A

Site Infrastructure and Services Subproject (06-D-141-05)[a]

(fiscal quarter or date)

	CD-0	CD-1	Design Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2015	12/17/2004	07/25/2007	4QFY2013	4QFY2014	4QFY2014	4QFY2016	N/A	N/A

CD-0 – Approve Mission Need
CD-1 – Approve Alternative Selection and Cost Range
CD-2 – Approve Performance Baseline
CD-3 – Approve Start of Construction
CD-4 – Approve Start of Operations or Project Closeout
D&D Start – Start of Demolition & Decontamination (D&D) work
D&D Complete –Completion of D&D work

[a] The schedule are only estimates and consistent with the high end of the schedule range.

3. Baseline and Validation Status

Overall Project

(dollars in thousands)

	TEC, Design	TEC, Construction	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
FY 2011	351,149	935,000-1,604,000	1,124,000-1,928,000	276,000-472,000	TBD	TBD	1,400,000-3,500,000
FY 2012	528,690	3,174,779-5,320,310	3,703,000-5,849,000	497,000-651,000	N/A	497,000-651,000	4,200,000-6,500,000
FY 2013	566,192	3,136,808-5,150,808	3,703,000-5,717,000	497,000-783,000	N/A	497,000-783,000	4,200,000-6,500,000
FY 2014	1,164,000	TBD	TBD	TBD	N/A	TBD	TBD
FY 2015	TBD	TBD	TBD	TBD	N/A	TBD	TBD[a]

Site Readiness Subproject (06-D-141-01)

(dollars in thousands)

	TEC, Design	TEC, Construction	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
FY 2015	N/A[b]	64,000	64,000	1,000	N/A	1,000	65,000

Nuclear Facility, Process Equipment, and Balance of Facilities Subproject (06-D-141-04)

(dollars in thousands)

	TEC, Design	TEC, Construction	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
FY 2015	TBD	TBD	TBD	TBD	N/A	TBD	TBD

Site Infrastructure and Services Subproject (06-D-141-05)[c]

(dollars in thousands)

	TEC, Design	TEC, Construction	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
FY 2015	N/A[b]	58,000	58,000	1,500	N/A	1,500	59,500

4. Project Description, Scope, and Justification

Mission Need

The UPF Project is needed to ensure the long-term viability, safety, and security of the Enriched Uranium (EU) capability in the United States. The UPF Project will support the Nation's nuclear weapons stockpile, down blending of EU in support of nonproliferation, and provide uranium as feedstock for fuel for naval reactors. Currently these capabilities reside in aged and "genuinely decrepit" facilities as noted by the Perry Commission. There is substantial risk that the existing facilities will continue to deteriorate to the point of significant impact to Defense Programs, Defense Nuclear Nonproliferation, and Naval Reactors programs. The impacts could result in loss of the U.S. capability to maintain the nuclear weapons stockpile through life extension programs, shutdown of the U.S. Navy nuclear powered fleet due to lack of EU fuel feedstock materials, and impact to the Defense Nuclear Nonproliferation program's ability to reduce the enrichment level of foreign research reactors through supply of

[a] Since CD-1 reaffirmation, the UPF budget profile has been adjusted to reflect early analysis by the DoD Cost Assessment and Program Evaluation (CAPE) team. Further adjustments to the UPF budget profile and/or total cost range will be informed by the ongoing multi-year, iterative analysis process between NNSA and DoD.

[b] Design costs are included under subproject 06-D-141-04.

[c] The costs are only estimates and consistent with the high end of the cost range.

lower enrichment fuels manufactured at Y-12. The risk of inadvertent or accidental shutdown of the existing facilities is high and may occur prior to completion and startup of the UPF Project.

Scope and Justification

The UPF Project's CD-1, Approve Alternative Selection and Cost Range, was approved on July 25, 2007. As part of the DOE Order 413.3B requirements CD-1 was reaffirmed on June 8, 2012.

The UPF Project, which consists of the Nuclear Facility and its support infrastructure, is a major system acquisition that was selected in the Record of Decision for the Complex Transformation Supplemental Programmatic Environmental Impact Statement to ensure the long-term viability, safety, and security of the EU capability at the Y-12 National Security Complex. Within budget constraints, the UPF project focuses on modernizing uranium processing capabilities at Y-12 to reduce safety risk. The UPF project provides new facilities to replace the Building 9212 capabilities for Highly Enriched Uranium (HEU) recycle, recovery and purification, casting, metal and special oxide production. Coordination between Headquarters, the NNSA Production Office and the UPF Project is essential as the 9212 Transition Plan elements will be integrated with capabilities to be delivered by UPF.

The goals and objectives of UPF Project are to support the following modernization strategy:

- Ensure the long-term capability and improve the reliability of EU operations through consolidation of facilities;
- Replace deteriorating, end-of-life facilities with modern manufacturing facilities;
- Significantly improve the health and safety posture for workers and the public by replacing administrative controls with engineered controls to manage the risks related to worker safety, criticality safety, fire protection, and environmental compliance;
- Accomplish essential upgrades to security at Y-12 necessary to carry out mission-critical activities and implement the Graded Security Protection Policy; and
- Allow the Y-12 site to accomplish a reduction in its high-security footprint.

FY 2015 activities include ongoing design activities for the nuclear facility and associated support facilities, procurements, and construction of subprojects. Project activities include awarding multiple CD-2 and CD-3 packages for smaller, more manageable integrated subprojects to manage commitments for cost and schedule. Capital project funding will be used for construction of these subprojects but will not be authorized until the subproject performance baselines have been validated and the CD-2 and 3 are approved in accordance with DOE O 413.3B.

The project is being conducted in accordance with the project management requirements in DOE O 413.3B, Program and Project Management for the Acquisition of Capital Assets, and all appropriate project management requirements have been met. Consistent with DOE O 413.3B, Earned Value information for all subprojects with a TPC greater than or equal to $20 million and an approved CD-2 will be reported in the Project Assessment and Reporting System (PARS II). The Site Readiness and the overall UPF design (although not baselined) are currently being reported in PARS II. Funds appropriated under this data sheet may be used for independent assessments and oversight of the planning and execution of this project.

The UPF project consists of the following subprojects:

Site Readiness Subproject (06-D-141-01) - The scope for Site Readiness is Bear Creek Road (BCR) relocation, including a bridge overpass of a haul road; installation of potable water lines paralleling the new road; electrical line demolition to make way for the road and clear the construction site; electrical line and communication cable installation; preparation of the West Borrow area to receive excess-soil and preparation and maintenance of a spoil area for wet soil; extension of an existing haul road for access to the construction site; excavation of Portal 10 and installation of a retaining wall; and jack-and-bore installation of utility casings.

Site Infrastructure and Services Subproject (06-D-141-05) - This subproject will provide infrastructure and support facilities for the Nuclear Facility, Process Equipment, and Balance of Facilities Subproject (06-D-141-04). Scope includes the Portal 19 and Vehicle Arresting System gate; demolition of Building 9107 and excavation of the 9107 hillside to finish the haul road to grade; construction of temporary facilities and procurement of construction support equipment; and installation of erosion control features.

Nuclear Facility, Process Equipment, and Balance of Facilities Subproject (06-D-141-04) - The scope of the Nuclear Facility Subproject includes the balance of the project scope: the nuclear facility, utility systems, and installation of process equipment replacing Building 9212 capabilities, and support facilities. Space and facility support for the balance of the EU processes to be installed later will be included. Prior to CD-2, NNSA will determine the feasibility of further subdividing this subproject.

5. Financial Schedule

Site Readiness Subproject (06-D-141-01)

(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
Design	N/A	N/A	N/A
Construction			
FY 2013	49,000	49,000	5,242
FY 2014	15,000	15,000	34,455
FY 2015	0	0	24,303
Total, Construction	64,000	64,000	64,000
TEC			
FY 2013	49,000	49,000	5,242
FY 2014	15,000	15,000	34,455
FY 2015	0	0	24,303
Total, TEC	64,000	64,000	64,000
Other Project Cost (OPC)			
OPC except D&D			
FY 2015	1,000	1,000	1,000
Total, OPC except D&D	1,000	1,000	1,000
D&D			
FY 2015	N/A	N/A	N/A
Total, D&D	N/A	N/A	N/A
OPC			
FY 2015	1,000	1,000	1,000
Total, OPC	1,000	1,000	1,000
Total Project Cost (TPC)			
FY 2013	49,000	49,000	5,242
FY 2014	15,000	15,000	34,455
FY 2015	1,000	1,000	25,303
Total, TPC	65,000	65,000	65,000

Nuclear Facility, Process Equipment, and Balance of Facilities Subproject (06-D-141-04)

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2006	5,000	5,000	0
FY 2007	5,000	5,000	677
FY 2008	38,583	38,583	33,950
FY 2009	90,622	90,622	79,184
FY 2010	94,000	94,000	80,959
FY 2011	114,786	114,786	109,855
FY 2012	160,194	160,109	170,700
FY 2013	263,783	263,741	192,389
FY 2014	262,000	262,127	246,110
FY 2015	302,000	302,000	267,697
FY 2016	TBD	TBD	TBD
FY 2017	TBD	TBD	TBD
FY 2018	TBD	TBD	TBD
FY 2019	TBD	TBD	TBD
Total, Design	TBD	TBD	TBD
Construction			
FY 2015	0	0	0
FY 2016	TBD	TBD	TBD
FY 2017	TBD	TBD	TBD
FY 2018	TBD	TBD	TBD
FY 2019	TBD	TBD	TBD
Total, Construction	TBD	TBD	TBD
TEC			
FY 2006	5,000	5,000	0
FY 2007	5,000	5,000	677
FY 2008	38,583	38,583	33,950
FY 2009	90,622	90,622	79,184
FY 2010	94,000	94,000	80,959
FY 2011	114,786	114,786	109,855
FY 2012	160,194	160,109	170,700
FY 2013	263,783	263,741	192,389
FY 2014	262,000	262,127	246,110
FY 2015	302,000	302,000	267,697
FY 2016	TBD	TBD	TBD
FY 2017	TBD	TBD	TBD
FY 2018	TBD	TBD	TBD
FY 2019	TBD	TBD	TBD
Total, TEC	TBD	TBD	TBD

(dollars in thousands)	Appropriations	Obligations	Costs
Other Project Cost (OPC)			
OPC except D&D			
FY 2005	12,113	12,113	12,113
FY 2006	7,809	7,809	7,809
FY 2007	10,082	10,082	10,082
FY 2008	11,730	11,730	11,730
FY 2009	14,000	14,000	14,000
FY 2010	20,500	20,500	20,500
FY 2011	18,894	18,894	18,894
FY 2012	0	0	0
FY 2013	0	0	0
FY 2014	12,000	12,000	12,000
FY 2015	12,000	12,000	12,000
FY 2016	TBD	TBD	TBD
Total, OPC except D&D	TBD	TBD	TBD
D&D			
FY 2009	N/A	N/A	N/A
Total, D&D	N/A	N/A	N/A
OPC			
FY 2005	12,113	12,113	12,113
FY 2006	7,809	7,809	7,809
FY 2007	10,082	10,082	10,082
FY 2008	11,730	11,730	11,730
FY 2009	14,000	14,000	14,000
FY 2010	20,500	20,500	20,500
FY 2011	18,894	18,894	18,894
FY 2012	0	0	0
FY 2013	0	0	0
FY 2014	12,000	12,000	12,000
FY 2015	12,000	12,000	12,000
FY 2016	TBD	TBD	TBD
Total, OPC	TBD	TBD	TBD
Total Project Cost (TPC)			
FY 2005	12,113	12,113	12,113
FY 2006	12,809	12,809	7,809
FY 2007	15,082	15,082	10,759
FY 2008	50,313	50,313	45,680
FY 2009	104,622	104,622	93,184
FY 2010	114,500	114,500	101,459
FY 2011	133,680	133,680	128,749
FY 2012	160,194	160,109	170,700
FY 2013	263,783	263,741	192,389
FY 2014	274,000	274,127	258,110
FY 2015	314,000	314,000	279,697
FY 2016	TBD	TBD	TBD
Total, TPC	TBD	TBD	TBD

Site Infrastructure and Services (SIS) Subproject (06-D-141-05):

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
Design	N/A	N/A	N/A
Construction			
FY 2014	20,000	20,000	10,000
FY 2015	20,000	20,000	30,000
FY 2016	18,000	18,000	18,000
Total, Construction	58,000	58,000	58,000
TEC			
FY 2014	20,000	20,000	10,000
FY 2015	20,000	20,000	30,000
FY 2016	18,000	18,000	18,000
Total, TEC	58,000	58,000	58,000
Other Project Cost (OPC)			
OPC except D&D			
FY 2014	0	0	0
FY 2015	0	0	0
FY 2016	1,500	1,500	1,500
Total, OPC except D&D	1,500	1,500	1,500
D&D			
FY 2014	N/A	N/A	N/A
Total, D&D	N/A	N/A	N/A
OPC			
FY 2014	0	0	0
FY 2015	0	0	0
FY 2016	1,500	1,500	1,500
Total, OPC	1,500	1,500	1,500
Total Project Cost (TPC)			
FY 2014	20,000	20,000	10,000
FY 2015	20,000	20,000	30,000
FY 2016	19,500	19,500	19,500
Total, TPC	59,500	59,500	59,500

Overall Project

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2006	5,000	5,000	0
FY 2007	5,000	5,000	677
FY 2008	38,583	38,583	33,950
FY 2009	90,622	90,622	79,184
FY 2010	94,000	94,000	80,959
FY 2011	114,786	114,786	109,855
FY 2012	160,194	160,109	170,700
FY 2013	263,783	263,741	192,389
FY 2014	262,000	262,127	246,110
FY 2015	302,000	302,000	267,697
FY 2016	TBD	TBD	TBD
Total, Design	TBD	TBD	TBD
Construction			
FY 2013	49,000	49,000	5,242
FY 2014	35,000	35,000	44,455
FY 2015	20,000	20,000	54,303
FY 2016	TBD	TBD	TBD
Total, Construction	TBD	TBD	TBD
TEC			
FY 2006	5,000	5,000	0
FY 2007	5,000	5,000	677
FY 2008	38,583	38,583	33,950
FY 2009	90,622	90,622	79,184
FY 2010	94,000	94,000	80,959
FY 2011	114,786	114,786	109,855
FY 2012	160,194	160,109	170,700
FY 2013	312,783	312,741	197,631
FY 2014	297,000	297,127	290,565
FY 2015	322,000	322,000	322,000
FY 2016	TBD	TBD	TBD
Total, TEC	TBD	TBD	TBD

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Other Project Cost (OPC)			
OPC except D&D			
FY 2005	12,113	12,113	12,113
FY 2006	7,809	7,809	7,809
FY 2007	10,082	10,082	10,082
FY 2008	11,730	11,730	11,730
FY 2009	14,000	14,000	14,000
FY 2010	20,500	20,500	20,500
FY 2011	18,894	18,894	18,894
FY 2012	0	0	0
FY 2013	0	0	0
FY 2014	12,000	12,000	12,000
FY 2015	13,000	13,000	13,000
FY 2016	TBD	TBD	TBD
Total, OPC except D&D	TBD	TBD	TBD
D&D			
FY 2009	N/A	N/A	N/A
Total, D&D	N/A	N/A	N/A
OPC			
FY 2005	12,113	12,113	12,113
FY 2006	7,809	7,809	7,809
FY 2007	10,082	10,082	10,082
FY 2008	11,730	11,730	11,730
FY 2009	14,000	14,000	14,000
FY 2010	20,500	20,500	20,500
FY 2011	18,894	18,894	18,894
FY 2012	0	0	0
FY 2013	0	0	0
FY 2014	12,000	12,000	12,000
FY 2015	13,000	13,000	13,000
FY 2016	TBD	TBD	TBD
Total, OPC	TBD	TBD	TBD

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Total Project Cost (TPC)			
FY 2005	12,113	12,113	12,113
FY 2006	12,809	12,809	7,809
FY 2007	15,082	15,082	10,759
FY 2008	50,313	50,313	45,680
FY 2009	104,622	104,622	93,184
FY 2010	114,500	114,500	101,459
FY 2011	133,680	133,680	128,749
FY 2012	160,194	160,109	170,700
FY 2013	312,783	312,741	197,631
FY 2014	309,000	309,127	302,565
FY 2015	335,000	335,000	335,000
FY 2016	430,000	TBD	TBD
FY 2017	500,000	TBD	TBD
FY 2018	515,000	TBD	TBD
FY 2019	520,000	TBD	TBD
FY 2020	TBD	TBD	TBD
FY 2021	TBD	TBD	TBD
FY 2022	TBD	TBD	TBD
Total, TPC	6,500,000	6,500,000	6,500,000

6. Details of Project Cost Estimate

Site Readiness Subproject (06-D-141-01)

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	N/A	N/A	N/A
Contingency	N/A	N/A	N/A
Total, Design	N/A	N/A	N/A
Construction			
Site Preparation	50,200	N/A	N/A
Equipment	0	N/A	N/A
Other Construction	0	N/A	N/A
Contingency	13,800	N/A	N/A
Total, Construction	64,000	N/A	N/A
Total, TEC	64,000	N/A	N/A
Contingency, TEC	13,800	N/A	N/A
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	0	N/A	N/A
Conceptual Design	0	N/A	N/A
Start-up	1,000	N/A	N/A
Contingency	0	N/A	N/A
Total, OPC except D&D	1,000	N/A	N/A
D&D			
D&D	0	N/A	N/A
Contingency	0	N/A	N/A
Total, D&D	0	N/A	N/A
Total, OPC	1,000	N/A	N/A
Contingency, OPC	0	N/A	N/A
Total, TPC	65,000	N/A	N/A
Total, Contingency	13,800	N/A	N/A

Nuclear Facility, Process Equipment, and Balance of Facilities Subproject (06-D-141-04)

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	TBD	1,250,409	N/A
Contingency	TBD	93,661	N/A
Total, Design	TBD	1,344,070	N/A
Construction			
Site Preparation	TBD	N/A	N/A
Equipment	TBD	N/A	N/A
Other Construction	TBD	N/A	N/A
Contingency	TBD	N/A	N/A
Total, Construction	TBD	N/A	N/A
Total, TEC	TBD	N/A	N/A
Contingency, TEC	TBD	N/A	N/A
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	TBD	N/A	N/A
Conceptual Design	TBD	N/A	N/A
Start-up	TBD	N/A	N/A
Contingency	TBD	N/A	N/A
Total, OPC except D&D	TBD	N/A	N/A
D&D			
D&D	N/A	N/A	N/A
Contingency	N/A	N/A	N/A
Total, D&D	N/A	N/A	N/A
Total, OPC	TBD	N/A	N/A
Contingency, OPC	TBD	N/A	N/A
Total, TPC	TBD	N/A	N/A
Total, Contingency	TBD	N/A	N/A

Site Infrastructure and Services (SIS) Subproject (06-D-141-05)

	(dollars in thousands)		
	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	N/A	N/A	N/A
Contingency	N/A	N/A	N/A
Total, Design	N/A	N/A	N/A
Construction			
Site Preparation	40,000	N/A	N/A
Equipment	0	N/A	N/A
Other Construction	11,500	N/A	N/A
Contingency	6,500	N/A	N/A
Total, Construction	58,000	N/A	N/A
Total, TEC	58,000	N/A	N/A
Contingency, TEC	6,500	N/A	N/A
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	0	N/A	N/A
Conceptual Design	0	N/A	N/A
Start-up	1,500	N/A	N/A
Contingency	0	N/A	N/A
Total, OPC except D&D	1,500	N/A	N/A
D&D			
D&D	N/A	N/A	N/A
Contingency	N/A	N/A	N/A
Total, D&D	N/A	N/A	N/A
Total, OPC	1,500	N/A	N/A
Contingency, OPC	0	N/A	N/A
Total, TPC	59,500	N/A	N/A
Total, Contingency	6,500	N/A	N/A

Overall Project

	(dollars in thousands)		
	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	TBD	1,020,053	N/A
Contingency	TBD	143,947	N/A
Total, Design	TBD	1,164,000	N/A
Construction			
Site Preparation	TBD	TBD	N/A
Equipment	TBD	TBD	N/A
Other Construction	TBD	TBD	N/A
Contingency	TBD	TBD	N/A
Total, Construction	TBD	TBD	N/A
Total, TEC	TBD	TBD	N/A
Contingency, TEC	TBD	TBD	N/A
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	TBD	TBD	N/A
Conceptual Design	TBD	TBD	N/A
Start-up	TBD	TBD	N/A
Contingency	TBD	TBD	N/A
Total, OPC except D&D	TBD	TBD	N/A
D&D			
D&D	N/A	N/A	N/A
Contingency	N/A	N/A	N/A
Total, D&D	N/A	N/A	N/A
Total, OPC	TBD	TBD	N/A
Contingency, OPC	TBD	TBD	N/A
Total, TPC	TBD	TBD	N/A
Total, Contingency	TBD	TBD	N/A

7. Schedule of Appropriation Requests

Overall Project

(dollars in thousands)

		Prior Years	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	Outyears	Total
FY 2011	TEC	643,608	270,012	320,000	TBD	TBD	TBD	TBD	TBD	TBD
	OPC	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
	TPC	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
FY 2012	TEC	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
	OPC	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
	TPC	TBD	350,000	350,000	350,000	TBD	TBD	TBD	TBD	TBD
FY 2013	TEC	848,185	397,000	493,000	493,000	258,000	TBD	TBD	TBD	TBD
	OPC	95,128	3,000	7,000	7,000	12,000	TBD	TBD	TBD	TBD
	TPC	943,313	400,000	500,000	500,000	270,000	TBD	TBD	3,886,687	6,500,000
FY 2014[a]	TEC	848,185	313,835	486,171	573,604	587,300	616,952	TBD	TBD	TBD
	OPC	95,128	12,000	13,000	13,185	17,000	24,000	TBD	TBD	TBD
	TPC	943,313	325,835	499,171	586,789	604,300	640,952	TBD	TBD	TBD
FY 2015[a]	TEC	820,968	297,000	322,000	TBD	TBD	TBD	TBD	TBD	TBD
	OPC	95,128	12,000	13,000	TBD	TBD	TBD	TBD	TBD	TBD
	TPC	916,096	309,000	335,000	430,000	500,000	515,000	520,000	TBD	TBD

Site Readiness Subproject (06-D-141-01)

(dollars in thousands)

		Prior Years	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	Outyears	Total
FY 2014 PB	TEC	49,000	15,000	0	0	0	0	0	0	64,000
	OPC	0	0	1,000	0	0	0	0	0	1,000
	TPC	49,000	15,000	1,000	0	0	0	0	0	65,000
FY 2015	TEC	49,000	15,000	0	0	0	0	0	0	64,000
	OPC	0	0	1,000	0	0	0	0	0	1,000
	TPC	49,000	15,000	1,000	0	0	0	0	0	65,000

Site Preparation Subproject (06-D-141-02)

(dollars in thousands)

		Prior Years	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	Outyears	Total
FY 2014	TEC	0	46,835	TBD	TBD	TBD	TBD	TBD	TBD	TBD
	OPC	0	0	TBD	TBD	TBD	TBD	TBD	TBD	TBD
	TPC	0	46,835	TBD	TBD	TBD	TBD	TBD	TBD	TBD
FY 2015	TEC	0	0	0	0	0	0	0	0	0
	OPC	0	0	0	0	0	0	0	0	0
	TPC	0	0	0	0	0	0	0	0	0

[a] Since CD-1 reaffirmation, the UPF budget profile has been adjusted to reflect early analysis by the DoD CAPE team. Further adjustments to the UPF budget profile and/or total cost range will be informed by the ongoing multi-year, iterative analysis process between NNSA and DoD.

West End Protected Area Reduction (WEPAR) Subproject (06-D-141-03)

(dollars in thousands)

		Prior Years	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	Outyears	Total
FY 2014	TEC	0	24,000	TBD	TBD	TBD	TBD	TBD	TBD	TBD
	OPC	0	0	TBD	TBD	TBD	TBD	TBD	TBD	TBD
	TPC	0	24,000	TBD	TBD	TBD	TBD	TBD	TBD	TBD
FY 2015	TEC	0	0	0	0	0	0	0	0	0
	OPC	0	0	0	0	0	0	0	0	0
	TPC	0	0	0	0	0	0	0	0	0

Nuclear Facility, Process Equipment, and Balance of Facilities Subproject [a] (06-D-141-04)

(dollars in thousands)

		Prior Years	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	Outyears	Total
FY 2014	TEC	799,185	228,000	TBD	TBD	TBD	TBD	TBD	TBD	TBD
	OPC	95,128	12,000	TBD	TBD	TBD	TBD	TBD	TBD	TBD
	TPC	894,313	240,000	TBD	TBD	TBD	TBD	TBD	TBD	TBD
FY 2015	TEC	771,968	262,000	302,000	TBD	TBD	TBD	TBD	TBD	TBD
	OPC	95,128	12,000	12,000	TBD	TBD	TBD	TBD	TBD	TBD
	TPC	867,096	274,000	314,000	TBD	TBD	TBD	TBD	TBD	TBD

Site Infrastructure and Services Subproject (06-D-141-05)

(dollars in thousands)

		Prior Years	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	Outyears	Total
FY 2015	TEC	0	20,000	20,000	18,000	0	0	0	0	58,000
	OPC	0	0	0	1,500	0	0	0	0	1,500
	TPC	0	20,000	20,000	19,500	0	0	0	0	59,500

8. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy	2025
Expected Useful Life (number of years)	50 Years
Expected Future Start of D&D of this capital asset	N/A

[a] Financial data for subproject is pre-baseline estimate that will be finalized at Critical Decision 2.

(Related Funding requirements)

(dollars in thousands)

	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	TBD	TBD	TBD	TBD
Utilities	TBD	TBD	TBD	TBD
Maintenance & Repair	TBD	TBD	TBD	TBD
Recapitalization	TBD	TBD	TBD	TBD
Total	TBD	TBD	TBD	TBD

9. Required D&D Information

Area	Square Feet
Area of new construction	N/A
Area of existing facility(s) being replaced and D&D'ed by this project	N/A
Area of other D&D outside the project	N/A
Area of additional D&D space to meet the "one-for-one" requirement from the banked area	N/A

The construction of the UPF Project will add up to 150,000 base-level square feet of new facilities to the Y-12 footprint and will allow eventual replacement of functions in Building 9212 including EU casting and EU chemical processing operations. The final D&D and demolition of these areas are not considered part of the UPF project.

10. Acquisition Approach

The NNSA Federal Project Director and the Integrated Project Team will be responsible for the execution of the project. The Management and Operating (M&O) partners for Y-12 are the designated design authority. The Office of Defense Programs (NA-10) is responsible for defining program requirements, selecting the preferred alternatives, and for any project scope changes. The Office of Acquisition and Project Management (NA-APM) is responsible for providing support for alternative studies, and the lead NNSA office during design and construction of the project. The UPF Project will be executed through several acquisition strategies, to include firm fixed price, design bid build, design build and cost plus design build contracts.

The acquisition strategies for the UPF Site Readiness and Site Infrastructure and Services subprojects will be performed as firm fixed price construction projects for the major civil construction scope. The Nuclear Facility subproject is currently being assessed for best value acquisition strategies.

The Department will administer Architect-Engineer and Construction Contracts utilizing the M&O and stand-alone contract vehicles. Additionally, the United States Army Corps of Engineers (USACE) will have acquisition and project management responsibility for appropriate scopes of work as determined by the Department.

Secure Transportation Asset

Overview

The Secure Transportation Asset (STA) program safely and securely transports nuclear weapons, weapons components, and special nuclear materials to meet projected Department of Energy (DOE), Department of Defense (DoD), and other customer requirements.

The STA program includes Operations and Equipment and Program Direction funding. The Operations and Equipment subprogram provides for STA's transportation service infrastructure, which is critical in meeting the nuclear security enterprise initiatives documented in the Stockpile Stewardship Management Plan and the Nuclear Posture Review. The Program Direction subprogram provides primarily for the federal agents and the secure transportation workforce.

The STA current capacity will meet the prioritized NNSA Stockpile refurbishment and modernization initiatives and other DOE workload. The Secure Transportation Steering Committee will continue to balance and prioritize customer requests against STA capacity. Since its formal creation in 1974, the program has maintained its long legacy of no loss of cargo and no radiological release on any shipment. However, STA needs to replace aging transportation assets and communication systems to maintain the required convoy security profile.

Highlights of the FY 2015 Budget Request

The budget request is above the FY 2014 enacted level by 11.3 percent. In FY 2015, the STA will continue its asset modernization and workforce capability initiatives that began in 2013; namely, the design of the Mobile Guardian Transporter (MGT), the phased deployment of the Advanced Radio Enterprise System (ARES), the First Production Unit (FPU) of the upgrade to the Trailer Communications System (TCS), the continued replacement of vehicles and tractors, and the restoration of federal agent strength levels. Additionally, STA will ensure all of its supporting systems remain efficiently integrated to support Defense Programs.

While this submittal focuses on the five primary funding requirements above, it must be understood that STA is a system of systems, and any funding change in one system can drive fluctuations in requirements in other areas. All of these interconnected activities introduce significant cost, scope, and schedule risks that the Program must be able to mitigate.

The MGT will be in a critical phase of development during 2015, as the project must maintain its timeline for production startup in 2018. Not only must the design take into account current technology and production costs, it must also have the engineering flexibility to serve the nuclear security enterprise for up to 20 years. The certifications for the existing Safeguards Transporter (SGT) fleet will begin to expire in 2018, and the trailers will be retired over a 10-year period. If production does not begin in 2018 to meet those retirements, there could be some reduction in mission capacity.

The deployment of ARES raises convoy communications to an enhanced level, allowing for a situational awareness system to be installed in the vehicle fleet. The standardization and improvements that ARES provides will set the foundation for future communication upgrades. At the same time that new vehicles are being equipped with ARES, the existing fleet must be retrofitted under an aggressive deployment schedule. When vehicle production can achieve a steady-state, ARES production and fielding will also stabilize.

The TCS provides the interface between the communication systems in the trailers and the escort vehicles. The current TCS was developed over 20 years ago as part of the SGT design, and is no longer sustainable. The TCS upgrade will operate in a hardware platform that will be expandable and flexible for future upgrades, maintain 100 percent backward compatibility with the current SGT fleet vehicles, and be forward compatible to the new MGT. With its three-year development phase complete by 2015, the TCS activity will shift to the FPU and the start of production.

The combined effect of cancelling some of the agent candidate classes due to budget uncertainties, agent remuneration, and varying rates of attrition have lowered agent strength levels such that STA must commit itself to a stable human resources strategy to achieve an optimal agent force structure. It takes many years to achieve any substantial growth to the agent force. Nonetheless, STA's current plan should reach a balanced agent force in 2016.

Major Outyear Priorities and Assumptions

Outyear funding levels for STA total $1,022,735,000 for FY 2016 through FY 2019. The STA has identified key strategies to guide the Office of Secure Transportation over the next five to ten years. These Strategies are in line with, and support the Department's Strategic Objective 4 -- Maintain the safety, security and effectiveness of the Nation's nuclear deterrent without nuclear Testing.

Secure Transportation Asset
Funding

(Dollars in Thousands)

	FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Request	FY 2015 vs FY 2014 Enacted
Secure Transportation Asset (STA)					
Operations and Equipment	109,494	112,882	112,882	132,851	+19,969
Program Direction	92,039	97,118	100,737	100,962	+3,844
Total, Secure Transportation Asset	**201,533**	**210,000**	**213,619**	**233,813**	**+23,813**

Outyears for Secure Transportation Asset

(Dollars in Thousands)

	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Secure Transportation Asset (STA)				
Operations and Equipment	137,670	146,512	149,066	152,069
Program Direction	105,338	108,595	110,647	112,838
Total, Secure Transportation Asset	**243,008**	**255,107**	**259,713**	**264,907**

Secure Transportation Asset
Explanation of Major Changes
(Dollars in Thousands)

	FY 2015 vs FY 2014 Enacted
Secure Transportation Asset	
Operations and Equipment: The funding increase supports the procurement, fabrication, and testing of the Mobile Guardian Transporter (MGT) System Prototype(s). It also supports the First Production Unit of the Trailer Communication System (TCS); the start of production for the Support Vehicle; the continued production of the Replacement Armored Tractor and the Escort Vehicle—Light Chassis; training increases for contractual services and munitions; deployment of the Advanced Radio Enterprise System (ARES); and the integration of business functions and processes.	**+19,969**
Program Direction: The increase is attributable to the cost of conducting two 24 man Agent Candidate Training courses to include salaries, overtime, and travel, and the backfill of staff vacancies. The manpower provides the Direct Federal support for the transport of nuclear weapons, components and special nuclear materials to support the nuclear security enterprise. The increase also supports the application of the Human Reliability Program requirements to designated positions, including the Agent recruits.	**+3,844**
Total, Secure Transportation Asset	**+23,813**

Secure Transportation Asset
Operations and Equipment
Funding

(Dollars in Thousands)

	FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Request	FY 2015 vs FY 2014 Enacted
Secure Transportation Asset (STA)					
Operations and Equipment					
Mission Capacity	54,694	62,222	62,222	76,995	+14,773
Security/Safety Capability	18,775	19,852	19,852	21,005	+1,153
Infrastructure and C5 Systems	26,416	20,724	20,724	24,195	+3,471
Program Management	9,609	10,084	10,084	10,656	+572
Total, Operations and Equipment	**109,494**	**112,882**	**112,882**	**132,851**	**+19,969**

Outyears for Secure Transportation Asset

(Dollars in Thousands)

	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Secure Transportation Asset (STA)				
Operations and Equipment				
Mission Capacity	83,017	91,293	92,658	94,533
Security/Safety Capability	21,859	22,982	23,363	23,830
Infrastructure and C5 Systems	21,967	21,229	21,852	22,289
Program Management	10,827	11,008	11,193	11,417
Total, Operations and Equipment	**137,670**	**146,512**	**149,066**	**152,069**

Secure Transportation Asset
Explanation of Major Changes
(Dollars in Thousands)

	FY 2015 vs FY 2014 Enacted
Secure Transportation Asset/Operations and Equipment	
Mission Capacity: This increase primarily supports the completion of the design of the MGT and 60% of the design testing for internal components and assemblies. It also supports the First Production Unit of the Trailer Communication System (TCS) and the fleet production levels needed for the Replacement Armored Tractor, Escort Vehicle—Light Chassis, and Support Vehicles. With the deployment of new armored tractors and escort/support vehicles, the increase supports the anticipated cost increases in fleet maintenance.	**+14,773**
Security/Safety Capability: This increase supports the contractual services and munitions associated with Federal Agent training.	**+1,153**
Infrastructure and C5 Systems: This increase is associated with the final retrofit deployment of ARES into the existing transportation fleet and the production and installation of ARES in new escort/support vehicles and armored tractors.	**+3,471**
Program Management: Additional funding supports contract services and organizational costs across all business functions.	**+572**
Total, Secure Transportation Asset/Operations and Equipment	**+19,969**

Secure Transportation Asset
Operations and Equipment

Description
Within the STA Operations and Equipment Activity, four subprograms make unique contributions to the safety and security of the nuclear stockpile. These subprograms accomplish the following: (1) Mission Capacity - provides agent candidate training to maintain federal agent workforce, provides mission-essential agent equipment, uniforms or allowances as authorized by 5 U.S.C. 5901-5902, maintains and provides the transportation fleet and aviation services; (2) Security/Safety Capability - develops and implements new fleet technologies, intensifies agent training and implements Security, Safety and Emergency Response programs; (3) Infrastructure and C5 systems - provides facility maintenance, support for minor construction projects and C5 (command and control, communication, computer, and cyber) systems; and (4) Program Management - provides corporate functions and business operations that control, assist and direct secure transport operations.

The Mission Capacity subprogram sustains STA systems capacity through equipment purchases and maintenance of the agent manpower to fulfill the present transportation requirements. This funding area includes the following activities: (1) Conduct Agent Candidate Training (ACT) classes to maintain the agent end-strength. Funding supports the recruiting, equipping, and training of federal agent candidates necessary to maintain the workforce impacted by attrition. (2) Replace the aging vehicle fleet with newly designed vehicles. Funding supports the design, engineering, testing, and fielding of specialized vehicles, tractors and trailers necessary for successful convoy operations. (3) Maintain the aviation program. Funding supports the maintenance and sustainment of the aircraft fleet. (4) Maintain readiness posture of the STA fleet.

Major Outyears Priorities and Assumptions

Modernize Mission Assets and Infrastructure
STA must maintain assets to support current and future missions based on changing customer needs, budgets, and threats. These assets include vehicles (tractors, trailers, and escort vehicles), facilities, and aircraft. Modernizing and sustaining these assets requires an integrated, long-term strategy and plan, and a substantial investment. The STA strategy includes eliminating outdated assets, refurbishing existing assets to extend their useful life, and procuring new assets.

Strengthen Mission Support Systems
Mission support systems provide the critical information necessary to ensure mission success. This includes the information that is obtained, analyzed, and disseminated prior to the mission; the continuous monitoring of that information to ensure it is accurate and valid; and the constant communication within the mission teams and between the teams and headquarters. All of this must be accomplished seamlessly in real-time, while balancing the evolving requirements of cyber security to ensure system reliability and integrity. Additionally, STA will leverage other information technology systems supporting business processes and operations to improve efficiency and effectiveness of the STA mission.

FY 2016-FY 2019 Key Milestones
- Complete production of new trailer communication system.
- 9/2017 – Complete MGT production prototype and qualification testing.
- 1/2018 – Begin retirement of SGT’s.
- 6/2018 – Complete MGT First Production Unit.
- 6/2018 – Complete production of Replacement Armored Tractor

The Security/Safety Capability subprogram funding supports the following sub-elements: (1) Identifies, designs, and tests new fleet and mission technologies. Funding supports safety and security upgrades and enhancements to the secure trailers, analysis of intelligence data, dissemination of information and the application of emerging physical security technology. (2) Sustains and supports intensified training. Funding supports the technical equipment, logistics, curriculum development, and staffing necessary to conduct Special Response Force (SRF) training, Operational Readiness Training (ORT), Validation Force-on-Force (VFOF) exercises, and agent sustainment training. Sustainment training includes, but is not limited to, surveillance detection, tactics, advance driving, firearms and mission operations. Funds are utilized to obtain off-site training venues that are capable of supporting units or commands, necessary to maintain specialized federal agent skills and qualifications, including off-road drive and weapon training. (3) Maintains security and safety programs. Funding supports liaison with state and local law enforcement organizations; analysis of security methods and equipment; vulnerability assessments; development of the Safeguards and Security Plan and combat simulation computer modeling; validation of safety and security; and execution of safety studies and safety engineering for the Safety Basis, Nuclear Explosive Safety, and over-the-road safety issues. (4) Maintains the NNSA Emergency Operations Center (EOC) in Albuquerque, New Mexico, and trains and exercises the STA response capability. Funding supports the Emergency Management Program to include Federal Agent Incident Command System refresher and sustainment training.

FY 2016-FY 2019 Key Milestones

- Conduct Operational Readiness Training.
- Conduct performance-based assessments to evaluate critical system elements.
- Conduct annual VFOF.

The Infrastructure and C5 Systems subprogram funding sustains the infrastructure and command and control system platforms that the STA operates. This funding supports the following sub-elements: (1) Modernize and maintain classified command and control, communication, computer, and cyber (C5) systems activities to enhance required oversight of nuclear convoys. Funding supports operation of the Transportation Emergency Control Centers; communications maintenance; and the costs for operating relay stations in five states. (2) Expand, upgrade and maintain the STA facilities and equipment in support of federal agents and projected workload. Funding supports the utilities, maintenance, upgrades and required expansion projects for 68 facilities and their respective equipment. Facilities include, but are not limited to federal agent commands, vehicle electronic and mechanical facilities, relay stations, training facilities and facilities utilized to house support staff.

FY 2016-FY 2019 Key Milestones

- 1/2016 – Begin 5.x software upgrades to the Transportation Command and Control System.
- Continue ARES deployment into new tractor and vehicle platforms.
- Maintain facilities that support mission operations and agent training requirements.

The Program Management subprogram funding creates a well-managed, responsive, and accountable organization by employing effective business practices. This goal includes the following: (1) Provide for corporate functions including, technical document support and business operations that control, assist, and direct secure transport operations. This includes supplies, equipment and technical document production and regulation control processes. (2) Assess, evaluate and improve work functions and processes. Funding supports quality studies, self-inspections, routine STA intranet web support, configuration management, and business integration activities.

FY 2016-FY 2019 Key Milestones

- Conduct an independent review of critical functions within the organization to ensure compliance with requirements.

Operations and Equipment

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Mission Capacity		
• Inspect, test and maintain vehicle fleet to support mission requirements. • Optimize scheduling and transportation operations to meet transportation requirements. • Maintain and operate air transportation fleet. • Maintain the agent work force by conducting agent candidate class(es). • Provide support for limited life components and emergency management programs. • Upgrade and replace aging escort vehicles and armored tractors. • Design, evaluate, procure, and field a new Safeguards Transporter (Mobile Guardian Transporter) that will meet security and operational requirements, while maintaining the optimum fleet size prior to FY 2018. • Evaluate alternate design strategies for the MGT and achieve 60% design level.	• Continue to inspect, test and maintain vehicle fleet to support mission requirements. • Continue to optimize scheduling and transportation operations to meet transportation requirements. • Continue to maintain and operate air transportation fleet. • Continue to maintain the agent work force by conducting agent candidate class(es). • Continue to provide support for limited life components and emergency management programs. • Continue to upgrade and replace aging escort vehicles and armored tractors. • Design, evaluate, procure, and field the Mobile Guardian Transporter to meet security and operational requirements, while maintaining the optimum fleet size prior to FY 2018. • Achieve 100% design level for the MGT and 60% design testing for individual assemblies or components.	• The increase of $14.773 million primarily supports the design of the Mobile Guardian Transporter (MGT), the FPU and start of production for the Trailer Communications System (TCS), and the continued replacement of vehicles and tractors.
Security/Safety Capability		
• Conduct a validation exercise (VFOF) to evaluate organizational proficiencies in the following five essential TSS system elements: execute intelligence cycle, operational security, command/control/emergency management, federal agent protective force and physical security. • Conduct Emergency Operation Center exercises to validate the emergency management system effectiveness. • Operate the Transportation Safeguards System	• Continue to conduct a validation exercise (VFOF) to evaluate organizational proficiencies in the following five essential TSS system elements: execute intelligence cycle, operational security, command/control/emergency management, federal agent protective force and physical security. • Continue to conduct Emergency Operation Center exercises to validate the emergency management system effectiveness. • Continue to operate the Transportation	• The increase of $1.153 million supports the contractual services and munitions associated with Federal Agent training at off-site venues, along with the validation of security methods and systems.

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
(TSS) within the safety and security licenses, based on the updated/upgraded Safeguards and Security Plan. • Maintain the federal agent force skill sets, equipment and training tempo to meet GSP and workload requirements. • Maintain safety programs to ensure safe over-the-road operations to include: Nuclear Explosive Safety Study and Documented Safety Analysis. • Conduct vulnerability analysis and implement access controls at STA sites. • Provide an integrated domain awareness capability that ensures real-time situational awareness of the operating environment and supports decision-making. • Conduct Operational Readiness Training.	Safeguards System (TSS) within the safety and security licenses, based on the updated/upgraded Safeguards and Security Plan. • Continue to maintain the federal agent force skill sets, equipment and training tempo to meet GSP and workload requirements. • Continue to maintain safety programs to ensure safe over-the-road operations; to include a Nuclear Explosive Safety Study and Documented Safety Analysis. • Continue to conduct vulnerability analysis and implement access controls at STA sites. • Conduct Operational Readiness Training.	
Infrastructure and C5 Systems		
• Modernize the classified command and control communication, computer and cyber (C5) systems. • Continue the next generation communication (Advanced Radios Enterprise System) project incorporating secure end-to-end convoy communications beyond line of sight including the integration of VHF, UHF, dual cellular and satellite communications. • Maintain the long-term vitality of STA facilities with integrated planning and resource allocation.	• Continue the initiatives to modernize the C5 systems. • Continue the ARES project incorporating secure end-to-end convoy communications beyond line of sight including the integration of VHF, UHF, dual cellular and satellite communications. • Maintain the long-term vitality of STA facilities with integrated planning and resource allocation.	• The increase of $3.471 million is associated with the deployment of ARES into the existing fleet and new vehicle platforms.
Program Management		
• Provide corporate functions and business operations that control, assist and direct secure transportation operations. • Provide a consistent framework for planning, programming, budgeting and evaluation within Defense Programs.	• Continue to provide corporate functions and business operations that control, assist and direct secure transportation operations. • Continue to provide a consistent framework for planning, programming, budgeting and evaluation within Defense Programs.	• Additional funding of $572 thousand supports contract services and organizational costs across all business functions

Secure Transportation Asset Performance Measures

In accordance with the GPRA Modernization Act of 2010, the Department sets targets for, and tracks progress toward, achieving performance goals for each program. For more information, refer to the Department's FY 2013 Annual Performance Report.

	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Safe and Secure Shipments - Annual percentage of shipments completed safely and securely without compromise/loss of nuclear weapons/components or a release of radioactive material.							
Target	100% of shipments	100% of shipments	100% of shipments	100% of shipments	100% of shipments	100% of shipments	100% of shipments
Result	**Met** - 100						
Endpoint Target	Annually, ensure that 100% of shipments are completed safely and securely without compromise/loss of nuclear weapons/components or a release of radioactive material.						

Secure Transportation Asset
Capital Summary

(Dollars in Thousands)

	Total	Prior Years	FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Current	FY 2015 vs FY 2014
Capital Operating Expenses Summary (including (Major Items of Equipment (MIE)							
Capital Equipment >$500K (including MIE)	154,473	62,585	12,286	12,556	12,556	12,832	+276
Total, Capital Operating Expenses	**154,473**	**62,585**	**12,286**	**12,556**	**12,556**	**12,832**	**+276**
Capital Equipment > $500K (including MIE)							
Total Non-MIE Capital Equipment (>$500K)	154,473	62,585	12,286	12,556	12,556	12,832	+276
Total, Capital Equipment (including MIE)	**154,473**	**62,585**	**12,286**	**12,556**	**12,556**	**12,832**	**+276**
Total, Capital Summary	**154,473**	**62,585**	**12,286**	**12,556**	**12,556**	**12,832**	**+276**

Outyears for Secure Transportation Asset

(Dollars in Thousands)

	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Capital Operating Expenses Summary (including (Major Items of Equipment (MIE)				
Capital Equipment >$500K (including MIE)	13,114	13,403	13,698	13,999
Total, Capital Operating Expenses	**13,114**	**13,403**	**13,698**	**13,999**
Capital Equipment > $500K (including MIE)				
Total Non-MIE Capital Equipment (>$500K)	13,114	13,403	13,698	13,999
Total, Capital Equipment (including MIE)	**13,114**	**13,403**	**13,698**	**13,999**
Total, Capital Summary	**13,114**	**13,403**	**13,698**	**13,999**

Secure Transportation Asset
Program Direction

Overview

STA Program Direction provides for personnel to enhance the safety and security of the nuclear stockpile by: (1) conducting armed escorts of nuclear weapons, material, and components; (2) conducting air movements of limited life components and federal agents; (3) tracking nuclear convoys and providing emergency response capability; (4) performing staff oversight of three federal agent commands; (5) providing oversight to the design and implementation of classified security technologies; (6) providing critical skills training to the federal agent force and staff; (7) staffing and operating the Training and Logistics Command and conducting two 21-week training classes per year for new agents, and (8) performing administrative and logistical functions for the organization.

The total FTEs also support the federal agent force, federal pilots, emergency management, security and safety programs and all other key elements of the STA mission.

Highlights of the FY 2015 Budget Request

The STA will continue efforts to increase the Federal Agent strength to support workload requirements and provide Defense Programs with a known asset for planning LEP's and weapon campaigns. This will be accomplished by recruiting Federal Agents and conducting agent candidate classes. STA will support key safety-related initiatives to reduce worker's compensation expenditures. In addition, STA will support travel required to transport nuclear weapons, components and special nuclear material and also to validate safety and security requirements associated with weapon consolidation initiatives. The increased agent force will affect the costs for the Human Reliability Program, legal fees, and employee assistance programs. There will also be increases in fees associated with facility operations at the Albuquerque Complex, and services provided by the Department's Common Operating Environment.

Major Outyears Priorities and Assumptions

Continuously Improve Workforce Capability and Performance

Although assets and infrastructure are essential for successful mission implementation, the workforce is STA's most valuable and important resource. The skill and talent base required to support the mission must be continuously replenished, developed, and maintained. This includes everyone in the organization, from federal agents to senior management. Initial and continuing training and development programs will ensure existing staff is competent and proficient in their current positions. The STA will recruit highly experienced and innovative personnel, retain experienced personnel, and develop succession plans to ensure vacancies can be filled with little or no impact to the mission.

Drive an Integrated and Effective Organization

The STA will continuously monitor, evaluate, and improve operations to ensure mission is always achieved in an ever-changing operational environment. This includes activities that are directly related to the mission such as safeguards and security requirements and the business process operations in the organization. The STA will always strive to eliminate redundancies, improve performance and efficiency, and streamline operations.

Secure Transportation Asset
Program Direction
Funding

(Dollars in Thousands)

	FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Request	FY 2015 vs FY 2014 Enacted
Secure Transportation Asset (STA)					
Program Direction - Albuquerque					
Salaries and Benefits	77,267	80,056	83,675	81,827	+1,771
Travel	6,927	6,647	6,647	6,652	+5
Other Related Expenses	7,845	10,415	10,415	12,483	+2,068
Total, Program Direction - Albuquerque	**92,039**	**97,118**	**100,737**	**100,962**	**+3,844**
FTEs	**544**	**576**	**576**	**595**	**+19**

Outyears for Secure Transportation Asset

(Dollars in Thousands)

	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Secure Transportation Asset (STA)				
Program Direction - Albuquerque				
Salaries and Benefits	86,437	89,638	90,954	92,774
Travel	6,787	6,842	6,982	7,122
Other Related Expenses	12,114	12,115	12,711	12,942
Total, Program Direction - Albuquerque	**105,338**	**108,595**	**110,647**	**112,838**
FTEs	**618**	**609**	**601**	**591**

Secure Transportation Asset
Explanation of Major Changes
(Dollars in Thousands)

	FY 2015 vs FY 2014 Enacted
Secure Transportation Asset/Program Direction	
Salaries and Benefits: The increase supports the cost of conducting two 24 man Agent Candidate Training courses and the backfill of staff vacancies.	**+1,771**
Travel: The increase is attributable to mission related travel costs for Federal Agents and staff.	**+5**
Other Related Expenses: The increase supports costs associated with the human reliability program, training, and the DOE Common Operating Environment.	**+2,068**
Total, Secure Transportation Asset/Program Direction	**+3,844**

Secure Transportation Asset
Program Direction

Description

The STA Program Direction provides personnel to enhance the safety and security of the nuclear stockpile by: (1) conducting armed escorts of nuclear weapons, material, and components; (2) conducting air movements of limited life components and federal agents; (3) tracking nuclear convoys and providing emergency response capability; (4) performing staff oversight of three federal agent commands; (5) providing oversight to the design and implementation of classified security technologies; (6) providing critical skills training to the federal agent force and staff; (7) staffing and operating the Training and Logistics Command and conducting two 21-week training classes per year for new agents, and (8) performing administrative and logistical functions for the organization.

The total FTEs also support the federal agent force, federal pilots, emergency management, security and safety programs and all other key elements of the STA mission. The onboard count may not match the FTEs.

Salaries and benefits are provided for the program staff at Albuquerque, New Mexico; and Fort Chaffee, Arkansas, for federal agents and the support staff at the three federal agent force locations (Albuquerque, New Mexico; Oak Ridge, Tennessee; and Amarillo, Texas). It also includes overtime, workmen's compensation, and health/retirement benefits associated with federal agents, secondary positions, and support staff.

FY 2016-FY 2019 Key Milestones

- Support multiple LEP transport priorities and other prioritized missions.
- 9/2016 – Restore Federal Agent strength levels to support mission requirements.

Travel is provided for travel associated with annual secure convoys, training at other federal facilities and military installations, and program oversight.

FY 2016-FY 2019 Key Milestones

- Support travel to meet prioritized missions

Other Related Expenses provides required certification training for the handling of nuclear materials by federal agent forces, as well as staff professional development. Maintains a human reliability program for federal agents and staff. Provides for Permanent Change of Station (PCS) moves and other Contractual Service requirements such as the Albuquerque Complex fee, which includes a portion of the security, utilities and other services rendered. Also includes payment for the Department of Energy Common Operating Environment (DOECOE) services.

FY 2016-FY 2019 Key Milestones

- Continue to identify methods that streamline the management and adjudication of human reliability issues, while maintaining the high standards for nuclear courier duties.

Program Direction

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Salaries and Benefits		
• Recruit, hire, and retain quality personnel based on an analysis of current and future mission needs. • Maintain agent strength to support workload requirements. • Effectively manage overtime expenditures. • Conduct agent candidate classes. • Support key safety-related initiatives to reduce workers' compensation expenditures.	• Recruit, hire, and retain quality personnel based on an analysis of current and future mission needs. • Continue to maintain agent strength to support workload requirements. • Continue to effectively manage overtime expenditures. • Continue to conduct agent candidate classes. • Continue to support key safety-related initiatives to reduce worker's compensation expenditures.	• The increase of \$1.171 million supports a total of approximately 600 Federal Agents and staff FTEs.
Travel		
• Support travel required to transport nuclear weapons, components and special nuclear material. • Support federal facilities that provide unique training to maintain agent skill sets. Support travel to identify and validate safety and security requirements associated with the weapon consolidation initiatives.	• Continue to support travel required to transport nuclear weapons, components and special nuclear material. • Continue to support federal facilities that provide unique training to maintain agent skill sets. Continue to support travel to identify and validate safety and security requirements associated with the weapon consolidation initiatives.	• The increase of \$5 thousand is attributable to mission related travel costs for Federal Agents and staff.
Other Related Expenses		
• Support the fees paid to the Albuquerque Complex. • Support the fees for additional services provided by the Department's Common Operating Environment. • Provide for legal fees, employee assistance program and transit subsidy. • Support the Human Reliability Program requirements.	• Continue to support the fees paid to the Albuquerque Complex. • Continue to support the fees for services provided by the Department's Common Operating Environment. • Continue to provide for legal fees, employee assistance program and transit subsidy. • Continue to support the Human Reliability Program requirements.	• The increase of \$2.068 million supports costs associated with the application of the Human Reliability Program requirements to designated position, including the Agent recruits.

Nuclear Counterterrorism Incident Response Program

Overview

The Nuclear Counterterrorism Incident Response (NCTIR) Program provides a versatile, capable, worldwide nuclear and radiological emergency response with the technical capability to respond to and manage any radiological/nuclear incident. The program ensures that capabilities are in place to respond to all NNSA or Department of Energy (DOE) facility emergencies while serving as the Nation's premier responder to any nuclear or radiological incident within the United States or abroad. The NCTIR Program operates and manages the DOE Headquarters Emergency Operations Center and Alternate Operations Center, to include the Emergency Communications Network, to support day-to-day emergency management/response and National-level nuclear counterterrorism/counterproliferation missions. The program also strengthens National Technical Nuclear Forensics through interagency collaboration as well as the scientific, technical, and operational capabilities of the radiological/nuclear device disposition and detonation programs. NCTIR also ensures the performance of current and future National and Departmental Essential Functions through Continuity of Government requirements.

The threat of nuclear terrorism affecting U.S. interests, domestically or abroad, is a long-term problem with no known end state. Terrorist groups continue to seek nuclear technologies and state actors, many with unfavorable views of the U.S. or questionable domestic security situations, continue to develop new nuclear weapons and delivery systems. As the technical and scientific lead for U.S. nuclear crisis response, NCTIR plays a central role in preparedness to respond to these threats.

Highlights of the FY 2015 Budget Request

The NCTIR FY2015 request includes funding to provide technical equipment and training to established regional Stabilization capabilities to address the threat of nuclear counterterrorism. NNSA partners with the FBI to roll out Stabilization to selected cities and provide yearly recurring sustainment training and equipment maintenance. The request also provides funding for organic communications and IT infrastructure for day-to-day emergency management as well as those National Assets responding in support of the U.S. To provide critical infrastructure and ensure a secure cyber-environment, corrective action plan directed upgrades to the classified and unclassified networks continuous monitoring capability, and additional corrections to ensure device port security are identified as required to meet national cyber-security standards. Critical software and hardware upgrades are needed to replace antiquated operating systems currently in use on the ECN and provide redundant capability for classified call management. Failure to provide these upgrades exposes the network to potential security vulnerability and degraded secure voice capabilities.

Major Outyear Priorities and Assumptions

Outyear funding levels for the NCTIR Program total $686,210,000 for FY 2016 through FY 2019. The outyear numbers for NCTIR reflect major program priorities through the FYNSP period.

- Sustain our mission, maintain readiness and recapitalize equipment to maintain state of the art capabilities.
- Adapt to factors such as increasing demand for nuclear/radiological expertise, emergence of new technologies and expanding threats of proliferation and nuclear terrorism.
- Sustainment of stabilization capability.
- Continue international efforts in radiological search training, and provide detection equipment and technical support for radiological and nuclear incidents and counterterrorism.

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Nuclear Counterterrorism Incident Response Program
Funding

(Dollars in Thousands)

	FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Request	FY 2015 vs FY 2014 Enacted
Nuclear Counterterrorism Incident Response Program					
Emergency Response	134,733	143,748	143,748	139,077	-4,671
National Technical Nuclear Forensics	10,041	11,000	11,000	10,250	-750
Emergency Management	5,668	6,195	6,195	5,668	-527
Operations Support	8,373	8,350	8,350	11,850	+3,500
Inernational Emergency Management and Cooperation	6,233	7,000	7,000	6,595	-405
Nuclear Counterterrorism	62,040	51,950	51,950	0	-51,950
Total, Nuclear Counterterrorism Incident Response Program	**227,088**	**228,243**	**228,243**	**173,440**	**-54,803**

Outyears for Nuclear Counterterrorism Incident Response Program

(Dollars in Thousands)

	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Nuclear Counterterrorism Incident Response Program				
Emergency Response	134,152	137,629	140,503	143,614
National Technical Nuclear Forensics	10,041	10,041	10,541	10,500
Emergency Management	6,248	6,248	6,358	6,870
Operations Support	8,714	9,350	9,850	9,328
Inernational Emergency Management and Cooperation	6,227	6,227	6,357	7,412
Nuclear Counterterrorism	0	0	0	0
Total, Nuclear Counterterrorism Incident Response Program	**165,382**	**169,495**	**173,609**	**177,724**

Nuclear Counterterrorism Incident Response Program
Explanation of Major Changes
(Dollars in Thousands)

	FY 2015 vs FY 2014 Enacted
Nuclear Counterterrorism Incident Response Program	
Emergency Response: This decrease (-$4,055, or -2.9%) reflects reduced training and delays in equipment recapitalization in support of the Radiological Assistance Program. The decrease ($0.636) in Other Assets reflects reduced assistance provided to other federal agencies and state and local jurisdictions, and reduced support for Special Security Events (examples of Special Security Events are Presidential events and the World Series, Boston Marathon, and Superbowl) and National level exercises. The program will continue to focus to sustain 7 Stabilization cities by providing training and equipment for this joint effort with the FBI.	**-4,671**
National Technical Nuclear Forensics: This decrease (-6.8%) reflects suspension of P-Tunnel forensic characterization, impacting measurements associated with the response to an improvised nuclear device. A reduction to International Technical Exchanges, specifically projects with the United Kingdom and with the Israel Atomic Energy Commission. Elimination of atmospheric prediction model development and integration of weather models, increasing response time to compare and synthesize results. Reduction in scope of exercising device assessment operations in a pre-detonation device scenario, inhibiting the development and readiness of this operational capability.	**-750**
Emergency Management: This decrease (-8.5%) reflects the reduction for a one-time purchase of special radio equipment to meet COOP requirements. It also affects NCTIR plans for 4-5 no notice exercises and further DOE-wide integration of emergency management activities.	**-527**
Operations Support: This increase (41.9%) will provide funding for initial equipment upgrades required for the expansion of the Emergency Communications Network (ECN) that has grown from 32 fixed site nodes to 88 fixed site and mobile satellite nodes and an increase in users. The equipment upgrades and technological improvements to the network will support emerging operational requirements, in addition to supporting a highly mobile and dynamic communications environment for our National Response Assets. Baseline funding will support day-to-day operations and maintenance of the ECN.	**+3,500**
International Emergency Management and Cooperation: This decrease (-5.8%) reflects a reduction to coordinating emergency management international activities with partner nations. Bilateral/multilateral support will be limited to completion of ongoing projects and sustainability. Some of this activity is funded on a Work for Others (WFO) basis by the State Department, and NCTIR will continue to work with State to work out annual cost sharing.	**-405**
Nuclear Counterterrorism: Decrease reflects the transfer of these activities to Counterterrorism and Counterproliferation Programs.	**-51,950**
Total, Nuclear Counterterrorism Incident Response Program	**-54,803**

Nuclear Counterterrorism Incident Response Program
Emergency Response

Description
The Emergency Response subprogram serves as the last line of national defense in the face of a nuclear or radiological incident or accident. The mission is to safeguard the public, environment, and emergency responders by providing a responsive, flexible, efficient, and effective nuclear/radiological emergency response capability for any nuclear or radiological incident domestically or abroad by applying the unique technical expertise within NNSA's nuclear security enterprise. The strategic approach for emergency response activities is to ensure a central point of contact and an integrated response to all emergencies. This is accomplished by ensuring the appropriate infrastructure is in place to provide command, control, coordination, and communications, and response personnel are properly organized, trained and equipped to successfully resolve an incident.

Nuclear Emergency Support Team (NEST)
This activity provides the Department of Homeland Security (DHS), Federal Bureau of Investigation (FBI) and Department of Defense (DoD) with technical assistance teams to respond to incidents including terrorist threats involving nuclear materials. The primary missions of the Teams (Accident Response Group (ARG), Radiological Assistance Program (RAP), Nuclear/Radiological Advisory Team (NRAT) and Joint Technical Operations Team (JTOT) are to search for, identify, characterize, render safe and dispose of any nuclear or radiological device.

Other Assets
Additional assets provide assistance to other federal agencies and local and state jurisdictions and conduct exercises in response to emergencies involving nuclear/radiological materials. The DOE/NNSA teams work closely with other DOE elements as well as other federal agencies -- DHS, Federal Emergency Management Agency (FEMA), Environmental Protection Agency (EPA), Nuclear Regulatory Commission (NRC) and DoD -- and provides support to the NEST programs to ensure the safe resolution of an incident and protect public safety and the environment.

Render Safe Stabilization Operations
This activity provides technical assistance and training to the FBI and DoD to prevent nuclear terrorism using technology and regional teams to locate and identify radiological/nuclear devices and to prevent these devices from detonating.

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Nuclear Emergency Support Team		
• Provide technical assistance to federal, state, tribal, local, and international government agencies to deal with incidents, including terrorist threats that involve the potential use of nuclear materials, based on the Threat Credibility Estimate (TCE) for each event. • Address threats posed by domestic and foreign terrorists likely to have both the will and means to employ nuclear devices and weapon-usable nuclear materials. • Continue collection and expert analysis of radiological material signatures through DOE Radiological Triage program. • Provide DOE/NNSA technical assistance for the planning, execution, and evaluation of National-level exercises including, but not limited to, Marble Challenges (MC) and nuclear weapons accident incident exercise (NUWAIX) during which DOE/NNSA may be the Lead Federal Agency. • Continue development of next generation neutron diagnostic tool for DOE/NNSA response teams.	• Provide technical assistance to federal, state, tribal, local, and international government agencies to deal with incidents, including terrorist threats that involve potential use of nuclear materials, based on the TCE for each event. • Provide technical assistance to a Lead Federal Agency to search for or detect illicit radiological or nuclear material. • Continue collection and expert analysis of radiological material signatures through DOE Radiological Triage program. • Sustain Render Safe capabilities for an identified critical mission area in support of Principle Operational Partner. This effort includes predictive capability. • Lead interagency NUWAIX with participation by DoD, FBI and other Federal agencies. • Address threats posed by domestic and foreign terrorists likely to have both the will and means to employ nuclear devices and weapons-usable nuclear materials. **FY 2016-FY 2019** • Provide technical assistance to federal, state, tribal, local, and international government agencies to deal with incidents, including terrorist threats that involve potential use of nuclear materials, based on the TCE for each event. • Provide technical assistance to a Lead Federal Agency to search for or detect illicit radiological or nuclear material. • Continue collection and expert analysis of radiological material signatures through the DOE Radiological Triage program.	• This decrease (-$4,055) reflects reduced training and deferrals in equipment recapitalization in support of the Radiological Assistance Program.

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
	• Sustain Render Safe capabilities for an identified critical mission area in support of Principal Operational Partner. This effort includes predictive capability. • Lead interagency NUWAIX with participation by DoD, FBI and other Federal agencies. • Address threats posed by domestic and foreign terrorists likely to have both the will and means to employ nuclear devices and weapons-usable nuclear materials.	
Other Assets		
• Facilitate radiological response and recovery efforts in the event of the intentional or accidental release of radiological or nuclear material. • Inform public health officials on evacuation guidance and health effects from the accidental or intentional release of radiological materials. • Serve as the lead Federal Agency for National level Exercise.	• Maintain commensurate training to accommodate requests to the Consequence Management Home Team (CMHT). Sustain data telemetry systems for communications between the field teams and CMHT. • Facilitate radiological response and recovery efforts in the event of the intentional or accidental release of radiological or nuclear material. • Inform public health officials on evacuation guidance and health effects from the accidental or intentional release of radiological materials. • Work jointly with the Federal coordinating agency, which is usually DHS/FEMA, during any radiological accident or incident. • Coordinate with the EPA/NRC and other elements within DOE, and provide support to the NEST programs to safeguard the public and environment to ensure the successful resolution of an accident or incident. • Serve as the lead Federal Agency for a National level Exercise. **FY 2016-FY 2019** • Maintain commensurate training to accommodate broader base of requests to the CMHT. Sustain data telemetry systems for communications	• The decrease ($0.636) in Other Assets reflects reduced assistance provided to other federal agencies and state and local jurisdictions. Reduced support for Special Security Events (examples of Special Security Events are the World Series, Boston Marathon, and Superbowl) and National level exercises. • Decrease reflects deferred equipment recapitalization.

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
	between the field teams and CMHT. • Facilitate radiological response and recovery efforts in the event of the intentional or accidental release of radiological or nuclear material. • Inform public health officials on evacuation guidance and health effects from the accidental or intentional release of radiological materials. • Work jointly with the Federal coordinating agency, which is usually DHS/FEMA, during any radiological accident or incident. • Coordinate with the EPA/NRC and other elements within DOE, and provide support to the NEST programs to safeguard the public and environment to ensure the successful resolution of an accident or incident. • Serve as the lead Federal Agency for National level Exercise.	
Render Safe Stabilization Operations		
• In coordination with the FBI, continue deployment of stabilization capability for one new city. • Sustain capability for 7 existing Stabilization cities including training and equipment maintenance. • Continue production of the second generation of stabilization equipment.	• Sustain capability for 7 Stabilization cities including training and equipment maintenance. **FY 2016-FY 2019** • Sustain capability for 7 Stabilization cities including training and equipment maintenance.	• This small increase will enable the program to continue to focus and sustain 7 Stabilization cities by providing training and equipment for this joint effort with the FBI.

Nuclear Counterterrorism Incident Response Program
National Technical Nuclear Forensics

Description

The National Technical Nuclear Forensics (NTNF) subprogram maintains the operational capability for the Pre-Detonation Device technical nuclear forensics program and provides operational support to the Post-Detonation and Bulk Special Nuclear Materials (SNM) Analysis technical nuclear forensics programs. The NTNF subprogram is a Homeland Security Council (HSC)/National Security Council (NSC) sponsored policy initiative, which aims to establish missions, institutionalize roles and responsibilities and enable operational support for pre-detonation and post-detonation nuclear forensics and attribution programs. This support includes, but is not limited, to training and exercises, equipment purchases and maintenance, logistics, readiness to deploy ground sample collection, device disposition, and examination teams to conduct laboratory operations in support of bulk actinide and post-detonation forensics.

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
National Technical Nuclear Forensics		
• Provide capability and support to the interagency NTNF program. • Maintain and improve capability and readiness to respond to pre- and post- detonation events. • Plan and participate in pre- and post- detonation NTNF exercises. • Execute a full scale ground collections exercise. • Continue improvements to the NTNF Data Evaluation Program. • Execute an end-to-end Disposition and Forensics Evidence Analysis Team (DFEAT) exercise. • Continue improvements and maintain P-Tunnel in support of the Pre-Detonation Device Program. • Build and maintain an objective operational capability for the Bulk Special Nuclear Materials program (BSAP).	• Provide capability and support to the interagency NTNF program. • Reduce International Technical Exchanges with the United Kingdom and the Israel Atomic Energy Commission. • Maintain capability and readiness to respond to pre- and post- detonation events. • Execute a full scale ground collections exercise. • Plan and participate in pre- and post- detonation NTNF exercises. • Suspend P-Tunnel forensic characterization. • Maintain P-Tunnel in support of the Pre-Detonation Device Program. • Reduce work scope for an objective operational capability for the BSAP. **FY 2016-FY 2019** • Provide capability and support to the interagency NTNF program. • Maintain and improve capability and readiness to respond to pre- and post- detonation events. • Refine the Concept of Operations and pursue the training and technology to support FBI and DoD in post-detonation forensics. • Continue improvements and maintain P-Tunnel in support of the Pre-Detonation Device Program. • Refine and maintain an objective operational capability for the Bulk Special Nuclear Materials program (BSAP).	• This decrease (-6.8%) reflects suspension of P-Tunnel forensic characterization, impacting measurements associated with the response to an improvised nuclear device. A reduction to International Technical Exchanges, specifically projects with the United Kingdom under the auspices of JOWOG-29 and with the Israel Atomic Energy Commission. Elimination of atmospheric prediction model development and integration of DELFIC and NARAC, increasing response time to compare and synthesize results. Reduction in scope of exercising device assessment operations in a pre-detonation device scenario, inhibiting the development and readiness of this operational capability.

Nuclear Counterterrorism Incident Response Program
Emergency Management

Description

The Emergency Management subprogram develops and implements specific programs, plans, and systems to minimize the impacts of emergencies on worker and public health and safety, the environment, and national security. This is accomplished by promulgating appropriate Departmental policies and implementing requirements and guidance; developing and conducting training and other emergency preparedness activities; supporting DOE/NNSA readiness assurance activities and participating in interagency emergency planning and coordination activities. The objective is to continue to have a fully implemented and fully integrated Departmental comprehensive emergency management system throughout the nuclear security enterprise.

The Emergency Management subprogram serves as the single point of contact for implementing and coordinating emergency management policy, preparedness, and response activities within DOE/NNSA, including managing and coordinating NNSA field and contractor implementation of emergency management policy.

The Emergency Operations Training Academy (EOTA) is an academically recognized training and development center that remains on the cutting edge of technology and innovation. It is the Office of Emergency Operations point of service for training development to enhance the readiness of personnel in the emergency operations community.

The Continuity Program (CP) continues to include responsibility for all of DOE and NNSA and is a HSC/NSC required policy initiative. These programs develop the Headquarters and the field Continuity of Operations and Continuity of Government plans that are updated constantly.

Emergency Management

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Emergency Management		
• Conduct four no-notice exercises at DOE/NNSA sites to gauge emergency preparedness. • Conduct activities to promote consistency of emergency management practices at DOE/NNSA sites and in implementing emergency planning for severe events. • EOTA will continue to serve as the primary point of training for first responder and render safe activities. • Complete the National Communications System directive (NCS) 3-10 (Federal) communications equipment and training requirements for the National Capital Region as well as Albuquerque, New Mexico. • Participate in periodic continuity training and exercises as required. • Update and implement departmental continuity policy and procedures. • Continue with the delivery of intermediate and advanced-level Incident Command System training courses, in addition to business system improvement.	• Conduct four-to-five no-notice exercises at DOE/NNSA sites to gauge emergency preparedness. • Conduct activities to promote consistency of emergency management practices at DOE/NNSA sites and in implementing emergency planning for severe events. • Reduction to COOP for one-time radio equipment purchase. • Continue to implement emergency management policy for DOE/NNSA sites. • Continue to update and implement departmental policy and procedures. • Continue to serve as the primary point of training for first responder and render safe activities. • Continue with the delivery of intermediate and advanced-level Incident Command System training courses, in addition to business system improvement. **FY 2016-FY 2019** • Conduct four to five no-notice exercises at DOE/NNSA sites to gauge emergency preparedness. • Conduct activities to promote consistency of emergency management practices at DoD/NNSA sites and in implementing emergency planning for severe events. • Continue to implement emergency management policy for DOE/NNSA sites. • Continue to update and implement departmental policy and procedures. • Continue to serve as the primary point of training for first responder and render safe activities.	• This decrease (-8.5%) reflects the reduction for a one-time purchase of special radio equipment to meet COOP requirements. NCTIR still plans to conduct 4-5 no notice exercises and further DOE-wide integration of emergency management activities in this program.

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
	• Continue with the delivery of intermediate and advanced-level Incident Command System training courses, in addition to business system improvement.	

Nuclear Counterterrorism Incident Response Program
Operations Support

Description
Emergency Operations Support operates the DOE Emergency Operations Centers and the Emergency Communications Network (ECN). The DOE Headquarters Emergency Operations Center provides the core functions of supporting Departmental command, control, communications, Geographic Information System (GIS) data and situational intelligence requirements for all categories of DOE emergency response situations on a 24/7/365 day basis.

The Emergency Communications Network (ECN) is the Department's communications means to manage energy emergencies throughout the complex. The network supports **classified** and **unclassified** voice, video, and data transmissions. The system is expected to grow to over 100 nodes, a 68% increase over 2005, and a 13.6% increase over FY2013. The ECN provides support for the Legacy and COOP missions and the Response/Render Safe, Forensics, and Counterterrorism missions. The expansion has included the installation of nodes into Other Government Agencies and other countries.

Operations Support

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Operations Support		
• Continue supporting National Response, COOP/Legacy, Forensics and Counterterrorism elements. • Continue maintenance and operation of the ECN in order to provide a scalable, interoperating system capable of seamlessly linking key Emergency Management Team personnel to provide real-time support to the DOE/NNSA Headquarters Emergency Management Team. • Address critical deficiencies and correct to achieve full system accreditation.	• Continue maintenance and operation of the ECN in order to meet the National Security mission requirements and to support the NNSA Network vision. • Continue supporting National Response, COOP/Legacy, Forensics and Counterterrorism elements. • Address critical deficiencies and correct to achieve full system accreditation. • Complete Corrective Action Plans. **FY 2016-FY 2019** • Continue maintenance and operation of the ECN in order to meet the National Security mission requirements and to support the NNSA Network vision. • Address critical deficiencies and corrections to achieve full system accreditation.	• The increase of (41.9%) will support initial ECN equipment deficiency upgrades and maintenance. • Provide initial implementation of virtualization servers, network backup servers and new video teleconferencing systems. • Install redundant Classified IP Call Manager, redundant Unclassified IP Call Manager, Network Acceleration, increase network satellite communications, and desktop computers throughout the complex.

Nuclear Counterterrorism Incident Response Program
International Emergency Management and Cooperation

Description

The International Emergency Management and Cooperation (IEMC) subprogram develops program plans and infrastructure, provides technical assistance, and designs, organizes, and conducts training to strengthen and harmonize emergency management systems worldwide. Current ongoing cooperation involves more than 80 countries and 10 international organizations with key cooperative activities involving Argentina, Brazil, Cambodia, Canada, Chile, China, Denmark, Djibouti, Finland, France, Iceland, India, Iraq, Israel, Japan, Malaysia, Mexico, Morocco, Norway, Pakistan, Philippines, Russia, Singapore, South Africa, South Korea, Sweden, Thailand, Taiwan, and Vietnam. The NNSA will continue to liaise with, and participate in projects sponsored by, international organizations (International Atomic Energy Agency (IAEA), Nuclear Energy Agency, European Union (EU), North Atlantic Treaty Organization (NATO), Group of 8 (G8), World Health Organization (WHO), World Meteorological Organization (WMO), and Arctic Council), exhibiting leadership under assistance and cooperation agreements to provide consistent emergency plans and procedures, effective early warning and notification of nuclear/radiological incidents or accidents, and delivery of assistance to an affected nation should an incident/accident occur.

International Emergency Management and Cooperation

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
International Emergency Management and Cooperation		
• Design, organize and conduct specialized emergency management training courses and programs to meet the specific emergency management needs of partner nations. • Provide communication and radiation monitoring equipment, technical assistance and training for IAEA and foreign government emergency programs to address nuclear/radiological incidents and accidents including lost radiological sources. • Develop a robust and harmonized international management system implementing specialized emergency response activities, including developing emergency policy, plans and procedures and radiological search, training, protocols and techniques.	• Reduce program support to develop, design, organize and conduct specialized emergency management training courses and programs to meet the specific emergency management needs of partner nations. • Continue to provide enhanced communication and radiation monitoring equipment, technical assistance and training IAEA and foreign government emergency programs to address nuclear/radiological incidents and accidents including lost radiological sources. • Continue to develop a robust and harmonized international management system implementing specialized emergency response activities, including developing emergency policy, plans and procedures and radiological search, training, protocols and techniques. **FY 2016-FY 2019** • Continue to develop, design, organize and conduct specialized emergency management training courses and programs to meet the specific emergency management needs of partner nations. • Continue to provide enhanced communication and radiation monitoring equipment, technical assistance and training for IAEA and foreign government emergency programs to address nuclear/radiological incidents and accidents including lost radiological sources. • Develop a robust and harmonized international management system implementing specialized emergency response activities, including	• This decrease (-5.8%) reflects a reduction to emergency management international activities with partner nations.

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
	developing emergency policy, plans and procedures and radiological search, training, protocols and techniques.	

Counterterrorism and Counterproliferation Programs
Nuclear Counterterrorism

Description

The Nuclear Counterterrorism (NCT) subprogram serves as the premier U.S. Government program for technical expertise regarding Improvised Nuclear Devices as well as proliferant foreign and non-U.S. stockpile weapon design and assessment activities as they relate to nuclear terrorism, nuclear counterproliferation, and national render safe activities. The NCT subprogram has developed specialized capabilities within the NNSA nuclear weapons design laboratories and production facilities to provide the necessary analysis, policy support, and contingency planning needed by other agencies to counter the threat of a stolen, modified, or improvised nuclear threat device. In the FY 2015 request, these activities are funded under Counterterrorism and Counterproliferation Programs.

Nuclear Counterterrorism

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Nuclear Counterterrorism		
• Execute nuclear materials assessment in accordance with NCT roadmaps. • Perform non-experimental Nuclear Threat Device and Improvised Nuclear Device assessment, modeling, and experimentation. • Continue development and testing of render safe tools. • The Tier Threat Modeling Archive – Validation (TTMA-V) project experiment series was delayed due to budget adjustments. • Materials characterization efforts, in accordance with the Nuclear Materials Roadmap, were decreased. • Initial standoff disablement planning and experimental efforts were delayed due to budget adjustments. • Maintain Sigma 20 program and sustain capabilities to assess nuclear threat devices. • To meet DoD operational needs, computational investigations will begin to evaluate the ability to predict the behavior of non-stockpile nuclear materials or components in response to innovative approaches to standoff disablement. • Maintain modeling and simulation capabilities for post-detonation forensics of a NTD. • Support international collaboration activities through NTR channels to conduct evaluations of nuclear terrorism risks and scenarios, as well as materials attractiveness studies under the US/Japan Nuclear Security Working Group. • Strengthen WMD counterterrorism capabilities by conducting counterterrorism security dialogues with key advanced civil nuclear countries and designing, developing, and conducting	• Activities requested under Counterterrorism and Counterproliferation Programs.	• FY 2015 activities requested under Counterterrorism and Counterproliferation Programs.

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
nuclear/radiological counterterrorism tabletop exercises domestically and internationally. • Manage interagency monitoring, assessment, and response process for open source.		

Nuclear Counterterrorism Incident Response Program Performance Measures

In accordance with the GPRA Modernization Act of 2010, the Department sets targets for, and tracks progress toward, achieving performance goals for each program. For more information, refer to the Department's FY 2013 Annual Performance Report.

	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019

Emergency Operations Readiness Index - Emergency Operations Readiness Index (EORI) measures the overall organizational readiness to respond to and mitigate radiological or nuclear incidents worldwide. (This index is measured from 1 to 100 with higher numbers meaning better readiness--the first three quarters will be expressed as the readiness at those given points in time whereas the year end will be expressed as the average readiness for the year's four quarters).

	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Target	91 EORI	91 EORI	91 EORI	91 EORI	91 EORI	91 EORI	91 EORI
Result	**Not Met** - 81						
Endpoint Target	Annually, maintain an Emergency Operations Readiness Index of 91 or higher.						

Nuclear Counterterrorism Incident Response Program
Capital Summary

(Dollars in Thousands)

	Total	Prior Years	FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Current	FY 2015 vs FY 2014
Capital Operating Expenses Summary (including (Major Items of Equipment (MIE)							
Capital Equipment >$500K (including MIE)	4,679	2,813	30	31	32	33	+2
Total, Capital Operating Expenses	**4,679**	**2,813**	**30**	**31**	**32**	**33**	**+2**
Capital Equipment > $500K (including MIE)							
Total Non-MIE Capital Equipment (>$500K)	4,679	4,448	30	31	31	32	+1
Total, Capital Equipment (including MIE)	**4,679**	**4,448**	**30**	**31**	**31**	**32**	**+1**
Total, Capital Summary	**4,679**	**4,448**	**30**	**31**	**31**	**32**	**+1**

Outyears for Nuclear Counterterrorism Incident Response Program

(Dollars in Thousands)

	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Capital Operating Expenses Summary (including (Major Items of Equipment (MIE)				
Capital Equipment >$500K (including MIE)	33	34	35	36
Total, Capital Operating Expenses	**33**	**34**	**35**	**36**
Capital Equipment > $500K (including MIE)				
Total Non-MIE Capital Equipment (>$500K)	33	34	35	36
Total, Capital Equipment (including MIE)	**33**	**34**	**35**	**36**
Total, Capital Summary	**33**	**34**	**35**	**36**

Counterterrorism and Counterproliferation Program[a]

Overview

The Counterterrorism and Counterproliferation (CTCP) Program advances U.S. Government counterterrorism and counterproliferation goals through innovative science, technology, and policy-driven solutions. The program supports scientific efforts to understand nuclear threat devices (NTDs), including Improvised Nuclear Devices (INDs), lost or stolen foreign nuclear weapons, and their constituents (namely nuclear and energetic materials). CTCP's scientific and technical activities conducted will feed into the Nuclear Threat Device Predictive Framework, an enduring capability leveraging stockpile tools. Key CTCP technical activities sustain and exercise the U.S. Government's ability to understand and prevent nuclear terrorism and to counter nuclear device proliferation. Utilizing this unique understanding of threats, CTCP reduces the risk of nuclear terrorism by conducting technically-informed national and international outreach to strengthen nuclear counterterrorism capabilities through tabletop exercises, bilateral dialogues, and technical exchanges. This program is also a key nexus to coordinate and integrate other nuclear technical counterterrorism efforts existing within the Federal government.

CTCP greatly leverages the nuclear security enterprise to maintain our body of unique nuclear threat device expertise and—as a key U.S. Government capability provider in this area—is heavily utilized by interagency partners for technical/device-related problem solving. The NNSA manages these demands through the Counterterrorism and Counterproliferation Leadership Council, consisting of senior leaders from across the Executive Branch. The FY 2015 CTCP request will sustain and execute Nuclear Counterterrorism (NCT) efforts within the nuclear security enterprise while coordinating and performing mission management of all relevant CTCP programs within the NNSA, as outlined in the *Counterterrorism and Counterproliferation Management Plan*.

Highlights of the FY 2015 Budget Request

CTCP will sustain NTD assessment capabilities and expertise, including unique modeling, and limited high explosives (HE) characterization efforts. To this end, CTCP will continue Nuclear Material Characterization research on top-priority nuclear materials over the next five years. Additionally, CTCP will sustain the Sigma 20 Program to protect IND design information and manage the assessment of open source information, focusing on the evaluation of response options when appropriate. CTCP will also sustain international technical and policy engagements through the Nuclear Threat Reduction (NTR) Channels, as well sustaining bilateral counterterrorism security dialogues with advanced civil nuclear partner countries and outreach to strengthen weapons of mass destruction (WMD) counterterrorism capabilities domestically and abroad.

At the request of the Department of Defense (DoD) and in support of national policy objectives, CTCP will gather existing experimental and other data, identify information and modeling gaps, and develop the ability to predict the behavior of non-stockpile nuclear materials or components in response to innovative approaches for standoff disablement. This activity includes experimental and computational investigations that improve our confidence in modeling capabilities. CTCP will also continue to support key nuclear forensics modeling efforts at the National Laboratories in support of attribution.

Major Outyear Priorities and Assumptions

Outyear funding levels for CTCP total $340,739,000 for FY 2016 through FY 2019. The CTCP Programs' outyear priorities are twofold: to improve and sustain our ability to understand nuclear threats by improving our CTCP capabilities and applying the CTCP effort to enhancing the operational capabilities of key partners.

The CTCP Program goals are centered on improving the ability to assess nuclear threat devices and inform national and international policy decision making processes to minimize the possibility of a nuclear detonation or nuclear terrorist event. A Major CTCP outyear priority will be continuing Nuclear Material Characterization research. Several factors are critical to the overall achievement of the CTCP Programs' strategic goals: current or emerging demands imposed on the U.S. Intelligence Community, the DoD combatant commands, and the DoD and FBI National Mission Force; successful coordination and execution with both interagency and key international partners; and synchronizing and executing internal agency activities.

The CTCP Program goals also include innovative approaches for standoff disablement through experiments and computational modeling and meeting key DoD needs in support of national policy objectives. Additional CTCP goals include

[a] A classified version will be provided under separate cover.

strengthening NCT capabilities and awareness, through WMD counterterrorism outreach focused on the expertise, coordination, and communication required to address terror threats associated with nuclear or radiological facilities or materials. Program assumptions include the continued support by USG and international partners to continually maintain the program's very high results. CTCP will also continue to assess open source publications to protect NTD design information. Additionally, CTCP will maintain nuclear forensics modeling and data evaluation capabilities.

CTCP will continue to expand our knowledge to measurably inform policy-relevant decision-making. One assumption for the program is that key nuclear security enterprise experimental facilities will be available for the duration of current nuclear and energetic materials roadmap needs. CTCP would need to adjust funding priorities should key facilities be identified for closure before experimental activities are completed.

Counterterrorism and Counterproliferation Program
Funding

(Dollars in Thousands)

	FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Request	FY 2015 vs FY 2014 Enacted
Counterterrorism and Counterproliferation Programs					
Counterterrorism and Counterproliferation	0	0	0	76,901	+76,901
Counterproliferation Programs	**0**	**0**	**0**	**76,901**	**+76,901**

Outyears for Counterterrorism and Counterproliferation Program

(Dollars in Thousands)

	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Counterterrorism and Counterproliferation Programs				
Counterterrorism and Counterproliferation	82,121	84,163	86,206	88,249
Total, Counterterrorism and Counterproliferation Programs	**82,121**	**84,163**	**86,206**	**88,249**

Counterterrorism and Counterproliferation Program
Explanation of Major Changes
(Dollars in Thousands)

	FY 2015 vs FY 2014 Enacted
Counterterrorism and Counterproliferation Program	
In FY 2014, these activities are being conducted under the Nuclear Counterterrorism subprogram within Nuclear Counterterrorism and Incident Response. The request reflects an increase of $24,951 to support accelerated activities for nuclear materials and high explosives materials assessment and experimentation, threat device modeling and experiments, as well as development and testing of render safe tools. This increase accelerates and restores experimental activities for nuclear materials, restores assessment of high explosives, and restarts diagnostics research and development. Many of these projects were delayed in FY 2014 due to a decrease in funding in the FY 2014 enacted budget. Funding also increased to support exploration of innovative approaches for standoff disablement. By request of DoD and in support of national policy objectives, full scale experimental activities will be executed in FY 2015 and out-years. Increased support will also fund management and assessment of open source technical information.	**+76,901**
Total, Counterterrorism and Counterproliferation Program	**+76,901**

Counterterrorism and Counterproliferation Program

Description

The CTCP Program serves as the premier U.S. Government program for technical expertise regarding INDs as well as proliferant foreign and non-U.S. stockpile weapon design and assessment activities as they relate to nuclear terrorism, nuclear counterproliferation, and national render safe activities. The CTCP Program has developed specialized capabilities within the NNSA nuclear weapons design laboratories and production facilities to provide the necessary analysis, policy support, and contingency planning needed by other agencies to counter the threat of a stolen, modified, or improvised nuclear threat device.

The majority of this budget request is for nuclear materials and high explosives/energetic materials assessment, threat device modeling and experiments, as well as development and testing of exploitation technologies. In FY 2015, CTCP will continue a series of major experiments in support of the Joint Disablement Campaign, a NNSA/DoD effort to develop, model, and validate render safe/render unusable tools, techniques, and procedures. These investments are coordinated with U.S. Government and foreign partners, to the extent possible, for a force multiplier effect on results.

The CTCP Program supports activities that enhance national security by developing and maintaining technical expertise and capabilities for nuclear counterproliferation and counterterrorism issues within the U.S. Government. At the request of DoD and in support of National policy objectives, CTCP will explore innovative approaches for standoff disablement. CTCP will gather existing experimental and other data, identify information and modeling gaps, and develop the ability to predict the behavior in abnormal environments of nuclear materials and components, including those not historically incorporated in U.S. stockpile weapons. CTCP also supports bilateral Nuclear Threat Reduction Channel collaborations between the U.S. and the United Kingdom and the U.S. and France. Studies of open source technical information pertaining to nuclear terrorism are also completed to shape both domestic and international understanding of the potential threat spectrum. Additionally, selected post detonation nuclear forensics activities will be conducted. The Department will contribute to U.S. nuclear security by sustaining increasingly rare expertise and tools needed for these unique activities.

Further, the CTCP Program strengthens domestic and international nuclear/radiological counterterrorism capabilities by conducting bilateral counterterrorism security dialogues with key advanced civil nuclear country partners and through the design, production, and conduct of nuclear counterterrorism tabletop exercises domestically and abroad. Working with advanced civil nuclear states, CTCP conducts regular bilateral exchanges on the shared threat of nuclear terrorism, focusing on the evolving non-state actor threat environment and the resulting preparedness, policies, and practices required to reduce terrorist threats to civil nuclear facilities, materials, and transports. These dialogues directly support Presidential nuclear counterterrorism objectives, and include exchanges on specific policy and practical approaches to reduce terrorism risks as well as reciprocal observations of associated training and exercises. Additionally, under highly cost effective collaborations with other U.S. Government partners, CTCP designs and conducts unique WMD counterterrorism tabletop exercises at domestic locations across the United States and with key foreign partners, in order to increase WMD counterterrorism awareness *and* capabilities. Domestically, CTCP's *Silent Thunder* site-specific table-top exercises bring together the Federal, State and local agencies charged with security and response functions at public and private sector locations with radiological or nuclear materials. Internationally, the CTCP's *Eminent Discovery* and other international tabletop exercises are custom-designed to focus on key regional and National officials with border security, counterterrorism, and nuclear security responsibilities. Core objectives for all WMD Counterterrorism Tabletop Exercise Program exercises, both domestically or internationally, include: identifying red flags associated with nuclear/radiological terrorism; exercising the coordination and communication required for multijurisdictional responses to an emerging nuclear/radiological terror incident; and developing best practices for the security and crisis management, and consequence management decisions and actions necessitated by terrorism incidents involving nuclear or radiological materials.

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Counterterrorism and Counterproliferation Program		
	• Increased activities for nuclear materials and high explosives materials assessment, threat device modeling and experiments, as well as development and testing of render safe tools. • Selected experiments are also planned, meeting key DoD operational needs. • Restart execution of the TTMA-V project after delay in FY 2014. • Execute standoff disablement exploration activities, including experimentation. • Support international collaboration activities through the NTR channels to conduct evaluations of nuclear terrorism risks and scenarios, as well as materials attractiveness studies under the US/Japan Nuclear Security Working Group. • Design, develop, and conduct *"Silent Thunder"* domestic nuclear/radiological counterterrorism tabletop exercises and conduct of international counterterrorism security exercises with key foreign partners. • Maintain post-detonation forensics capabilities. • Continue to manage the monitoring, assessment, and response of open source NTD information. Strengthen WMD counterterrorism capabilities by conducting counterterrorism security dialogues with key advanced civil nuclear countries and designing, developing, and conducting nuclear/radiological counterterrorism tabletop exercises domestically and internationally. **FY 2016-FY 2019** • Continue planned activities for nuclear materials and high explosives/energetic materials	• In FY 2014, these activities are being conducted under the Nuclear Counterterrorism subprogram within Nuclear Counterterrorism and Incident Response. The FY 2015 request reflects an increase for these activities to support nuclear materials characterization activities, as well as reinvigorated experimental work, to augment modeling and simulations, across the entire CTCP portfolio. • This change also reflects the acceleration of calculational and experimental activities exploring innovative standoff disablement capabilities in support of national policy objectives. • Support of technical nuclear forensics activities is also increased.

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
	assessment, threat device modeling and experiments, as well as development and testing of render safe tools. • The Tier Threat Modeling Archive-Validation (TTMA-V) project experiment series will be completed in 2019, at which time the entire project will be evaluated. • Continue to execute innovative standoff disablement exploration activities. • Support international collaboration activities through the NTR channels, as well as materials attractiveness studies under the US/Japan Nuclear Security Working Group. • Design, develop, and conduct at least 8 domestic nuclear counterterrorism tabletop exercises annually and at least 2 international counterterrorism security exercises annually with key foreign partners. • Conduct at least 1 counterterrorism security dialogue annually with key foreign partners, in direct support of Presidential nuclear counterterrorism objectives.	

Counterterrorism and Counterproliferation Programs Performance Measures

In accordance with the GPRA Modernization Act of 2010, the Department sets targets for, and tracks progress toward, achieving performance goals for each program. For more information, refer to the Department's FY 2013 Annual Performance Report.

	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
WMD Counterterrorism Expertise - Cumulative number of officials trained in Weapons of Mass Destruction (WMD) Counterterrorism (CT) prevention and response via Office of Counterterrorism Policy and Cooperation exercises.							
Target	9,500 trained personnel	10,200 trained personnel	11,000 trained personnel	11,700 trained personnel	12,500 trained personnel	13,300 trained personnel	14,000 trained personnel
Result	**Met** – 9,500						
Endpoint Target	By the end of FY 2019, train 14,000 officials in Weapons of Mass Destruction (WMD) Counterterrorism (CT) prevention and response. The Office of Counterterrorism Policy and Cooperation's Weapons of Mass Destruction (WMD) Counterterrorism Exercise Program designs, produces, and conducts tailor-made tabletop exercises for domestic public and private sector customers with nuclear or radioactive materials or associated nuclear security responsibilities. Internationally, the program works with key foreign partners to design, develop, and conduct National and regional WMD security and WMD counterterrorism tabletop exercises. Designed to build teamwork and an in-depth understanding of the roles and responsibilities of agencies charged with responding to terrorist-radiological, nuclear, or WMD-related incidents, these exercises bring together Federal/National, State, and local decision-makers and first responders. This metric provides a quantitative (cumulative number of officials trained) measure of this program's impact. Note: The program erroneously reported the FY 2014 target as the FY 2013 target in the FY 2014 Congressional Justification. The correct targets for FY 2013 and FY 2014 are shown in this table.						
Tier Threat Modeling Archive - Validation (TTMA-V) - Percent complete toward validating national 3-D predictive modeling capability using four different experimental series designed to produce data needed to reconstruct nuclear threat device emergency disablement scenarios.							
Target	15% Complete	N/A	35% Complete	50% Complete	70% Complete	85% Complete	100% Complete
Result	**Met** - 15						
Endpoint Target	By the end of FY 2019, complete the validation of the national 3-D predictive modeling capability using four different experimental series designed to produce data needed to reconstruct nuclear threat device emergency disablement scenarios. TTMA-V is a cornerstone joint project for the Joint Disablement Campaign that will build confidence in the models used to develop key products throughout the interagency to include assessments, tool development support, and procedure development. Follow-on projects are identified but must wait for the refinements this project will produce. This effort is coordinated with the Defense Threat Reduction Agency. Note: Due to budget constraints in FY 2014, TTMA-V will not be executed and the entire experimental validation test series will be delayed one year with the same scope and end goal.						

Site Stewardship

Overview

The Site Stewardship Government Performance and Results Act (GPRA) unit goal is to ensure the overall health and viability of NNSA's nuclear security enterprise and bring focus on environmental compliance, nuclear materials disposition and developing the needed skills and talent for NNSA's enduring technical workforce at the laboratories and production plants. Site Stewardship is comprised of Environmental Projects and Operations, Nuclear Materials Integration, and Minority Serving Institution Partnerships Program.

The Environmental Projects and Operations (EPO) program funds all Long-Term Stewardship (LTS) activities necessary to meet Federal and state environmental regulatory requirements identified in legally enforceable site permits, cleanup agreements, and legislation to ensure safe cleanup levels are met. Activities include operating and maintaining remediation systems and monitoring contaminant levels in the soil and groundwater. EPO supports the ongoing mission by protecting human health and the environment and ensuring a safe working environment by reducing exposure to hazardous and radioactive legacy contamination.

The Nuclear Materials Integration (NMI) program funds the stabilization, consolidation, packaging and disposition of nuclear materials. NMI also focuses on the operation and maintenance of the Nuclear Materials Management and Safeguards System (NMMSS) that tracks and accounts for nuclear materials at Department of Energy (DOE) and sites licensed by the Nuclear Regulatory Commission (NRC).

The Minority Serving Institution (MSI) Partnership program funds research and education enhancements at under-represented colleges and universities in order to increase the number of people with the needed skills and talent for NNSA's enduring technical workforce at the labs and production plants.

Highlights of the FY 2015 Budget Request

EPO activities will continue at five sites: Kansas City Plant (KCP), Lawrence Livermore National Laboratory (LLNL) Main Site, LLNL Site 300, Pantex Plant, and Sandia National Laboratories (SNL) to maintain compliance with all Federal and state regulations. Activities specific to FY2015 include installation of a replacement groundwater treatment system and requirements of the new Resource Conservation and Recovery Act (RCRA) Permit at KCP (Bannister Federal); the required expansion of the treatment system of the Pantex Zone 11 perched ground water to meet Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); preparation of the Five Year Review of the 850/Pit 7 Complex (Operable Unit 5) at Site 300 of LLNL; and monitoring and maintenance of the Mixed Waste Landfill at SNL.

The NMI program will continue to maintain and operate the Nuclear Materials Management and Safeguards System in partnership with the Nuclear Regulatory Commission. The NMI program will also fund stabilization, re-packaging, consolidation and disposition of NNSA inactive actinides and other nuclear materials. These activities will be performed at NNSA sites as well as other DOE sites where NNSA legacy nuclear materials are stored. In FY 2015, the NMI program will fund Inactive Actinide activities at the Oak Ridge National Laboratory (ORNL), Los Alamos National Laboratory (LANL), and Y-12; maintain the technical support and cost analyses relating to the management of the Heavy Isotopes work at (ORNL); complete pre-receipt preparations and cask certification for the removal of plutonium-bearing mixed oxide fuel at SNL prior to shipment to Idaho National Laboratory (INL); and process and disposition of SNL sodium bonded debris material at INL. The NMI program will also perform planning studies and analyses relating to the life-cycle management of nuclear materials.

The MSI Partnership Program will continue to pursue and cultivate partnerships, collaborations and consortiums that align with the research and resources conducted at NNSA/DOE national laboratories. This alignment is defined by the following goals: 1) strengthen and expand MSI capacity and research experience in DOE mission areas of interest; 2) increase visible participation of MSI faculty in DOE technical engagements and activities, such as collaborative research, technical workshops, expert panel reviews and studies, and competitive processes; 3) target collaborations between MSIs and DOE laboratories and plants that increase scientist-to-scientist interactions, applied research and engineering application collaborations and/or implementation of research results, and provide MSI access to DOE facilities; 4) increase the number of MSI students who graduate with Science, Technology, Engineering, and Math (STEM) degrees relevant to DOE mission areas and have had exposure to career opportunities at DOE; and 5) increase the number of minority graduates and post-doctoral students hired into DOE's technical and scientific workforce.

Major Outyear Priorities and Assumptions
Outyear funding levels for the Site Stewardship total $338,563,000 for FY 2016 through FY 2019.

The outyear funding allows the EPO program to meet Federal and state environmental regulatory requirements. Key priorities include treatment of contaminated groundwater; environmental monitoring of surface water, soils and ground water; operating and maintaining landfill remedies; and coordinating with EPA regions and various states to meet post-completion regulatory cleanup and reporting requirements.

Outyear funding will also allow the NMI program to continue the stabilization, consolidation, packaging, and disposition of nuclear materials. Additionally, it will allow the MSI Partnership Programs to continue cultivating partnerships, collaborations and consortiums that align with the research and resources conducted at NNSA/DOE national laboratories.

Site Stewardship
Funding

	(Dollars in Thousands)				
	FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Request	FY 2015 vs FY 2014 Enacted
Site Stewardship					
Environmental Projects and Operations	40,369	51,001	51,001	53,000	+1,999
Nuclear Materials Integration	16,434	12,676	12,676	16,218	+3,542
Corporate Project Management	12,693	9,118	9,118	0	-9,118
Minority Serving Institution Partnership Program	0	14,531	14,531	13,231	-1,300
Total, Site Stewardship	**69,496**	**87,326**	**87,326**	**82,449**	**-4,877**

Outyears for Site Stewardship

	(Dollars in Thousands)			
`	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Site Stewardship				
Environmental Projects and Operations	52,215	52,190	51,896	51,896
Nuclear Materials Integration	17,863	18,161	18,546	18,926
Corporate Project Management	0	0	0	0
Minority Serving Institution Partnership Program	14,299	14,169	14,043	14,359
Total, Site Stewardship	**84,377**	**84,520**	**84,485**	**85,181**

National Nuclear Security Administration Site Stewardship
Budget Structure Changes

In FY 2015, Corporate Project Management is transferred from the Weapons Activities Appropriation to the NNSA Federal Salaries and Expenses Appropriation. This is consistent with the explanatory statement accompanying P.L. 113-76, Consolidated Appropriation Act for 2014 which directs the NNSA to include future funding requests for corporate project management in NNSA Federal Salaries and Expenses. The Corporate Project Management program was established to address long-standing needs identified by the Department, Congress and United States Government Accountability Office (GAO) to strengthen project management.

FY 2015 Budget Structure

	National Nuclear Security Administration Federal Salaries and Expenses				
	Salaries and Benefits	**Travel**	**Support Services**	**Other Related Expenses**	**Total**
FY 2014 Budget Structure					
Weapons Activities					
Site Stewardship					
Corporate Project Management			11,809		11,809
Total Weapons Activities			**11,809**		**11,809**

Site Stewardship
Explanation of Major Changes
(Dollars in Thousands)

	FY 2015 vs FY 2014 Enacted
Site Stewardship	
Environmental Projects and Operations: The increase reflects installation of a replacement treatment system at the Kansas City Plant and preparation of a Five Year Review at the Lawrence Livermore National Laboratory Site 300 and implementation of the Zone 11 groundwater treatment system expansion at Pantex.	**+1,999**
Nuclear Materials Integration: This increase will be directed at the continued removal of inactive actinides at Los Alamos National Laboratory, as well as support of nuclear material removal activities at Y-12, that complement siting and development of the Uranium Processing Facility. Additional funding will be provided to Oak Ridge National Laboratory to support closure of the Californium Loan-Lease Program.	**+3,542**
Corporate Project Management: Beginning in FY 2015, Corporate Project Management is included in NNSA Federal Salaries and Expenses, Support Services. Funding for this activity was transferred from the Weapons Activities Appropriation to the NNSA Federal Salaries and Expenses Appropriation consistent with the explanatory statement accompanying the P.L. 113-76, Consolidated Appropriation Act for 2014 which directs the NNSA to include future funding requests for corporate project management under NNSA Federal Salaries and Expenses.	**-9,118**
Minority Serving Institution Partnerships Program: This decrease will result in fewer funds available to be applied towards research and education enhancements at under-represented colleges and universities, thus reducing the number of people with the needed skills and talent for NNSA's enduring technical workforce at the labs and production plants.	**-1,300**
Total, Site Stewardship	**-4,877**

Site Stewardship
Environmental Projects and Operations

Description

The Environmental Projects and Operations (EPO) program funds all Long-Term Stewardship (LTS) activities necessary to meet Federal and state environmental regulatory requirements identified in legally enforceable site permits, cleanup agreements, and legislation to ensure safe cleanup levels are met. Activities include operating and maintaining remediation systems and monitoring contaminant levels in the soil and groundwater. EPO supports the ongoing mission by protecting human health and the environment and ensuring a safe working environment by reducing the risk of exposure to hazardous and radioactive legacy contamination. The EPO Program also ensures effective management and oversight of these activities and ensures integration of a responsible environmental stewardship program with the NNSA's stockpile stewardship and nuclear security efforts. EPO is required to meet environmental compliance associated with the ongoing operations of a site that has a Resource Conservation and Recovery Act (RCRA) Part B Operating Permit and/or is subject to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). LTS requirements are periodically updated to be consistent with regulatory updates and technological advances.

FY 2016-FY 2019 Key Milestones

- Responsible for continued LTS activities at five sites: Kansas City Plant (KCP), Lawrence Livermore National Laboratory (LLNL) Main Site, LLNL Site 300, Pantex Plant, and Sandia National Laboratories (SNL) to maintain compliance with all Federal and state regulations.
- Perform CERCLA and RCRA 5-year remedy reviews of selected cleanup remedies at Pantex Plant, LLNL Main Site, LLNL Site 300, and SNL.
- Support corrective action required in the KCP Resource Conservation and Recovery Act permit for the Bannister Federal Complex.
- Meet LTS regulatory requirements by continuing to treat contaminated ground water; performing environmental monitoring of surface water, ground water, and soils; operating and maintenance of landfill remedies, and working with EPA regions and various states to meet post-completion regulatory cleanup and reporting requirements.
- Continue working in concert with other Federal agencies, states, and affected stakeholders to execute LTS activities in a cost-effective, compliant, and safe manner consistent with end states that support the nuclear enterprise mission.

Environmental Projects and Operations

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Environmental Projects and Operations		
• Continued LTS activities at five sites: KCP, LLNL Main Site, LLNL Site 300, Pantex Plant, and SNL to maintain compliance with all Federal and state regulations. • KCP funding of $3,717,000 for facility investigation fieldwork requirements specified in the Federal Bannister RCRA Permit of a PCB fate and transport study, as well as continuing to treat contaminated ground water; performing monitoring of surface and ground water; and working with the Federal and state agencies and stakeholders in executing the LTS activities in a cost-effective, compliant, and safe manner and meeting the regulatory cleanup and reporting requirements. • LLNL Main Site and Site 300 funding of $25,284,000 to continue to treat contaminated ground water; performing monitoring of ground water; operating and maintaining landfill remedies at Site 300, and working with the Federal and state agencies and stakeholders in executing the LTS activities in a cost-effective, compliant, and safe manner and meeting the regulatory cleanup and reporting requirements. • Pantex Plant funding of $15,475,000 to continue to treat contaminated ground water including installing an enhanced treatment system at the Zone 11 perched ground water to meet the requirements of CERCLA; performing monitoring of ground water; operating and maintaining landfill remedies, and working with the Federal and	• Continue LTS activities at five sites: KCP, LLNL Main Site, LLNL Site 300, Pantex Plant, and Sandia National Laboratories to maintain compliance with all Federal and state regulations. • KCP funding request of $4,715,000 is to support corrective action required in the KCP Resource Conservation and Recovery Act permit for the Bannister Federal Complex including PCB Fate and Transport Study as well as continuing to treat contaminated ground water; installing a replacement treatment system; performing monitoring of surface and ground water, and working with the Federal and state agencies and stakeholders in executing the LTS activities in a cost-effective, compliant, and safe manner and meeting the regulatory cleanup and reporting requirements. • LLNL Main Site and Site 300 funding request of $27,740,000 is to continue to treat contaminated ground water; performing monitoring of ground water; operating and maintaining landfill remedies, Five Year Review at 850/Pit 7 Complex (Operable Unit 5) at Site 300, and working with the Federal and state agencies and stakeholders in executing the LTS activities in a cost-effective, compliant, and safe manner and meeting the regulatory cleanup and reporting requirements. • Pantex Plant funding request of $13,082,000 is to continue to treat contaminated ground water including implementing the expansion	• The FY 2015 funding request reflects the funds needed to install a replacement treatment system at KCP, prepare the Five Year Review at LLNL Site 300 and implement the expansion of the Zone 11 groundwater treatment system at Pantex.

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
state agencies and stakeholders in executing the LTS activities in a cost-effective, compliant, and safe manner and meeting the regulatory cleanup and reporting requirements. • SNL funding request of $6,525,000 to continue environmental monitoring of surface water, ground water, and soils; operating and maintaining landfill remedies, and working with Federal and state regulatory agencies and stakeholders in executing the LTS activities in a cost-effective, compliant, and safe manner and meeting the regulatory cleanup and reporting requirements.	of the treatment system at the Zone 11 perched ground water to meet the requirements of CERCLA; performing monitoring of ground water; operating and maintaining landfill remedies, and working with the Federal and state agencies and stakeholders in executing the LTS activities in a cost-effective, compliant, and safe manner and meeting the regulatory cleanup and reporting requirements. • SNL funding request of $7,463,000 is to continue environmental monitoring of surface water, ground water, and soils; operating and maintaining landfill remedies, and working with Federal and state regulatory agencies and stakeholders in executing the LTS activities in a cost-effective, compliant, and safe manner and meeting the regulatory cleanup and reporting requirements.	

Site Stewardship
Nuclear Materials Integration

Description

The Nuclear Materials Integration (NMI) subprogram focuses on the consolidation and disposition of specific NNSA nuclear materials and material sets owned by multiple programs and where a single coordinated disposition program is warranted. In addition, the subprogram includes inactive actinides activities that ensure programmatic materials not in active use are properly characterized and safely packaged, and that unneeded materials have an appropriate disposition path. NMI also maintains and operates the Nuclear Materials Management and Safeguards System (NMMSS) that tracks and accounts for nuclear materials at DOE and the Nuclear Regulatory Commission (NRC) licensed sites.

FY 2016-FY 2019 Key Milestones

- Continue inactive actinides activities to support the treatment, consolidation and disposition of NNSA SNM that is no longer required to support the nuclear security enterprise mission at LANL and Y-12.
- Continue treatment and disposition of NNSA materials currently stored at non-NNSA sites including the Idaho National Laboratory (sodium bonded debris).
- In partnership with the Nuclear Regulatory Commission, continue to support the operation and maintenance of NMMSS.

Nuclear Materials Integration

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Nuclear Materials Integration		
• Continue activities to support the removal of plutonium-bearing mixed oxide fuel from SNL. • Continue inactive actinide activities to support the treatment, consolidation and disposition of NNSA Special Nuclear Material that is no longer required to support the nuclear security enterprise mission at LANL and Y-12. • Continue treatment and disposition of NNSA materials currently stored at non-NNSA sites including the Idaho National Laboratory (sodium bonded fuels). • In partnership with the Nuclear Regulatory Commission, continue to support the operation and maintenance of NMMSS. • Identify sites requiring Californium in accordance with contemporary DOE/NNSA missions.	• Continue activities to support the removal of plutonium-bearing mixed oxide fuel from SNL. • Continue inactive actinides activities to support the treatment, consolidation and disposition of NNSA SNM that is no longer required to support the nuclear security enterprise mission at LANL and Y-12. • Continue treatment and disposition of NNSA materials currently stored at non-NNSA sites including the Idaho National Laboratory (sodium bonded fuels). • In partnership with the Nuclear Regulatory Commission, continue to support the operation and maintenance of NMMSS. • Maintain the technical support and cost analyses relating to the management of Heavy Isotopes Lead Material Management Organization (LMMO) at Oak Ridge National Laboratory. • Transfer Californium returned to the Loan-Lease program in storage at ORNL to requesting DOE/NNSA sites as a part of close-out of the Californium Loan-Lease Program	• Transfer of scope for LLNL Transuranic (TRU) waste management to site operations. Additional funding provided to ORNL to support closure of the Californium Loan-Lease program

Site Stewardship
Corporate Project Management

In FY 2015, Corporate Project Management is transferred from the Weapons Activities Appropriation to the NNSA Federal Salaries and Expenses Appropriation. This is consistent with the explanatory statement accompanying P.L. 113-76, Consolidated Appropriation Act for 2014, which directs the NNSA to include future funding requests for corporate project management in NNSA Federal Salaries and Expenses. The Corporate Project Management program was established to address long-standing needs identified by the Department, Congress and United States Government Accountability Office (GAO) to strengthen project management.

Corporate Project Management

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Corporate Project Management		
• Implementation of complex-wide reforms leading to reduction in fixed costs; minimize management and control inefficiencies, and cost improvement initiatives. • Project Management Standardization to include but not limited to: procurement documentation; execution processes and procedures; cost data collection; work breakdown structure; standard project reporting requirements; configuration management; project reporting; Earned Value Management System (EVMS); and policies and procedures. • Acquisition Planning; Portfolio Management; and Data Sharing/Industry Coordination. • Any new start capital projects will be enveloped into this new execution strategy.	• Not applicable.	• This program has been realigned under the NNSA Salaries and Benefits appropriation in FY 2015 per the Consolidated Appropriation Act for 2014.

Site Stewardship
Minority Serving Institution Partnerships Program

Description

The Minority Serving Institutions (MSI) Partnerships program align investments in university capacity and workforce development with the NNSA mission to develop the needed skills and talent for NNSA's enduring technical workforce at the laboratories and production plants, and to enhance research and education at under-represented colleges and universities. NNSA MSI programs are designed to increase participation of women and minorities in the nuclear security enterprise and across the nation in science, technology, engineering and math (STEM) disciplines; developing individuals; building core competencies for NNSA; and improving institutional capacity in MSIs.

Consistent with NNSA's Strategic Plan, MSI programs such as the prestigious Massie Chairs of Excellence and symposia for African American, Hispanic and Native American youth support a pipeline of several thousand individuals each year. These include K-12, undergraduate, and graduate students; research faculty; and professors, who have been exposed to the mission, and to the science and engineering underpinning the nuclear security enterprise. Topical areas supported by the NNSA are, in most cases, fields of research that receive little funding by other government (or private) agencies, such as the National Science Foundation (NSF). A successful nuclear security enterprise requires a highly specialized workforce of well trained scientists and engineers.

NNSA has supported MSI efforts, including Historically Black Colleges and Universities (HBCUs), Hispanic Serving Institutions (HSIs), Tribal Colleges and Universities (TCUs), and various community-based organizations through the NNSA Federal Salaries and Expenses, Weapons Activities, Defense Nuclear Nonproliferation, and Naval Reactors appropriations. In FY 2012 and FY 2013, a new approach – the Minority Serving Institutions Partnerships Program – was initiated to build consortia focused on the science supporting DOE and NNSA missions. In FY 2014, a single line for MSIP funding will be established in the Site Stewardship GPRA unit, aligning MSI investments with the NNSA mission and allowing for streamlined program and resource management during execution.

FY 2016-FY2019 Key Milestones

- Massie Chairs, HBCU, HSI, TCU, and community-based grants, and MSIPP consortium based model focus research and internships on DOE science, engineering, and internships; building educational/institutional infrastructure, and enhancing the pipeline of diverse, high quality talent in STEM academic disciplines and careers.

Minority Serving Institution Partnership Program

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Minority Serving Institution Partnership Program		
• Massie Chairs, HBCU, HSI, TCU, and community-based grants, and MSIPP consortium based model focus research and internships on DOE science, engineering, and internships; building educational/institutional infrastructure, and enhancing the pipeline of diverse, high quality talent in STEM academic disciplines and careers.	• Massie Chairs, HBCU, HSI, TCU, and community-based grants, and MSIPP consortium based model focus research and internships on DOE science, engineering, and internships; building educational/institutional infrastructure, and enhancing the pipeline of diverse, high quality talent in STEM academic disciplines and careers.	• This decrease will result in fewer funds available to be applied towards research and education enhancements at under-represented colleges and universities in order to develop the needed skills and talent for NNSA's enduring technical workforce at the labs and production plants.

Site Stewardship Program Performance Measures

In accordance with the GPRA Modernization Act of 2010, the Department sets targets for, and tracks progress toward, achieving performance goals for each program. For more information, refer to the Department's FY 2013 Annual Performance Report.

	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Environmental Monitoring and Remediation - Annual percentage of environmental monitoring and remediation deliverables that are required by regulatory agreements to be conducted at NNSA sites under Long Term Stewardship (LTS) that are executed on schedule and in compliance with all acceptance criteria.							
Target	95% of deliverables	95% of deliverables	95% of deliverables	95% of deliverables	95% of deliverables	95% of deliverables	95% of deliverables
Result	**Exceeded** - 100						
Endpoint Target	Annually, submit on schedule and receive regulatory approval of at least 95% of all environmental monitoring and remediation deliverables that are required at NNSA sites under LTS by regulatory agreements.						

Site Stewardship
Capital Summary

(Dollars in Thousands)

	Total	Prior Years	FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Current	FY 2015 vs FY 2014
Capital Operating Expenses Summary (including (Major Items of Equipment (MIE)							
Capital Equipment >$500K (including MIE)	3,978	3,761	28	29	29	30	+1
Total, Capital Operating Expenses	**3,978**	**3,761**	**28**	**29**	**29**	**30**	**+1**
Capital Equipment > $500K (including MIE)							
Total Non-MIE Capital Equipment (>$500K)	3,978	3,761	28	29	29	30	+1
Total, Capital Equipment (including MIE)	**3,978**	**3,761**	**28**	**29**	**29**	**30**	**+1**
Total, Capital Summary	**3,978**	**3,761**	**28**	**29**	**29**	**30**	**+1**

Outyears for Site Stewardship

(Dollars in Thousands)

	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Capital Operating Expenses Summary (including (Major Items of Equipment (MIE)				
Capital Equipment >$500K (including MIE)	31	32	33	34
Total, Capital Operating Expenses	**31**	**32**	**33**	**34**
Capital Equipment > $500K (including MIE)				
Total Non-MIE Capital Equipment (>$500K)	31	32	33	34
Total, Capital Equipment (including MIE)	**31**	**32**	**33**	**34**
Total, Capital Summary	**31**	**32**	**33**	**34**

Defense Nuclear Security

Overview

The Defense Nuclear Security (DNS) program is an essential component of the nuclear security enterprise. The core mission is to develop and implement security programs, including protection, control, and accountability of materials, and for the physical security of all facilities of the administration. The DNS program is responsible for managing the security of the existing nuclear security enterprise that includes the national laboratories, production plants, processing facilities, and the national security site, all of which support NNSA missions.

Beyond performing its core mission, DNS also provides unique knowledge and expertise in nuclear security for a broader set of 21st century national security needs, such as those in defense nuclear nonproliferation, homeland security, and intelligence that are synergistic with its mission. The DNS provides protection from a full spectrum of threats, for NNSA personnel, facilities, nuclear material, and classified matter.

Highlights of the FY 2015 Budget Request

A concerted effort has been made to balance the security program within reduced planning targets, while continuing to meet mission needs, minimize risk, and ensure that our highest priorities are met. At this level, we are accepting significant risk in some areas, including: aging infrastructure and obsolescence of physical security systems components, fewer performance assurance activities, and reduced level of effort in other security areas. The DNS program is able to reduce some of these risks through existing plans that make greater use of strategic sourcing to reduce procurement costs, improve project management and leverage emerging technologies. The DNS program will also work to establish greater enterprise-wide consistency in our risk assessment processes and risk acceptance decision making and target protective force training toward the areas most in need of improvement in order to sustain a viable security posture within the reduced planning targets.

Major Outyear Priorities and Assumptions

Outyear funding levels for the DNS total $2,680,488,000 for FY 2016 through FY 2019. In the outyears, this funding level supports maintaining a risk-based security program and collaboration with the Department of Defense, in support of nuclear security enterprise goals. These funding levels will continue to necessitate significant risk acceptance.

Defense Nuclear Security
Funding

(Dollars in Thousands)

	FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Request	FY 2015 vs FY 2014 Enacted
Defense Nuclear Security					
Operations and Maintenance					
Protective Forces	382,646	398,931	398,931	370,485	-28,446
Physical Security Systems	77,100	85,934	85,934	79,866	-6,068
Information Security	34,499	37,536	37,536	30,432	-7,104
Personnel Security	29,339	34,810	34,810	34,151	-659
Materials Control and Accountability	28,534	29,962	29,962	28,678	-1,284
Security Program Operations and Planning	0	0	0	74,511	+74,511
Program Management	72,184	77,808	77,808	0	-77,808
Total, Operations and Maintenance	**624,302**	**664,981**	**664,981**	**618,123**	**-46,858**
Construction	**29,161**	**0**	**0**	**0**	**0**
Total, Defense Nuclear Security	**653,463**	**664,981**	**664,981**	**618,123**	**-46,858**

Outyears for Defense Nuclear Security

(Dollars in Thousands)

	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Defense Nuclear Security				
Operations and Maintenance				
Protective Forces	378,230	385,455	393,352	401,808
Physical Security Systems	83,998	85,693	87,501	89,413
Information Security	34,546	34,470	34,740	35,246
Personnel Security	39,534	39,690	40,147	40,814
Materials Control and Accountability	30,776	31,374	32,022	32,715
Security Program Operations and Planning	85,687	86,412	87,640	89,225
Program Management	0	0	0	0
Total, Operations and Maintenance	**652,771**	**663,094**	**675,402**	**689,221**
Construction	**0**	**0**	**0**	**0**
Total, Defense Nuclear Security	**652,771**	**663,094**	**675,402**	**689,221**

Defense Nuclear Security
Explanation of Major Changes
(Dollars in Thousands)

	FY 2015 vs FY 2014 Enacted
Defense Nuclear Security	
Operations and Maintenance: Reflects reductions in most security areas at all sites, notably: - reduction in protective force staffing at the Los Alamos National Laboratory (LANL) due to completion of a new perimeter intrusion detection and assessment system; - reduced estimates on the cost of providing protective force services through the management and operating (M&O) partners at Y-12; - completion of minor projects; and - substantial reductions in Security Program Operations and Planning (performance assurance, tracking of security incidents, vulnerability assessments, training and security awareness), Personnel Security (Human Reliability Program, badging, access authorizations and control of classified visits, etc.), Information Security (classified matter protection and control, operational security, technical surveillance countermeasures) and Materials Control and Accountability (accounting, control and measurements, etc.) .	**-46,858**
Total, Defense Nuclear Security	**-46,858**

Defense Nuclear Security
Operations and Maintenance

Description

Defense Nuclear Security Operations and Maintenance integrates personnel, equipment and procedures to protect a facility's physical assets and resources against theft, sabotage, diversion, or other criminal acts. Each NNSA site or facility has an approved Site Safeguards and Security Plan (SSSP) or a Site Security Plan detailing protection measures and resources needed to protect site security interests.

Protective Forces

Protective Forces provides for program oversight, duties, specialized training, facilities, equipment, weapons/firearms, ammunition, vehicles and expenses. These forces are a site's primary front-line protection, consisting of armed, uniformed officers. Protective Forces are an integral part of a site's security posture, and are trained in all tactics and procedures necessary to protect site interests.

Physical Security Systems

Physical Security Systems provide program oversight, intrusion detection and assessment systems (IDAS), performance testing and certification/recertification, access control systems, barrier and delay mechanisms, canine explosive detection programs, and tactical systems. This includes the centrally-managed Argus program for sites possessing Category 0/I quantities of Special Nuclear Material.

Information Security

Information Security provides for program oversight, classification guidance, Technical Surveillance Countermeasures (TSCM), Operational Security (OPSEC), and Classified Matter Protection and Control (CMPC.) This includes administrative requirements for maintaining security containers and combinations, marking, and control systems.

Personnel Security

Personnel Security provides for program oversight, access authorizations, badging programs, Human Reliability Programs, Control of Classified Visits, and Unclassified Visits and Assignments by Foreign Nationals. It encompasses the administrative support to the site clearance process, including processes for security clearance determinations at each site to ensure that individuals are eligible for access to classified information or matter and/or access to or control over special nuclear materials or nuclear weapons.

Materials Control and Accountability

Materials Control and Accountability (MC&A) provides for the control and accountability of special and alternate nuclear materials through measurements, quality assurance, accounting, containment, surveillance, and physical inventory. This subprogram also includes the Local Area Nuclear Material Accountability System (LANMAS) software application as well as training and operational support provided to Department of Energy and NNSA sites and facilities to use as the core of their nuclear accountability systems. The LANMAS software is used by 16 DOE sites, 4 of which are NNSA sites.

Security Program Operations and Planning

Security Program Operations and Planning provides direction, oversight and administration, planning, training, and development for security programs in these areas: Security Program Planning, Annual Operating Plans (AOPs), Site Security Plans and Site Safeguards and Security Plans, Vulnerability Analysis, Performance Testing and Assurance activities, Security Incident and Reporting Management, Surveys and Self-Assessments, activities related to deviation requests, Control of Security Technology Transfer Activities, and Facility Clearance and Foreign Ownership, Control or Influence (FOCI) activities.

Operations and Maintenance

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Protective Forces		
• Sites maintain sufficient protective forces to meet protection requirements based on approved vulnerability assessments in accordance with the design basis specified in the 2008 Graded Security Protection policy, and comply with Departmental order requirements. • Reflects the increase in overhead costs as a result of moving the Y-12 Protective Forces contract under the Y-12 Management and Operating (M&O) contract.	• Sites maintain sufficient protective forces to meet protection requirements based on approved vulnerability assessments in accordance with the design basis specified in the 2008 Graded Security Protection policy.	• Reflects reduced staffing at LANL due to completion of line item construction (new, state-of-the-art perimeter intrusion detection and assessment system around the protected area). • Reflects adjustments to cost estimate for providing protective force services through M&O partners at Y-12; NNSA anticipates some reduction in overhead rates upon final award of the combined Pantex/Y-12 M&O contract. • Reflects reductions to recurring equipment and weapons budgets based on historical actual costs.
Physical Security Systems		
• Maintains and begins upgrades to modernize physical security systems infrastructure. Meets Departmental order requirements and protects against the threat as documented in the 2008 Graded Security Protection policy.	• Maintains physical security systems infrastructure. Protects against the threat as documented in the 2008 Graded Security Protection policy.	• Reflects completion of minor, non-recurring projects that no longer require funding.
Information Security		
• Provides for maintaining a robust information protection program and planned infrastructure and lifecycle upgrades to the technical surveillance countermeasures (TSCM) equipment across all sites.	• Maintains an information protection program while implementing efficiencies in a risk-based manner.	• Reflects reductions to TSCM materials and supplies budgets pending validation of requirements and centralized procurement plan. • Reflects reductions to LLNL classification program necessitated by overhead rate changes. • Reflects reductions to level of effort at LANL, Pantex, and Y-12 necessitated by reduced funding.
Personnel Security		
• Maintains an effective personnel security program while realizing efficiencies in staffing resources at the sites, and in streamlined clearance processing.	• Maintains a personnel security program while implementing efficiencies in a risk-based manner.	• Reflects continued efficiencies in the personnel clearance processing program. • Reflects reductions to level of effort at KCP, LANL, LLNL, Pantex, and Y-12 necessitated by reduced funding levels.

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Materials Control and Accountability		
• Maintains an effective control and accountability program for special nuclear material holdings that deters, detects, and initiates response for potential theft/diversion of special nuclear material and ensures that targets for theft and diversion are appropriately identified and afforded the correct level of physical protection. • Initiates LANMAS software upgrade project.	• The LANMAS software upgrade represents a migration from Visual Basic 6 (VB6), which is a software platform that will not continue to be supported by vendors, to the .net platform. While the functionality of the software will not change, the migration to a new software platform will enable more cost-effective sustainment.	• Provides for control and accountability of special and alternate nuclear materials. Maintains a level of effort that will sustain a critical part of NNSA's layered protection program. • Reflects reductions to level of effort at LANL, Pantex and Y-12 necessitated by reduced funding levels.
Security Program Operations and Planning		
• Maintains an effective Program Operations and Planning capability and centrally-managed funding for emerging enterprise-wide security infrastructure upgrades, projects and procurements. • Supports implementation of inter-Departmental risk-based security projects and reviews as part of the collaboration (harmonization) initiative.	• Maintains a Program Operations and Planning capability while implementing efficiencies in a risk-based manner.	• Reflects continued efficiencies in security program management. • Reflects reductions to level of effort at LANL, LLNL, NNSS, Pantex, and SNL necessitated by reduced funding levels, including limited ability to plan and oversee corrective actions, and conduct analyses of emerging issues and risks.

Defense Nuclear Security Performance Measures

In accordance with the GPRA Modernization Act of 2010, the Department sets targets for, and tracks progress toward, achieving performance goals for each program. For more information, refer to the Department's FY 2013 Annual Performance Report.

	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Protective Force Training Reform - Implement and sustain an Enterprise Mission Essential Task List (EMETL)-based training program, based on a U.S. military model, for protective forces at all eight NNSA sites. Improve the ability of protective force leaders to think and act independently, adapt and perform effectively in different operational environments. Improve the program office's ability to verify the quality of instructors and the overall status of protective force training and readiness.							
Target	N/A	90% Index	90% Index	90% Index	90% Index	95% Index	95% Index
Result	N/A						
Endpoint Target	By FY 2017, produce protective forces that are high-performing in mission accomplishment with a necessary/appropriate training program that minimizes unproductive training time.						
Physical Security Infrastructure Recapitalization – Implement and maintain a physical security life cycle management process, including on-time and to standard supplemental deliverables after implementation.							
Target	N/A	85% Index	85% Index	90% Index	90% Index	95% Index	95% Index
Result	N/A						
Endpoint Target	By 2017, achieve defensible prioritization of systems investments based on risk, more efficient bulk procurements, more common systems configurations/designs, timely redistribution of inventories based on site needs, and more accurate reporting to external stakeholders on condition of NNSA security systems.						
Enterprise Risk Management – Implement and sustain a repeatable process for conducting site vulnerability and risk assessments and a set of consistent deliverables to help Federal oversight ensure the security program is integrated, robust and efficient.							
Target	N/A	90% Index	90% Index	90% Index	90% Index	95% Index	95% Index
Result	N/A						
Endpoint Target	By 2017, achieve an Improved corporate understanding of site operations, protection strategies, and risk acceptance that enables decision-makers to make true cost/benefit and risk acceptance decisions for physical security, better risk-informed resource allocation decisions, and more balance across NNSA sites.						

Defense Nuclear Security
Capital Summary

	(Dollars in Thousands)						
	Total	Prior Years	FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Current	FY 2015 vs FY 2014
Capital Operating Expenses Summary (including (Major Items of Equipment (MIE)							
Capital Equipment >$500K (including MIE)	15,567	15,567	0	0	0	0	0
Total, Capital Operating Expenses	**15,567**	**15,567**	**0**	**0**	**0**	**0**	**0**
Capital Equipment > $500K (including MIE)							
Total Non-MIE Capital Equipment (>$500K)	15,567	15,567	0	0	0	0	0
Total, Capital Equipment (including MIE)	**15,567**	**15,567**	**0**	**0**	**0**	**0**	**0**
Total, Capital Summary	**15,567**	**15,567**	**0**	**0**	**0**	**0**	**0**

Outyears for Defense Nuclear Security

	(Dollars in Thousands)			
	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Capital Operating Expenses Summary (including (Major Items of Equipment (MIE)				
Capital Equipment >$500K (including MIE)	0	0	0	0
Total, Capital Operating Expenses	**0**	**0**	**0**	**0**
Capital Equipment > $500K (including MIE)				
Total Non-MIE Capital Equipment (>$500K)	0	0	0	0
Total, Capital Equipment (including MIE)	**0**	**0**	**0**	**0**
Total, Capital Summary	**0**	**0**	**0**	**0**

Defense Nuclear Security
Other Information

Full Cost Recovery Estimates

	(Dollars in Thousands)			
	FY 2013 Current	FY 2014 Request	FY 2015 Request	FY 2015 vs FY 2014 $
Site				
Kansas City Plant	437	212	430	218
Lawrence Livermore National Laboratory	11,578	9,300	15,000	5,700
Los Alamos National Laboratory	3,892	3,500	5,193	1,693
Nevada National Security Site	0	2,050	2,050	0
Pantex Plant	223	0		0
Sandia National Laboratories	15,648	16,500	16,500	0
Y-12 National Security Complex	0	0		0
Total	**31,778**	**31,562**	**39,173**	**7,611**

The FY 2015 request provides direct funding for mission-based program for Defense Nuclear Security. Work for Others will continue to fund an allocable share of the base program through full cost recovery. Extraordinary security requirements for Work for Others projects will be a direct charge to those customers.

Information Technology and Cybersecurity (formerly NNSA CIO Activities)

Overview

Information Technology and Cybersecurity (renamed from NNSA CIO Activities in the FY 2014 Omnibus Appropriations Bill) supports the diverse civilian nuclear security enterprise of the United States Department of Energy/National Nuclear Security Administration (DOE/NNSA). It supports information technology (IT) and cybersecurity solutions, including continuous monitoring, enterprise wireless and security technologies (ie: identity, credential, and access management) to help meet security, proliferation resistance. In addition, by making the NNSA Data Centers more efficient, the program directly supports the climate goals mission of DOE. The increase in the Information Technology and Cybersecurity Request reflects expenses for: improvement to the cyber infrastructure at the NNSA sites; requirements for classified computing environment directed by the Committee on National Security Systems (CNSS), an interagency body responsible for safeguarding the national security systems; Identity Credential and Access Management (ICAM); network infrastructure costs for the NNSA sites; and Public Key Infrastructure (PKI) tokens for authentication to secret networks and applications. The NNSA Office of the Chief Information Officer (NCIO) focus for the next five years is to continue providing superior information management support to current operations while implementing the NNSA Network Vision (2NV) Strategy and NNSA Classified Network Vision (C2NV) and the Joint Cybersecurity Coordination Center (JC3) with the DOE CIO.

The NNSA 2NV and C2NV is a suite of IT initiatives sponsored by the NCIO that will provide a state-of-the-art technology infrastructure for enabling the OneNNSA vision and future nuclear security enterprise (NSE) shared services. The initiative will fundamentally re-architect the NNSA IT environment to provide a secure set of capabilities including unified networking, federated identity services, agile cloud infrastructure, and next-generation collaboration services across NNSA enterprise including headquarters, laboratories, and plants.

The 2NV and C2NV will provide utility services that can be leveraged by future investments, either by the Federal Government or Management and Operating (M&O) partners, to improve security of sensitive unclassified and classified NNSA data, lower IT costs, and host shared services. In addition, 2NV and C2NV will provide a dramatic step forward in collaboration capabilities by delivering a federated, unclassified, unified communications capability and deployment of a secure, agency wide, internally facing social network.

The Information Technology and Cybersecurity program sets forth goals and objectives to guide the execution of the NNSA Information Management Program. Achieving these goals and objectives will enable the NNSA to improve protection of its information, information assets, counter new and evolving threats, educate and enable its workforce, and support the development of mission-oriented requirements that effectively integrate security into everyday operations.

Achieving and maintaining a secure NNSA information environment for the enterprise requires an approach that combines defense-in-depth and defense-in-breadth principles with essential guiding tenets that align the Information Technology and Cybersecurity program with NNSA cultural and business drivers. The underlying set of four guiding tenets of risk management, agility, trust, and partnership align with the people, processes and technology elements to support the defense-in-depth values of achieving mission effectiveness and are integral to the success of the Information Technology and Cybersecurity program.

With the current challenges at hand, the NNSA Information Technology and Cybersecurity Program will continue to focus its energy on improving both the performance of its staff and the security of the IT environment across the nuclear security enterprise. We will continue to maintain and modernize the aging IT infrastructure that supports mission activities within the weapons program, classified information processing environment, nuclear material transport, weapon modernization, and incident response, among others. The NNSA CIO will continue to work diligently to evaluate risk and allocate available resources to prioritize activities and reduce threats in order enable the mission of the NNSA.

Highlights of the FY 2015 Budget Request

In FY 2015, the Information Technology and Cybersecurity program plans to:

- Modernize the Cybersecurity infrastructure, comprised of almost 100 sensors and over 70 data acquisition servers dispersed nationwide for the NNSA's Information Assurance Response Center (IARC). In addition, the program will modernize to provide intelligence-based analytics and to take automated action against attacks, which is now critical to protecting information and information systems from new and emerging attack methods and data ex-filtration from -compromised systems or insider threats. IARC is responsible for providing 24/7/365 Cybersecurity services to some 66 and growing NNSA and DOE enclaves. IARC's services and service levels meet strict Federal requirements that allow sites to maintain mission-essential access to the Federal classified network (SIPRNet). IARC also provides near-real-time network defense and incident response services that protect these classified and unclassified enclaves and information from attacks. As a participant with the Joint Cybersecurity Coordination Center (JC3) Program, IARC also supports enterprise-level Cyberthreat management and situational awareness for the Department.

- Implement the ICAM project at NNSA Headquarters and site elements. This entails ensuring the security of our facilities, and the people and information that use them. We must be able to confirm identities. This includes people, computing/communications devices, networks, information systems, applications, and data, as well as DOE/NNSA and Service Component (SC) real property and other selective SC materiel (e.g., weapons systems). The use of automation and the ability to network computers, devices, and the capabilities they provide has transformed how we do the business of NNSA.
- Implement and coordinate PKI and other CNSS requirements. In October 2011, the President issued Executive Order 13587, *Structural Reforms to Improve The Security Of Classified Networks And The Responsible Sharing And Safeguarding Of Classified Information* (EO 13587) which states: *"*Our Nation's security requires classified information to be shared immediately with authorized users around the world but also requires sophisticated and vigilant means to ensure it is shared securely.*"* The CNSS is the interagency body responsible for safeguarding the National Security Systems (NSS). Their requirements include specific actions in the following six areas: access control**,** enterprise audit, insider threat, reduce anonymity, removable media, and continuous monitoring.
- Continue to leverage the 2NV framework to increase the efficiency and cost-effectiveness of NNSA IT services, consistent with the DOE IT Modernization Strategy and the Federal Information Technology Shared Services Strategy. This will include specific activities such as executing the NNSA Application Modernization Strategy, which will seek to minimize the number of disparate NNSA Federal business and mission support IT applications in favor of a platform-based approach that will facilitate reduced hardware, software, and labor costs via rapid application development, single sign-on, and maximum re-use of hardware infrastructure, software licenses, custom code, logic/workflows, data objects; and organized efforts to cultivate enterprise-wide adoption of shared infrastructure capabilities by the NNSA Federal and M&O communities.
- Insider Threat funding requested separately under joint effort with DOE Office of Intelligence (IN) and Environment, Health, Safety and Security (EHSS).

Major Outyear Priorities and Assumptions

Outyear funding levels for Information Technology and Cybersecurity for FY 2016 through FY 2019 total $619,235,000. The NNSA CIO will transform the computing environment. This will be accomplished within funding levels over the next five years by delivering the NNSA Network Vision (2NV) Strategy and NNSA Classified Network Vision (C2NV) and the Joint Cybersecurity Coordination Center (JC3) with the DOE CIO.

Information Technology and Cybersecurity (formerly NNSA CIO Activities)
Funding[a]

(Dollars in Thousands)

	FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Request	FY 2015 vs FY 2014 Enacted
Information Technology and Cybersecurity (formerly NNSA CIO Activities)					
Cybersecurity					
Infrastructure Program [a]	104,780	105,441	105,441	140,805	+35,364
Technology Application Development	0	4,000	4,000	4,000	0
Total, Cybersecurity	**104,780**	**109,441**	**109,441**	**144,805**	**+35,364**
Enterprise Secure Computing	**11,404**	**10,000**	**10,000**	**10,000**	**0**
Federal Unclassified Information Technology	**23,000**	**25,627**	**25,627**	**24,841**	**-786**
Total, Information Technology and Cybersecurity	**139,184**	**145,068**	**145,068**	**179,646**	**+34,578**

Outyears for Information Technology and Cybersecurity

(Dollars in Thousands)

	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Information Technology and Cybersecurity (formerly NNSA CIO Activities)				
Cybersecurity				
Infrastructure Program	112,661	115,404	118,045	121,577
Technology Application Development	4,000	4,000	4,000	4,000
Total, Cybersecurity	**116,661**	**119,404**	**122,045**	**125,577**
Enterprise Secure Computing	**10,000**	**10,000**	**10,000**	**10,000**
Federal Unclassified Information Technology	**25,000**	**24,027**	**23,436**	**23,085**
Total, Information Technology and Cybersecurity	**151,661**	**153,431**	**155,481**	**158,662**

[a] In FY 2013, $12 million was reprogrammed to Cybersecurity GPRA unit.

Information Technology and Cybersecurity (formerly NNSA CIO Activities)
Explanation of Major Changes
(Dollars in Thousands)

	FY 2015 vs FY 2014 Enacted
Information Technology and CyberSecurity (formerly NNSA CIO Activities)	
Cybersecurity: The additional funding will be used for several FY 2015 critical program initiatives, to include: modernization of the cybersecurity infrastructure, comprised of almost 100 sensors and over 70 data acquisition servers, dispersed nationwide, implementation of the ICAM project at NNSA Headquarters and Site elements. Implementation of PKI and CNSS requirements, and execution of the NNSA Application Modernization Strategy	**+35,364**
Enterprise Secure Computing: No change.	**0**
Federal Unclassified Information Technology: Federal Unclassified Information Technology provides commodity computing infrastructure, which enables effective collaboration and information sharing necessary for NNSA Federal employees and support contractors. Even with diligent oversight, the information technology capabilities and components will remain at least two years behind current technologies.	**-786**
Total, Information Technology and Cybersecurity (formerly NNSA CIO Activities)	**+34,578**

Information Technology and Cybersecurity (formerly NNSA CIO Activities)
Cybersecurity

Description

The highly complex and global nature of the NNSA mission environment makes it critically important that information and information assets are managed and protected using an effective risk management approach. Well-informed management decisions require a systematic understanding of the risks inherent in the use of information systems. All information collected, created, processed, transmitted, stored, or disseminated by, or on behalf of, the NNSA on automated information systems requires a level of protection commensurate with the risk to the information and the associated information processing systems. The information systems facilitating these activities must also be protected.

Infrastructure Program

The infrastructure program supports the cybersecurity operations and activities at NNSA M&O sites. The cybersecurity operations and infrastructure program is built around a defense-in-depth approach for achieving cybersecurity in a highly networked environment. The defense-in-depth approach is a combination of known best practices and cost strategy that relies on the intelligent application of techniques and technologies which exist today that address the increasing number and complexity of cybersecurity threats, vulnerabilities and risks.

Technology Application Development

Technology Application Development is responsible for developing and advancing policies and initiatives that will support short and long-term solutions to specific cybersecurity needs at the NNSA sites and headquarters locations and will focus on emerging technologies and leverage existing technology resources to create a more secure environment.

Cybersecurity

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Infrastructure Program		
• Leverage cloud computing to enable a low-cost shared services model. • Build the next generation mobile Infrastructure. • Contribute to implementation of the JC3. • Finalize Implementation of the NNSA Continuous Asset Monitoring (CAM) Program. • Develop Supply Chain Management protection strategies. • Identify and document NNSA mission critical information systems and applications. • Aggregate evaluation of site-wide implementation of Cybersecurity program requirements. • Initial Operating capability of CNSS requirements on all national security systems. • Improve situational awareness by providing access to Top Secret information to the IARC.	• Continue to maintain and support the infrastructure program that supports the cybersecurity operations and activities at NNSA M&O sites around a defense-in-depth approach. • Continue CNSS requirements. • Complete PKI implementation on classified networks. • Leverage Secret Fabric Application Hosting Environment (AHE) for deploying shared services and applications.	• Build on previous efforts and provide continuous improvements and increased efficiencies. • Provide for the implementation of the ICAM project. • Enhance security posture for access control.
Technology Application Development		
• Employ a layered defense-in-depth cybersecurity model across the NNSA enterprise that will ensure integrated and layered protections are implemented consistently across NNSA computing environments. • Contribute to improvement to JC3 capability and enhancement to the capability.	• Continue to develop and advance policies and initiatives that will support short and long-term solutions to specific cybersecurity needs at the NNSA sites and headquarters locations and focus on emerging technologies and leverage existing technology resources to create a more secure environment.	• Build on previous efforts and provides continuous improvements and increased efficiencies.

Information Technology and Cybersecurity (formerly NNSA CIO Activities)
Enterprise Secure Computing

Description
Enterprise Secure Computing (ESC) provides state-of-the-art enterprise level classified computing infrastructure that enables effective collaboration and information sharing necessary for the NNSA enterprise. It has two components:

- The NNSA Secret Network (NSN) allows the processing of Secret/National Security Information (NSI) and allows interconnection with DoD SIPRNET.
- The Enterprise Secure Network (ESN) operates at the Secret/Restricted Data level and consists of independent site installations of standardized equipment and commercial off-the-shelf (COTS) software integrated through a common infrastructure and shared policies and procedures.

ESC features an enterprise-level identity model, strong (two-factor) authentication, and a centralized monitoring and analysis capability. The program provides the necessary secure infrastructure and cybersecurity systems required to meet the informational needs of the science-based stockpile stewardship program with a modeling and simulation-based science and engineering environment. ESC provides a broad base of security and network services that include: application integration; authentication services; directory services; enterprise data resource management; IARC Security Operations Center and Network Operations Center; Identity and Access Management; PKI; and security monitoring /intrusion detection.

ESC is the classified environment with which all of the DOE/NNSA laboratories and sites communicate and share information regarding NNSA's primary mission. ESC continually looks to improve the infrastructure of our network in order to provide our services to the enterprise. An example of this is the new VTC capability and Virtual Desktop Infrastructure (VDI). We are using two-factor authentication for the ESN secure network, which is used to process classified information. Strong, two-factor authentication is state-of-the-art for security systems and is considered the minimum standard for the ESN secure network. The servers, routers, and taclanes we have procured for the network are all considered the minimum required to achieve the necessary security.

ESN is also serving as the base network for the classified commodity services, which entails a next-generation approach to classified collaborative computing using the above-mentioned secure virtual desktop infrastructure (VDI) to enable the disparate DOE/NNSA entities to share information. An effort to consolidate disparate classified networks is currently underway. This will enable the NNSA CIO to more effectively manage classified information and to maximize the actual networks, infrastructures and capabilities into a greater whole. Also, an enterprise-wide project is underway to consolidate services within a cloud structure, enhance redundancy in the infrastructure and provide additional security measures.

The ESN is currently deployed at all NNSA and multiple DOE sites, other departments and organizations, and select allied nations. There are additional sites being integrated and limited-access gateways under development and improvement.

Enterprise Secure Computing

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Enterprise Secure Computing		
• Continue integration of Product Realization Integrated Digital Enterprise (PRIDE) applications. • Continue deployment of the Small Site Hub. • Continue development of classified cloud. computing for the 2NV Virtual Desktop Infrastructure. • Two-factor authentication PKI for NSI infrastructure. • Implementation of the Department computer network defense service provider. • Implementation of voice over IP within the classified environment. • Implement an Enterprise Application Hosting Environment. • Provide enterprise commodity services. • Implement enterprise email and commodity IT services. • Implement enterprise account management system. • Establish enterprise customer support services. • Implement cost recovery process for enterprise IT services. • Expand Secure VTC services to include DoD sites. • Transition NNSA sites to ESN provisioned services.	• Continue to maintain and implement enterprise level classified computing infrastructure that enables effective collaboration and information sharing necessary for the NNSA Enterprise. • Expand AHE and VDI environment to support enterprise systems consolidation. • Transition mission applications into the enterprise AHE. • Transition participating sites to enterprise email services. • Transition participating sites to enterprise VDI. • Expand NSI infrastructure to provision commodity services. • Two-factor authentication PKI for Secret/Restricted Data infrastructure. • Implement high performance desktop computing.	• Build on previous efforts and provides continuous improvements and increased efficiencies.

Information Technology and Cybersecurity (formerly NNSA CIO Activities)
Federal Unclassified Information Technology

Description

Federal Unclassified Information Technology provides commodity computing infrastructure, which enables effective collaboration and information sharing necessary for NNSA Federal employees and support contractors. The 2NV vision and strategy will shift from a traditional, costly desktop support model to a cloud-provisioned virtualized desktop-based solution. The 2NV is the IT transformation that is a foundational activity towards implementing the OneNNSA vision. Each of the investments in the 2NV portfolio directly supports a cybersecurity outcome. OneVoice provides an encrypted collaboration suite for multi-site communications; OneNNSA Network provides a secure encrypted wide area network solution over the ESN network, and OneID provides secure, single sign on capabilities. In order to think, behave, and respond as one cohesive agency with a shared, critical national security mission, it is necessary to re-engineer our telecommunications networks to remove the technical barriers to collaboration and to outfit our employees with the effective communication tools to maximize their efficiency and lower operational costs.

Federal Unclassified Information Technology

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Federal Unclassified Information Technology		
• Implementation of current 2NV-related technology. • Increase efficiencies related to the provisioning of the commodity computing infrastructure and IT solutions in order to re-invest savings to generate new efficiencies. • Coordinate the delivery of Federal desktop services as provisioned by DOE. • Provide IT technical services and incidental advisory and assistance services. • Provide hardware and software licensing, maintenance and refresh. • Provide funding to field offices for IT services provisioned by their M&O partners.	• Continue to support technology implementation and evolution which enables effective collaboration and information sharing necessary for NNSA Federal employees and support contractors as they carry out the agency's mission. • Coordinate the delivery of Federal desktop services as provisioned by the Department of Energy. • Provide IT technical services and incidental advisory and assistance services. • Provide hardware and software licensing, maintenance and refresh. • Provide funding to field offices for IT services provisioned by their M&O partners. • Work with the NNSA M&O partners to begin the implementation of a shared services model. • Provide oversight of the M&O partners' unclassified IT programs. • Implement application modernization, portal and shared drive consolidation.	• Build on previous efforts and provide continuous improvements and increased efficiencies in the IT portfolio. • Enable expansion of M&O unclassified shared services, leveraging the 2NV, YOURCloud, and OneNNSA Network.

Information Technology and Cybersecurity (formerly NNSA CIO Activities) Performance Measures

In accordance with the GPRA Modernization Act of 2010, the Department sets targets for, and tracks progress toward, achieving performance goals for each program. For more information, refer to the Department's FY 2013 Annual Performance Report.

	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Cybersecurity Assessment Reviews - Annual Percentage of Cybersecurity Site Assessment Reviews conducted by the Office of Health, Safety, and Security (HSS) and that resulted in the rating of "effective."							
Target	100% of reviews resulting in "effective" rating	100% of reviews resulting in "effective" rating	100% of reviews resulting in "effective" rating	100% of reviews resulting in "effective" rating	100% of reviews resulting in "effective" rating	100% of reviews resulting in "effective" rating	100% of reviews resulting in "effective" rating
Result	**Met** – 100						
Endpoint Target	Annually, achieve at least an effective rating of 100% of OCIO site assistance visits (SAV) Cybersecurity reviews.						

Information Technology and Cybersecurity (formerly NNSA CIO Activities)
Other Information

Full Cost Recovery Estimates

	(Dollars in Thousands)			
	FY 2013 Current	FY 2014 Request	FY 2015 Request	FY 2015 vs FY 2014 $
Site				
Kansas City Plant	0	800	0	-800
Lawrence Livermore National Laboratory	0	3,200	2,600	-600
Los Alamos National Laboratory	0	3,200	3,200	0
Nevada National Security Site	0	0	600	600
Pantex Plant	0	0	20	20
Sandia National Laboratories	0	3,200	3,600	400
Y-12 National Security Complex	0	0	0	0
Total	**0**	**10,400**	**10,020**	**-380**

The Department requests and receives direct appropriations for funded, mission-driven activities focused on research and development of information technology and cybersecurity solutions. Because some support is provided to other programs, including Work for Others (WFO), starting in FY 2014, the Department began charging full cost recovery for these materials and services provided to agencies outside the Department. This is consistent with the October 1, 2008, memo from the DOE Chief Financial Officer on Indirect Funded Activity Issues and applicable laws.

An estimate of 20 percent has been used to calculate the amount of full cost recovery of activities that support and/or benefit WFO customers for FY 2014 and FY 2015. These costs will be allocated to the WFO customers as work is accomplished at the contractor site. The table above provides an estimate of costs that will be recovered from WFO customers. Work for Others estimates will be tracked during FY 2014, to validate the true full cost recovery amount necessary for future years.

National Security Applications

Overview
National Security Applications (NSA) provides the basis for the technical work that materially contributes to the Department's goal of enhancing nuclear security. Funds in this budget are primarily spent on key joint activities, such as the Defense Threat Reduction Agency (DTRA)-NNSA Memorandum of Understanding (MOU), signed by the NNSA Administrator and the Under Secretary of Defense for Acquisition, Technology, and Logistics (AT&L) in December 2008. The MOU provides for a jointly-funded, long-term commitment of resources for research and development (R&D) on counterterrorism, survivability, and weapons effects. The work performed under the MOU highlights areas for which NNSA and AT&L have unique expertise and share mission responsibility for the U.S. Government.

Highlights of the FY 2015 Budget Request
This section is not applicable. No funding after FY 2013.

Major Outyear Priorities and Assumptions
This section is not applicable. No funding after FY 2013.

National Security Applications
Funding

(Dollars in Thousands)

	FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Request	FY 2015 vs FY 2014 Enacted
National Security Applications	**9,500**	**0**	**0**	**0**	**0**

Outyears

(Dollars in Thousands)

	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
National Security Applications	**0**	**0**	**0**	**0**

National Security Applications Performance Measures

In accordance with the GPRA Modernization Act of 2010, the Department sets targets for, and tracks progress toward, achieving performance goals for each program. For more information, refer to the Department's FY 2013 Annual Performance Report.

	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Tools for Counter Terrorism and Weapons Effects - Percent complete toward delivery of a new generation of transportable, high-performance radiation source.							
Target	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Result							
Endpoint Target	Based on continuing HEWD concerns and reductions in the NSA line funding, NNSA re-scoped the technical collaboration with DTRA. NNSA and the NSA line ceased funding of these efforts in FY 2013.						
Tools for Nuclear Nonproliferation - Percent complete toward delivery of a prototype enhanced particle accelerator that can be used for proton and x-ray radiography diagnostics.							
Target	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Result							
Endpoint Target	Based on continuing HEWD concerns and reductions in the NSA line funding, NNSA re-scoped the technical collaboration with DTRA. NNSA and the NSA line ceased funding of these efforts in FY 2013.						

Department Of Energy
FY 2015 Congressional Budget
Funding By Appropriation By Site
($K)

Weapons Activities	FY 2013 Current	FY 2014 Enacted	FY 2015 Request
Argonne National Laboratory			
Science Campaign			
Science Campaign	10,657	0	0
Advanced Simulation & Computing Campaign			
Advanced Simulation & Computing Campaign	737	500	0
Readiness in Technical Base and Facilities			
Readiness in Technical Base and Facilities	467	50	0
Nuclear Counterterrorism Incident Response			
Nuclear Counterterrorism Incident Response	2,414	10,880	10,880
Total, Argonne National Laboratory	**14,275**	**11,430**	**10,880**
Bechtel Nevada			
Readiness in Technical Base and Facilities			
Readiness in Technical Base and Facilities	448	465	0
Total, Bechtel Nevada	**448**	**465**	**0**
Brookhaven National Laboratory			
Counterterrorism and Counterproliferation Programs			
Counterterrorism and Counterproliferation Programs	0	0	250
Readiness in Technical Base and Facilities			
Readiness in Technical Base and Facilities	160	200	0
Nuclear Counterterrorism Incident Response			
Nuclear Counterterrorism Incident Response	2,088	1,140	890
Total, Brookhaven National Laboratory	**2,248**	**1,340**	**1,140**
Chicago Operations Office			
Inertial Confinement Fusion Ignition High Yield Campaig			
Inertial Confinement Fusion Ignition High Yield Campaign	80	0	0
Advanced Simulation & Computing Campaign			
Advanced Simulation & Computing Campaign	0	1,500	0
Total, Chicago Operations Office	**80**	**1,500**	**0**
Consolidated Business Center			
Readiness in Technical Base and Facilities			
Readiness in Technical Base and Facilities	2,763	0	0
Total, Consolidated Business Center	**2,763**	**0**	**0**
General Atomics Site			
Inertial Confinement Fusion Ignition High Yield Campaig			
Inertial Confinement Fusion Ignition High Yield Campaign	0	21,889	23,500
Total, General Atomics Site	**0**	**21,889**	**23,500**

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Weapons Activities	FY 2013 Current	FY 2014 Enacted	FY 2015 Request
Idaho National Laboratory			
Directed Stockpile Work			
Directed Stockpile Work	100	100	0
Site Stewardship			
Site Stewardship	2,700	937	0
Readiness Campaign			
Readiness Campaign	175	0	0
Readiness in Technical Base and Facilities			
Readiness in Technical Base and Facilities	600	0	0
Nuclear Counterterrorism Incident Response			
Nuclear Counterterrorism Incident Response	3,386	7,133	7,133
Total, Idaho National Laboratory	**6,961**	**8,170**	**7,133**
Kansas City Plant			
Directed Stockpile Work			
Directed Stockpile Work	215,272	283,555	341,859
Site Stewardship			
Site Stewardship	0	3,867	4,715
Engineering Campaign			
Engineering Campaign	3,004	2,772	2,595
Advanced Simulation & Computing Campaign			
Advanced Simulation & Computing Campaign	500	479	0
Defense Nuclear Security			
Defense Nuclear Security	12,414	13,030	12,112
Readiness Campaign			
Readiness Campaign	40,709	43,162	48,413
Information technology and Cybersecurity			
Information technology and Cybersecurity	5,351	4,593	6,000
Readiness in Technical Base and Facilities			
Readiness in Technical Base and Facilities	155,756	174,965	163,361
Secure Transportation Asset			
Secure Transportation Asset	24,155	21,090	16,826
Nuclear Counterterrorism Incident Response			
Nuclear Counterterrorism Incident Response	11,515	14,583	14,583
Total, Kansas City Plant	**468,676**	**562,096**	**610,464**
Kansas City Site Office			
Science Campaign			
Science Campaign	125	0	0
Total, Kansas City Site Office	**125**	**0**	**0**

Weapons Activities	FY 2013 Current	FY 2014 Enacted	FY 2015 Request
Lawrence Berkeley National Laboratory			
Advanced Simulation & Computing Campaign			
Advanced Simulation & Computing Campaign	4,000	0	0
Total, Lawrence Berkeley National Laboratory	**4,000**	**0**	**0**
Lawrence Livermore National Laboratory			
Directed Stockpile Work			
Directed Stockpile Work	116,553	112,645	133,443
Science Campaign			
Science Campaign	93,358	104,237	117,768
Site Stewardship			
Site Stewardship	2,381	24,794	26,397
Counterterrorism and Counterproliferation Programs			
Counterterrorism and Counterproliferation Programs	0	0	27,650
Engineering Campaign			
Engineering Campaign	20,587	22,136	17,691
Inertial Confinement Fusion Ignition High Yield Campaig			
Inertial Confinement Fusion Ignition High Yield Campaign	286,920	329,500	328,500
Advanced Simulation & Computing Campaign			
Advanced Simulation & Computing Campaign	203,218	172,323	163,895
Defense Nuclear Security			
Defense Nuclear Security	47,305	57,754	53,684
Cybersecurity			
Cybersecurity	1,595	0	0
Readiness Campaign			
Readiness Campaign	0	0	9,123
Information technology and Cybersecurity			
Information technology and Cybersecurity	17,137	16,234	20,000
Readiness in Technical Base and Facilities			
Readiness in Technical Base and Facilities	184,172	108,902	105,206
Nuclear Counterterrorism Incident Response			
Nuclear Counterterrorism Incident Response	40,575	49,420	30,017
National Security Applications			
National Security Applications	2,900	0	0
Total, Lawrence Livermore National Laboratory	**1,016,701**	**997,945**	**1,033,374**

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Weapons Activities	FY 2013 Current	FY 2014 Enacted	FY 2015 Request
Los Alamos National Laboratory			
Directed Stockpile Work			
Directed Stockpile Work	367,182	409,978	453,501
Science Campaign			
Science Campaign	108,904	133,256	141,746
Site Stewardship			
Site Stewardship	1,929	2,150	3,060
Counterterrorism and Counterproliferation Programs			
Counterterrorism and Counterproliferation Programs	0	0	25,502
Engineering Campaign			
Engineering Campaign	26,287	24,750	22,119
Inertial Confinement Fusion Ignition High Yield Campaig			
Inertial Confinement Fusion Ignition High Yield Campaign	14,578	14,551	16,250
Advanced Simulation & Computing Campaign			
Advanced Simulation & Computing Campaign	163,605	225,578	216,589
Defense Nuclear Security			
Defense Nuclear Security	127,253	103,824	96,508
Cybersecurity			
Cybersecurity	120	0	0
Readiness Campaign			
Readiness Campaign	648	0	2,737
Information technology and Cybersecurity			
Information technology and Cybersecurity	16,773	15,560	20,000
Readiness in Technical Base and Facilities			
Readiness in Technical Base and Facilities	451,703	455,189	402,616
Nuclear Counterterrorism Incident Response			
Nuclear Counterterrorism Incident Response	47,791	33,966	16,964
National Security Applications			
National Security Applications	4,700	0	0
Total, Los Alamos National Laboratory	**1,331,473**	**1,418,802**	**1,417,592**

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Weapons Activities	FY 2013 Current	FY 2014 Enacted	FY 2015 Request
National Energy Technology Lab			
Directed Stockpile Work			
Directed Stockpile Work	7,123	10,093	5,776
Engineering Campaign			
Engineering Campaign	1,495	788	822
Inertial Confinement Fusion Ignition High Yield Campaig			
Inertial Confinement Fusion Ignition High Yield Campaign	175	0	0
Advanced Simulation & Computing Campaign			
Advanced Simulation & Computing Campaign	150	0	0
Readiness Campaign			
Readiness Campaign	4,822	2,230	2,550
Readiness in Technical Base and Facilities			
Readiness in Technical Base and Facilities	0	180	0
Total, National Energy Technology Lab	**13,765**	**13,291**	**9,148**
Naval Research Laboratory			
Inertial Confinement Fusion Ignition High Yield Campaig			
Inertial Confinement Fusion Ignition High Yield Campaign	0	4,451	7,000
Total, Naval Research Laboratory	**0**	**4,451**	**7,000**
Nevada National Security Site			
Directed Stockpile Work			
Directed Stockpile Work	38,740	37,871	39,493
Science Campaign			
Science Campaign	37,619	41,824	49,700
Engineering Campaign			
Engineering Campaign	25	0	0
Inertial Confinement Fusion Ignition High Yield Campaig			
Inertial Confinement Fusion Ignition High Yield Campaign	1,418	0	0
Readiness in Technical Base and Facilities			
Readiness in Technical Base and Facilities	140,832	149,250	135,752
Secure Transportation Asset			
Secure Transportation Asset	453	199	212
Nuclear Counterterrorism Incident Response			
Nuclear Counterterrorism Incident Response	42,685	18,666	18,591
Total, Nevada National Security Site	**261,772**	**247,810**	**243,748**
Nevada Site Office			
Defense Nuclear Security			
Defense Nuclear Security	65,716	70,300	65,346
Information technology and Cybersecurity			
Information technology and Cybersecurity	4,071	3,707	6,000
Total, Nevada Site Office	**69,787**	**74,007**	**71,346**

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Weapons Activities	FY 2013 Current	FY 2014 Enacted	FY 2015 Request
NNSA Albuquerque Complex			
Directed Stockpile Work			
Directed Stockpile Work	10,088	164,114	163,375
Science Campaign			
Science Campaign	30,759	49,040	45,100
Site Stewardship			
Site Stewardship	5,995	0	0
Engineering Campaign			
Engineering Campaign	2,150	15,758	14,961
Inertial Confinement Fusion Ignition High Yield Campaig			
Inertial Confinement Fusion Ignition High Yield Campaign	99,112	20,412	14,425
Advanced Simulation & Computing Campaign			
Advanced Simulation & Computing Campaign	12,932	20,539	18,000
Defense Nuclear Security			
Defense Nuclear Security	8,478	7,425	6,902
Readiness Campaign			
Readiness Campaign	22,203	705	0
Information technology and Cybersecurity			
Information technology and Cybersecurity	852	852	852
Readiness in Technical Base and Facilities			
Readiness in Technical Base and Facilities	1,624	4,452	4,129
Secure Transportation Asset			
Secure Transportation Asset	153,593	166,113	192,311
Nuclear Counterterrorism Incident Response			
Nuclear Counterterrorism Incident Response	2,987	9,733	9,733
Total, NNSA Albuquerque Complex	**350,773**	**459,143**	**469,788**
NNSA Production Office (NPO)			
Readiness Campaign			
Readiness Campaign	0	0	6,766
Readiness in Technical Base and Facilities			
Readiness in Technical Base and Facilities	3,587	0	0
Total, NNSA Production Office (NPO)	**3,587**	**0**	**6,766**

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Weapons Activities	FY 2013 Current	FY 2014 Enacted	FY 2015 Request
Oak Ridge Institute for Science & Education			
Science Campaign			
Science Campaign	100	0	0
Counterterrorism and Counterproliferation Programs			
Counterterrorism and Counterproliferation Programs	0	0	100
Inertial Confinement Fusion Ignition High Yield Campaig			
Inertial Confinement Fusion Ignition High Yield Campaign	75	0	0
Nuclear Counterterrorism Incident Response			
Nuclear Counterterrorism Incident Response	14,374	20,701	18,626
Total, Oak Ridge Institute for Science & Education	**14,549**	**20,701**	**18,726**
Oak Ridge National Laboratory			
Site Stewardship			
Site Stewardship	781	656	2,824
Counterterrorism and Counterproliferation Programs			
Counterterrorism and Counterproliferation Programs	0	0	500
Advanced Simulation & Computing Campaign			
Advanced Simulation & Computing Campaign	690	455	0
Readiness in Technical Base and Facilities			
Readiness in Technical Base and Facilities	4,095	3,278	0
Nuclear Counterterrorism Incident Response			
Nuclear Counterterrorism Incident Response	1,956	2,311	1,811
Total, Oak Ridge National Laboratory	**7,522**	**6,700**	**5,135**
Oak Ridge Office			
Domestic Uranium Enrichment RD&D			
Domestic Uranium Enrichment RD&D	0	62,000	0
Total, Oak Ridge Office	**0**	**62,000**	**0**
Office of Scientific & Technical Information			
Science Campaign			
Science Campaign	140	0	0
Information technology and Cybersecurity			
Information technology and Cybersecurity	235	212	255
Total, Office of Scientific & Technical Information	**375**	**212**	**255**

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Weapons Activities	FY 2013 Current	FY 2014 Enacted	FY 2015 Request
Pacific Northwest National Laboratory			
Directed Stockpile Work			
Directed Stockpile Work	234	9,100	11,470
Site Stewardship			
Site Stewardship	0	50	0
Counterterrorism and Counterproliferation Programs			
Counterterrorism and Counterproliferation Programs	0	0	150
Engineering Campaign			
Engineering Campaign	73	0	0
Readiness Campaign			
Readiness Campaign	9,583	0	0
Readiness in Technical Base and Facilities			
Readiness in Technical Base and Facilities	50	0	0
Nuclear Counterterrorism Incident Response			
Nuclear Counterterrorism Incident Response	3,373	8,260	8,149
Total, Pacific Northwest National Laboratory	**13,313**	**17,410**	**19,769**
Pantex Plant			
Directed Stockpile Work			
Directed Stockpile Work	190,212	229,757	230,261
Science Campaign			
Science Campaign	125	0	0
Site Stewardship			
Site Stewardship	0	15,475	13,082
Engineering Campaign			
Engineering Campaign	2,471	2,222	2,003
Defense Nuclear Security			
Defense Nuclear Security	119,633	128,329	119,286
Readiness Campaign			
Readiness Campaign	0	0	15,019
Information technology and Cybersecurity			
Information technology and Cybersecurity	6,819	6,264	8,500
Readiness in Technical Base and Facilities			
Readiness in Technical Base and Facilities	208,329	200,133	214,391
Secure Transportation Asset			
Secure Transportation Asset	6,552	5,719	6,617
Nuclear Counterterrorism Incident Response			
Nuclear Counterterrorism Incident Response	2,501	2,560	2,560
Total, Pantex Plant	**536,642**	**590,459**	**611,719**

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Weapons Activities	**FY 2013 Current**	**FY 2014 Enacted**	**FY 2015 Request**
Princeton Plasma Physics Laboratory			
Inertial Confinement Fusion Ignition High Yield Campaig			
Inertial Confinement Fusion Ignition High Yield Campaign	150	0	0
Total, Princeton Plasma Physics Laboratory	**150**	**0**	**0**
Richland Operations Office			
Readiness in Technical Base and Facilities			
Readiness in Technical Base and Facilities	100	105	0
Nuclear Counterterrorism Incident Response			
Nuclear Counterterrorism Incident Response	1,501	6,045	6,045
Total, Richland Operations Office	**1,601**	**6,150**	**6,045**

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Weapons Activities	FY 2013 Current	FY 2014 Enacted	FY 2015 Request
Sandia National Laboratories			
Directed Stockpile Work			
Directed Stockpile Work	694,002	837,805	934,065
Science Campaign			
Science Campaign	30,098	31,336	45,662
Site Stewardship			
Site Stewardship	820	6,233	7,463
Counterterrorism and Counterproliferation Programs			
Counterterrorism and Counterproliferation Programs	0	0	17,249
Engineering Campaign			
Engineering Campaign	62,411	75,395	68,093
Inertial Confinement Fusion Ignition High Yield Campaig			
Inertial Confinement Fusion Ignition High Yield Campaign	48,043	48,197	44,450
Advanced Simulation & Computing Campaign			
Advanced Simulation & Computing Campaign	124,123	133,411	135,634
Defense Nuclear Security			
Defense Nuclear Security	51,955	65,227	60,631
Cybersecurity			
Cybersecurity	120	0	0
Readiness Campaign			
Readiness Campaign	10,643	0	8,448
Information technology and Cybersecurity			
Information technology and Cybersecurity	16,717	16,180	20,000
Readiness in Technical Base and Facilities			
Readiness in Technical Base and Facilities	179,281	162,049	164,795
Secure Transportation Asset			
Secure Transportation Asset	10,547	16,856	17,824
Nuclear Counterterrorism Incident Response			
Nuclear Counterterrorism Incident Response	37,056	16,831	6,156
National Security Applications			
National Security Applications	1,900	0	0
Total, Sandia National Laboratories	**1,267,716**	**1,409,520**	**1,530,470**
Savannah River National Laboratory			
Nuclear Counterterrorism Incident Response			
Nuclear Counterterrorism Incident Response	21	0	0
Total, Savannah River National Laboratory	**21**	**0**	**0**
Savannah River Operations Office			
Directed Stockpile Work			
Directed Stockpile Work	0	1,091	1,695
Total, Savannah River Operations Office	**0**	**1,091**	**1,695**

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Weapons Activities	FY 2013 Current	FY 2014 Enacted	FY 2015 Request
Savannah River Site			
Directed Stockpile Work			
Directed Stockpile Work	46,987	76,484	99,771
Science Campaign			
Science Campaign	510	0	0
Site Stewardship			
Site Stewardship	915	355	0
Engineering Campaign			
Engineering Campaign	1,613	1,644	1,534
Inertial Confinement Fusion Ignition High Yield Campaig			
Inertial Confinement Fusion Ignition High Yield Campaign	125	0	0
Defense Nuclear Security			
Defense Nuclear Security	8,736	7,970	7,408
Information technology and Cybersecurity			
Information technology and Cybersecurity	5,241	4,592	6,000
Readiness in Technical Base and Facilities			
Readiness in Technical Base and Facilities	112,220	131,087	124,775
Nuclear Counterterrorism Incident Response			
Nuclear Counterterrorism Incident Response	2,643	450	450
Total, Savannah River Site	**178,990**	**222,582**	**239,938**
Savannah River Site Office			
Readiness Campaign			
Readiness Campaign	21,220	9,225	11,053
Total, Savannah River Site Office	**21,220**	**9,225**	**11,053**
SLAC National Accelerator Laboratory			
Science Campaign			
Science Campaign	2,430	0	0
Total, SLAC National Accelerator Laboratory	**2,430**	**0**	**0**
Stanford Site Office			
Inertial Confinement Fusion Ignition High Yield Campaig			
Inertial Confinement Fusion Ignition High Yield Campaign	2,000	0	0
Total, Stanford Site Office	**2,000**	**0**	**0**
University of Rochester			
Inertial Confinement Fusion Ignition High Yield Campaig			
Inertial Confinement Fusion Ignition High Yield Campaign	1,500	64,375	63,500
Total, University of Rochester	**1,500**	**64,375**	**63,500**

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Weapons Activities	FY 2013 Current	FY 2014 Enacted	FY 2015 Request
Washington Headquarters			
Directed Stockpile Work			
Directed Stockpile Work	27,051	16,801	82,671
Science Campaign			
Science Campaign	6,270	10,030	56,454
Site Stewardship			
Site Stewardship	49,216	27,484	19,815
Counterterrorism and Counterproliferation Programs			
Counterterrorism and Counterproliferation Programs	0	0	5,500
Engineering Campaign			
Engineering Campaign	2,009	1,714	4,080
Inertial Confinement Fusion Ignition High Yield Campaig			
Inertial Confinement Fusion Ignition High Yield Campaign	2,500	10,582	15,270
Advanced Simulation & Computing Campaign			
Advanced Simulation & Computing Campaign	3,373	14,305	75,990
Defense Nuclear Security			
Defense Nuclear Security	24,417	33,088	30,757
Cybersecurity			
Cybersecurity	10,165	0	0
Readiness Campaign			
Readiness Campaign	5,308	85	3,777
Legacy Contractor Pensions			
Legacy Contractor Pensions	170,191	279,597	307,058
Information technology and Cybersecurity			
Information technology and Cybersecurity	58,356	69,422	83,039
Readiness in Technical Base and Facilities			
Readiness in Technical Base and Facilities	6,207	17,481	69,299
Secure Transportation Asset			
Secure Transportation Asset	6,163	0	0
Nuclear Counterterrorism Incident Response			
Nuclear Counterterrorism Incident Response	8,443	13,008	2,000
Total, Washington Headquarters	**379,669**	**493,597**	**755,710**
Waste Isolation Pilot Plant			
Nuclear Counterterrorism Incident Response			
Nuclear Counterterrorism Incident Response	22	8,437	8,437
Total, Waste Isolation Pilot Plant	**22**	**8,437**	**8,437**

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Weapons Activities	FY 2013 Current	FY 2014 Enacted	FY 2015 Request
Y-12 National Security Complex			
Directed Stockpile Work			
Directed Stockpile Work	216,513	252,639	249,224
Science Campaign			
Science Campaign	125	0	0
Site Stewardship			
Site Stewardship	4,760	5,325	5,093
Engineering Campaign			
Engineering Campaign	2,289	2,732	2,107
Advanced Simulation & Computing Campaign			
Advanced Simulation & Computing Campaign	239	239	0
Readiness Campaign			
Readiness Campaign	0	0	18,023
Information technology and Cybersecurity			
Information technology and Cybersecurity	7,632	7,452	9,000
Readiness in Technical Base and Facilities			
Readiness in Technical Base and Facilities	637,023	656,052	668,210
Secure Transportation Asset			
Secure Transportation Asset	70	23	23
Nuclear Counterterrorism Incident Response			
Nuclear Counterterrorism Incident Response	1,757	4,119	10,415
Total, Y-12 National Security Complex	**870,408**	**928,581**	**962,095**
Y-12 Site Office			
Defense Nuclear Security			
Defense Nuclear Security	187,556	178,034	165,489
Readiness in Technical Base and Facilities			
Readiness in Technical Base and Facilities	0	3,587	2,987
Total, Y-12 Site Office	**187,556**	**181,621**	**168,476**
Total, Weapons Activities	**7,033,118**	**7,845,000**	**8,314,902**

Defense Nuclear Nonproliferation

Defense Nuclear Nonproliferation

FY 2015 Congressional Budget Request

Defense Nuclear Nonproliferation

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Defense Nuclear Nonproliferation
Proposed Appropriation Language

For Department of Energy expenses, including the purchase, construction, and acquisition of plant and capital equipment and other incidental expenses necessary for Defense Nuclear Nonproliferation 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, $1,555,156,000, to remain available until expended.

Explanation of Change

The FY 2015 Request reflects a decrease from the FY 2014 Enacted level due in large part to the decision to place the Mixed Oxide (MOX) Fuel Fabrication Facility construction project at the Savannah River Site in cold stand-by to further study more efficient options for plutonium disposition.

Public Law Authorizations

- P.L. 106-65, National Nuclear Security Administration Act, as amended
- P.L. 113-66, National Defense Authorization Act for Fiscal Year 2014
- P.L. 113-76, Consolidated Appropriations Act 2014

Defense Nuclear Nonproliferation

(Dollars in Thousands)

FY 2013 Current	FY 2014 Enacted [a]	FY 2014 Current	FY 2015 Request
2,237,420	**1,954,000**	**1,954,000**	**1,555,156**

Overview

The Defense Nuclear Nonproliferation (DNN) appropriation includes funding for activities that respond directly to the National Security Strategy of the United States, and are central to the Department of Energy's pursuit of its strategic goal of Nuclear Security, playing a critical role in meeting DOE's Strategic Objective 6 to reduce global nuclear security threats. DNN is the lead USG element for developing and implementing programs to limit or prevent the spread of nuclear and radiological materials and associated technology and expertise, to advance technologies that detect nuclear and radiological proliferation worldwide, and to eliminate or secure inventories of surplus materials and infrastructure usable for nuclear weapons. DNN participates in a whole-of-government policy process by formulating options and evaluating alternatives.

DNN implements its mission by drawing broadly on the scientific and technical expertise of DOE, as well as the DNN capacity for international outreach and engagement and its project management, implementation, and policy expertise. In addition, DNN draws upon the core competencies of other elements of NNSA and DOE, particularly the Office of Nuclear Energy, the Office of Environmental Management, and the Office of Science.

DNN carries out this mission in a dynamic global security environment characterized by the persistence and escalation of regional conflicts; continued diffusion of dual-use technology and information; continued expansion of civilian nuclear energy; ongoing challenges related to managing existing nuclear and other radiological materials; increased sophistication of trafficking networks; continued evidence of terrorist interest in procuring nuclear materials; challenges to the nonproliferation regime, and the growth of cyber threats that can directly affect nuclear safeguards and security.

DNN is a strong contributor to interagency and international nuclear security efforts. In the United States, DNN works in partnership with other U.S. Government agencies, most notably the Departments of State and Defense, the Nuclear Regulatory Commission. Internationally, DNN has a strong and long-established partnership with the International Atomic Energy Agency (IAEA), and has active bilateral program coordination, as well as multilateral program coordination consultations, through forums such as the Nuclear Security Summit, the Global Initiative to Combat Nuclear Terrorism, and the Global Partnership against the Spread of Weapons and Materials of Mass Destruction.

DNN manages the following within the appropriation: Global Threat Reduction Initiative (GTRI), DNN Research and Development (R&D), Nonproliferation and International Security (NIS), International Material Protection and Cooperation (IMPC), and Fissile Materials Disposition (FMD).

Highlights and Major Changes in the FY 2015 Budget Request

The DNN FY 2015 budget request supports the following key priorities:

- Continues remaining high-priority nuclear and radiological threat reduction efforts, following the accelerated four-year effort activities;
- Provides IAEA with critical mission support and strengthens international nuclear safeguards system;
- Provides funding to address urgent emerging threats in unstable regions, particularly the Middle East.
- Advances satellite payload activities that support treaty monitoring and military missions;

NNSA remains committed to the plutonium disposition mission and to the Plutonium Management and Disposition Agreement (PMDA) with Russia. However, due to cost increases and the current budget environment, the Mixed Oxide Fuel Fabrication Facility (MFFF) will be placed in cold stand-by while we further study more efficient options for plutonium disposition.

[a] Adjustments to FY 2014 Enacted funding reflect the approved DNN FY 2013 Reprogramming executed in FY 2014. The majority of the Use of Prior-Year Balances came from FY 2013 International Material Protection and Cooperation funding; the balance of $12,300,911 came from various programs and prior years.

DNN will develop technical detection capabilities that address current and projected threats to national security posed by the proliferation of nuclear weapons and diversion of special nuclear material and contribute substantially to the success of international nuclear treaties and agreements by having the technical means and policy context to support negotiations and detect non-compliance.

During the FY 2015-FY 2019 period, DNN will: continue to identify and eliminate excess HEU and plutonium; continue to secure and eliminate vulnerable nuclear and other radiological materials; and continue nuclear security cooperation with Russia and other countries with stockpiles of weapons-useable nuclear materials. DNN will also continue to advance the minimization of HEU use for civilian applications by maintaining the pace of its reactor conversion/shutdown efforts, while seeking increasing partnership and cost-sharing, particularly with Russia; and establishing a domestic Molybdenum-99 (Mo-99) production capability without the use of highly enriched uranium (HEU). Recognizing the importance of accelerating radiological security at home and abroad, DNN will evaluate its current radiological source inventory, scoping, budgeting, and project planning processes to identify ways to maximize resources and accelerate the program's completion timeline.

In addition, DNN will meet nuclear safeguards and security obligations, the oversight and implementation of the CFR Part 810 process and dual use export license reviews; and continue to support peaceful uses (123) agreement negotiations with foreign partners.

Major Outyear Priorities and Assumptions
Outyear funding levels for the Defense Nuclear Nonproliferation appropriation total $6,873,630,000 for FY 2016 through FY 2019, based on the following priorities and assumptions:

DNN will continue to play a key role in the international effort to secure vulnerable nuclear materials around the world and prevent illicit trafficking and support commitments made by the United States and our international partners at the Nuclear Security Summits held in Washington, D.C. in 2010 and Seoul, South Korea in 2012, and those planned for The Hague, Netherlands in 2014 and the United States in 2016.

DNN will continue remaining high-priority nuclear and radiological threat reduction efforts, and building capacity to prevent illicit trafficking in these materials, following the accelerated four-year effort activities; continue implementation of actions from the 2010, 2012, and 2014 Nuclear Security Summits; continue cooperative work with international partners through the G8 Global Partnership on nuclear security; and implement an engagement strategy with partner countries that carefully balances threat and indigenous resources. This budget also assumes that, given the new MNEPR framework mentioned in the following paragraph, Russia will take on increasing responsibility for conversion/shutdown of its HEU-fueled research reactors.

The United States and Russia will continue to implement the Protocol to the Framework Agreement on a Multilateral Nuclear Environmental Programme in the Russian Federation (MNEPR) and a subordinate Implementing Agreement signed on June 14, 2013. The MNEPR Protocol succeeds and replaces the 1992 U.S.-Russia Cooperative Threat Reduction (CTR) Agreement, which expired June 17, 2013 and brings DOE/ NNSA's nuclear security cooperation with Russia under the 2003 MNEPR Framework Agreement.

DNN will continue to reduce nuclear danger through field experimentation and research spirals in nuclear nonproliferation, test monitoring, arms control, and threat reduction for meeting the Administration's nuclear nonproliferation and arms control goals.

DNN will contribute to the nation's space based global nuclear detonation detection capability per Public Law 110-181; Sec 1065 & Public Law 111-383; Sec 913 (National Defense Authorization Acts for Fiscal Years 2008 and 2011).

The network of nuclear security centers of excellence that resulted from the 2010, 2012, and 2014 Nuclear Security Summits will continue. DNN will continue to support technical engagement on nuclear security for expanded dialogue with China, India, and other countries.

DNN will continue to engage internationally in efforts to prevent the proliferation of nuclear expertise. This includes providing a knowledge security curriculum to international implementing partners to enable organizations to incorporate this training into existing programs. These activities support the agenda on expertise security advanced by the Nuclear Security Summit process.

DNN will continue to close key gaps in the global nuclear detection architecture through its Second Line of Defense program in accordance with its refocused strategic approach.

FY 2013 Key Accomplishments

- Exceeded the target of 3,835 kilograms for FY 2013 by 1,182 kgs, including removing or verifying the disposition of 1,555 kilograms of HEU in FY 2013 for a cumulative total of more than 5,017 kilograms of HEU and plutonium.
- Converted or verified the shutdown of a total of six research reactors or isotope production facilities from HEU fuels/targets to LEU, for a cumulative total of 88.
- Recovered more than 8,500 radioactive sources from around the world, including high-activity sources in Philadelphia, Boston, and Juarez, Mexico, as well as removing the remaining Russian radioisotope thermoelectric generators (RTGs) from the Northern Sea Route.
- Achieved 8-year goal of demonstrating the next generation of technologies and methods to detect Special Nuclear Material movement (SNM).
- Delivered three Global Burst Detector (GBD) payloads to the Air Force Space and Missile Systems Center for integration on the final Global Positioning System (GPS) IIF satellite and the first two next-generation GPS III satellites for space-based nuclear detonation detection.
- Monitored the conversion of 26 MT of Russian weapons-origin HEU to LEU for a cumulative total of 488 MT down-blended and verifiably eliminated.
- Facilitated Burma's (Myanmar) decision to sign and implement an Additional Protocol (AP) with the International Atomic Energy Agency (IAEA), allowing for expanded access to facilities and requiring greater information sharing with the IAEA about its nuclear activities.
- Negotiated and signed a new bilateral nuclear security agreement and a new Agreement on Cooperation in Nuclear- and Energy-Related Scientific Research and Development with the Russian Federation.
- Deployed fixed radiation equipment to build capacity to prevent illicit trafficking to 20 sites in 7 countries and provided 16 mobile detection systems to 7 countries, all including the provision of training and initial sustainability support.
- Completed first 12.1 MT of HEU downblending for the MOX back-up LEU inventory and signed the 5 MT contract extension.
- Produced 150 kg of certified plutonium oxide at Los Alamos National Laboratory (LANL) as feedstock for the U.S. plutonium disposition program, bringing the cumulate total to 592 kg.

Department of Energy (DOE) Working Capital Fund (WCF) Support

The NNSA Defense Nuclear Nonproliferation appropriation projected contribution to the DOE Working Capital Fund for FY 2015 is $5,939,000. DOE is working to achieve economies of scale through an enhanced Working Capital Fund (WCF).

Legacy Contractor Pensions

This program provides the annual Defense Nuclear Nonproliferation share of the Department of reimbursement of payments made to the University of California Retirement Plan (UCRP) for former University of California employees and annuitants who worked at the Lawrence Livermore National Laboratory (LLNL) and LANL. The UCRP benefit for these individuals is a legacy cost and DOE's annual payment to the University of California is required by contracts. The amount of the annual payment is based on the actuarial valuation report and is covered by the terms described in the Appendix T section of the contracts. Funding for these contracts will be paid through the Legacy Contractor Pension line.

NNSA Graduate Fellowship Program (NGFP) Support

The NNSA manages a technical fellowship program to cultivate the next generation of future leaders in nonproliferation, nuclear security, and international security to create a pipeline of highly qualified professionals who will sustain expertise in these areas through future employment within the nuclear security enterprise. The majority of these efforts directly support program activities, and programs funded in the Defense Nuclear Nonproliferation appropriation plan totaling up to approximately $3,000,000 in FY 2015, in areas including international nuclear security relations, global threat reduction, fissile materials disposition, and international material protection and cooperation.

Defense Nuclear Nonproliferation
Funding by Congressional Control

(Dollars in Thousands)

	FY 2013 Current	FY 2014 Enacted	FY 2014 Adjustments [a]	FY 2014 Current	FY 2015 Request	FY 2015 vs FY 2014 Enacted
Defense Nuclear Nonproliferation						
Global Threat Reduction Initiative						
Global Threat Reduction Initiative	462,892	0	0	0	333,488	+333,488
Highly Enriched Uranium (HEU) Reactor Conversion	0	162,000	0	162,000	0	-162,000
International Nuclear and Radiological Material Removal And Protection	0	200,102	0	200,102	0	-200,102
Domestic Radiological Material Removal and Protection	0	80,000	0	80,000	0	-80,000
Total, Global Threat Reduction Initiative	462,892	442,102	0	442,102	333,488	-108,614
Defense Nuclear Nonproliferation R&D	420,509	398,838	70,011	468,849	360,808	-38,030
Nonproliferation and International Security	143,106	128,675	7,013	135,688	141,359	+12,684
International Material Protection and Cooperation	527,925	419,625	0	419,625	305,467	-114,158
Fissile Materials Disposition						
U.S. Surplus Fissile Materials Disposition						
Operations and Maintenance (O&M)						
U.S. Plutonium Disposition	189,480	157,557	0	157,557	85,000	-72,557
U.S. Uranium Disposition	23,958	25,000	0	25,000	25,000	0
Operations and Maintenance	213,438	182,557	0	182,557	110,000	-72,557
Construction	449,394	343,500	59,243	402,743	201,125	-142,375
Total, U.S. Surplus Fissile Materials Disposition	662,832	526,057	59,243	585,300	311,125	-214,932
Russian Materials Disposition	922	0	0	0	0	0
Total, Fissile Materials Disposition	663,754	526,057	59,243	585,300	311,125	-214,932
Legacy Contractor Pensions	51,438	93,703	22,853	116,556	102,909	+9,206
Subtotal, Defense Nuclear Nonproliferation	2,269,624	2,009,000	159,120	2,168,120	1,555,156	-453,844
Use of Prior Year Balances	-32,204	-55,000	-159,120	-214,120	0	55,000
Total, Defense Nuclear Nonproliferation	2,237,420	1,954,000	0	1,954,000	1,555,156	-398,844

[a] Adjustments to FY 2014 Enacted funding reflect the approved DNN FY 2013 Reprogramming executed in FY 2014. The majority of the Use of Prior-Year Balances came from FY 2013 International Material Protection and Cooperation funding; the balance of $12,300,911 came from various programs and prior years.

SBIR/STTR:

- FY 2013 Transferred: SBIR: $7,990; STTR: $1,036
- FY 2014 Enacted: SBIR: $5,890; STTR: $842
- FY 2014 Projected: SBIR: $6,975; STTR: $997
- FY 2015 Request: SBIR: $5,496; STTR: $758

Outyears for Defense Nuclear Nonproliferation

	(Dollars in Thousands)			
	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Global Threat Reduction Initiative	**397,816**	**406,272**	**454,628**	**488,415**
Defense Nuclear Nonproliferation R&D	**387,039**	**396,043**	**405,050**	**414,058**
Nonproliferation and International Security	**145,887**	**149,341**	**160,796**	**164,252**
International Material Protection and Cooperation	**361,509**	**360,000**	**334,000**	**312,000**
Fissile Materials Disposition				
U.S. Surplus Fissile Materials Disposition				
Operations and Maintenance (O&M)				
U.S. Plutonium Disposition	**86,187**	**93,951**	**96,717**	**104,484**
U.S. Uranium Disposition	**25,000**	**25,000**	**25,000**	**25,000**
Total, Operations and Maintenance	**111,187**	**118,951**	**121,717**	**129,484**
Construction	**196,000**	**196,000**	**196,000**	**196,000**
Total, U.S. Surplus Fissile Materials Disposition	**307,187**	**314,951**	**317,717**	**325,484**
Russian Materials Disposition	**5,000**	**5,000**	**10,000**	**10,000**
Total, Fissile Materials Disposition	**312,187**	**319,951**	**327,717**	**335,484**
Legacy Contractor Pensions	**90,041**	**69,208**	**52,640**	**29,296**
Subtotal, Defense Nuclear Nonproliferation	**1,694,479**	**1,700,815**	**1,734,831**	**1,743,505**
Use of Prior Year Balances	**0**	**0**	**0**	**0**
Total, Defense Nuclear Nonproliferation	**1,694,479**	**1,700,815**	**1,734,831**	**1,743,505**

SBIR/STTR:

- FY 2016 Request: SBIR: $6,163; STTR: $924
- FY 2017 Request: SBIR: $6,726; STTR: $946
- FY 2018 Request: SBIR: $6,876; STTR: $967
- FY 2019 Request: SBIR: $7,026; STTR: $988

Research and Development

The Office of Management and Budget (OMB) Circular No. A-11, "Preparation, Submission, and Execution of the Budget," dated July 2013, requires the reporting of research and development (R&D) data. Consistent with this requirement, R&D activities funded by NNSA are displayed below.

(Dollars in Thousands)

	FY 2013 Current	FY 2014 Enacted	FY 2015 Request	FY 2015 vs FY 2014 Enacted
Research and Development (R&D)				
Basic	42,458	34,285	30,924	-3,361
Applied	219,936	151,428	136,581	-14,847
Development	35,293	24,403	22,010	-2,393
Total, R&D	**297,687**	**210,116**	**189,515**	**-20,601**

Global Threat Reduction Initiative

Overview

The FY 2015 Budget Request supports national security priorities articulated in the National Security Strategy of the United States and the Nuclear Posture Review, which are reflected in the Department of Energy Strategic Plan. These priorities include the efforts to secure or eliminate the world's most vulnerable nuclear weapon materials; disposing of excess nuclear weapon materials in the United States; supporting the development of new technologies for nonproliferation; promoting the secure expansion of nuclear energy; and improving capabilities worldwide to deter and detect the illicit movement of nuclear and radiological materials.

To achieve these national security and organizational strategic objectives, the President requested Fiscal Year (FY) 2015 funding in the Defense Nuclear Nonproliferation appropriation for five DOE/NNSA programs managed by the Office of Defense Nuclear Nonproliferation (DNN). These DNN programs provide the technical leadership to remove and eliminate, or secure and safeguard, the most vulnerable nuclear and radiological materials worldwide; limit or prevent the illegal transfer and illicit trafficking of weapons-usable nuclear and other radiological materials, technology, and expertise; and advance national and international technical capabilities to understand and detect foreign nuclear weapons production and detonation. DOE/NNSA also works to strengthen regulatory, safety, security and safeguards infrastructure in countries new to nuclear power and provide technical and analytical support, and capability development, for meeting and monitoring compliance with nuclear nonproliferation, and arms control treaties.

The Global Threat Reduction Initiative (GTRI) directly contributes to meeting the DOE strategic goal for “Nuclear Security” and plays a critical role in meeting Strategic Objectives 6 to reduce global nuclear security threats. GTRI reduces and protects vulnerable nuclear and radiological materials located at civilian sites worldwide that could be used by terrorists to make an improvised nuclear device or a radiological dispersal device. GTRI activities directly support DOE strategic objectives by enhancing nuclear security and reducing global nuclear dangers through efforts to convert research reactors and medical isotope production facilities from the use of highly enriched uranium (HEU) to low enriched uranium (LEU), remove and/or eliminate excess nuclear and radiological materials, and secure nuclear and radiological materials.

Highlights of the FY 2015 Budget Request

- The reactor conversion program will maintain the pace of conversions/shutdowns during the FY 2015 - FY 2019 time frame, while seeking increasing partnership and cost-sharing with Russia.
- During this time frame, the United States will accelerate the establishment of a domestic Mo-99 capability produced without HEU by December 2015 and assist global Mo-99 production facilities to convert to the use of LEU targets by the end of 2016.
- The nuclear material removal programs will continue to identify and eliminate excess HEU and plutonium, including removing or disposing of 125 kilograms of material from Belarus, Kazakhstan, Italy, and Canada.
- By the end of FY 2015, GTRI will have protected an additional 105 buildings with high-priority radioactive sources. Fifty-three of these buildings will be located at domestic sites and 52 buildings located at international sites.
- By the end of FY 2015, GTRI will have recovered an additional 2,000 disused and unwanted radioactive sealed sources from sites located throughout the United States.

Major Outyear Priorities and Assumptions

Outyear funding levels for the GTRI program total $1,747,131,000 for FY 2016 through FY 2019. GTRI plays a key role in the international effort to secure vulnerable nuclear materials around the world and supports commitments made by the United States and our international partners at international forums such as the Nuclear Security Summits held in Washington, D.C. in FY 2010 and Seoul, South Korea in FY 2012, and those planned for The Hague, Netherlands in FY 2014 and the United States (location still to be determined) in FY 2016. GTRI works in over 100 countries around the world to implement nuclear and radiological threat reduction in line with this goal. By the end of FY 2019, GTRI will have converted or verified the shutdown of 119 HEU research reactors and isotope production facilities, and removed 6,142 (kilograms of excess weapons-useable nuclear materials.

In the protect component of the GTRI mission, the program will complete security upgrades at 2,408 buildings with high-priority nuclear and radiological materials by the end of FY 2019. In the coming year, GTRI will be evaluating its current inventory, scoping, budgeting and project planning processes to identify changes that will maximize resources to facilitate and decrease in the program’s outyear completion timeline. Among other factors, GTRI will give consideration to emerging non-radioactive alternative technologies, which will decrease the demand for the most commonly used radioactive isotopes and the devices that use them; the development of tracking technologies for mobile industrial devices containing radiological sources; and more cost-sharing or incentive arrangements for domestic and international protection program that will allow GTRI to achieve lower lifecycle costs and faster implementation.

Global Threat Reduction Initiative
Funding

(Dollars in Thousands)

	FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Request	FY 2015 vs FY 2014 Enacted
Global Threat Reduction Initiative					
Highly Enriched Uranium (HEU) Reactor Conversion	**146,072**	**162,000**	**162,000**	**122,383**	**-39,617**
Nuclear and Radiological Material Removal					
Nuclear Material Removal	0	0	0	58,441	+58,441
Russian-Origin Nuclear Material Removal	84,443	0	0	0	0
U.S.-Origin Nuclear Material Removal	6,049	0	0	0	0
Gap Nuclear Material Removal	40,321	0	0	0	0
Emerging Threat Nuclear Material Removal	8,764	0	0	10,095	+10,095
International Radiological Material Removal	11,978	0	0	12,601	+12,601
Domestic Radiological Material Removal	20,532	0	0	20,645	+20,645
Total, Nuclear and Radiological Material Removal	**172,087**	**0**	**0**	**101,782**	**+101,782**
Nuclear and Radiological Material Protection					
BN-350 Nuclear Material Protection	132	0	0	0	0
International Material Protection	79,507	0	0	51,336	+51,336
Domestic Material Protection	62,928	0	0	57,987	+57,987
Total, Nuclear and Radiological Material Protection	**142,567**	**0**	**0**	**109,323**	**+109,323**
International Nuclear and Radiological Material Removal and Protection					
Russian-Origin Nuclear Material Removal	0	**78,000**	**78,000**	0	-78,000
U.S.-Origin Nuclear Material Removal	0	**5,000**	**5,000**	0	-5,000
Gap Nuclear Material Removal	0	**32,102**	**32,102**	0	-32,102
Emerging Threat Nuclear Material Removal	0	**13,000**	**13,000**	0	-13,000
International Radiological Material Removal	0	**13,000**	**13,000**	0	-13,000
International Material Protection	0	**59,000**	**59,000**	0	-59,000
Total, International Nuclear and Radiological Material Removal And Protection	**0**	**200,102**	**200,102**	**0**	**-200,102**
Domestic Radiological Material Removal and Protection					
Domestic Radiological Material Removal	0	20,600	20,600	0	-20,600
Domestic Material Protection	0	59,400	59,400	0	-59,400
Total, Domestic Radiological Material Removal and Protection	**0**	**80,000**	**80,000**	**0**	**-80,000**
International Contributions [c]	**2,166**	**0**	**0**	**0**	**0**
International Removal and Protection [non add]	0	0	0	[132,473]	[132,473]
Domestic Removal and Protection [non add]	0	0	0	[78,632]	[+78,632]
Total, Global Threat Reduction Initiative	**462,892**	**442,102**	**442,102**	**333,488**	**-108,614**

[a] In FY 2014, the Consolidated Appropriations Act moved the international nuclear and radiological removal efforts under a new control point where in the FY 2013 budget these activities were captured under both Nuclear and Radiological Material Removal and Nuclear and Radiological Material Protection.

[b] In FY 2014, the Consolidated Appropriations Act moved the domestic nuclear and radiological removal efforts under a new control point where in the FY 2013 budget these activities were captured under both Nuclear and Radiological Material Removal and Nuclear and Radiological Material Protection. GTRI requests that the FY 2015 budget be allowed to revert to single control point structure consistent with FY 2013, while committing to greater transparency over internal funding transfers.

[c] GTRI will work with international partners to solicit international contributions to support projects of mutual interest. As in previous years, GTRI anticipates continued support for its critical international nuclear and radiological security projects. The FY 2013 total includes international contributions of $650K from the Netherlands and $1,516K from the United Kingdom.

Outyears for Global Threat Reduction Initiative

	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
	(Dollars in Thousands)			
Global Threat Reduction Initiative				
Highly Enriched Uranium (HEU) Reactor Conversion	**121,000**	**116,000**	**127,418**	**135,000**
Nuclear and Radiological Material Removal				
Nuclear Material Removal	121,000	118,000	110,000	110,000
Russian-Origin Nuclear Material Removal	0	0	0	0
U.S.-Origin Nuclear Material Removal	0	0	0	0
Gap Nuclear Material Removal	0	0	0	0
Emerging Threat Nuclear Material Removal	6,000	6,000	11,000	6,000
International Radiological Material Removal	3,000	3,000	3,000	3,000
Domestic Radiological Material Removal	19,000	19,000	21,000	23,000
Total, Nuclear and Radiological Material Removal	**149,000**	**146,000**	**145,000**	**142,000**
Nuclear and Radiological Material Protection				
BN-350 Nuclear Material Protection	0	0	0	0
International Material Protection	61,223	63,500	73,000	75,000
Domestic Material Protection	66,593	80,772	109,210	136,415
Total, Nuclear and Radiological Material Protection	**127,816**	**144,272**	**182,210**	**211,415**
International Nuclear and Radiological Material Removal and Protection				
Russian-Origin Nuclear Material Removal	0	0	0	0
U.S.-Origin Nuclear Material Removal	0	0	0	0
Gap Nuclear Material Removal	0	0	0	0
Emerging Threat Nuclear Material Removal	0	0	0	0
International Radiological Material Removal	0	0	0	0
International Material Protection	0	0	0	0
Total, International Nuclear and Radiological Material Removal And Protection	**0**	**0**	**0**	**0**
Domestic Radiological Material Removal and Protection				
Domestic Radiological Material Removal	0	0	0	0
Domestic Material Protection	0	0	0	0
Total, Domestic Radiological Material Removal and Protection	**0**	**0**	**0**	**0**
International Contributions				
International Removal and Protection [non add]	[191,223]	[190,500]	[197,000]	[194,000]
Domestic Removal and Protection [non add]	[85,593]	[99,772]	[130,210]	[159,415]
Total, Global Threat Reduction Initiative	**397,816**	**406,272**	**454,628**	**488,415**

Budget Structure Changes

The FY 2014 Consolidated Appropriations Act made changes to the GTRI budget, reorganizing existing programmatic activities under three new control points; HEU Reactor Conversion, International Nuclear and Radiological Material Removal and Protection, and Domestic Nuclear and Radiological Material Removal and Protection. Previously GTRI operated under a single congressional control point and presented its budget request under the three program sub-elements that reflect the programs' internal organization and how it executes its mission; HEU Reactor Conversion, Nuclear and Radiological Material Removal; and Nuclear and Radiological Material Protection. NNSA is proposing to return to the single congressional control in FY 2015. For comparability purposes, FY 2014 information under the Activities and Explanation of Changes sections is presented consistent with the FY 2015 proposal.

Comparability Matrix

Proposed FY 2015 Budget Structure

(Dollars in Thousands)

	Highly Enriched Uranium (HEU) Reactor Conversion	Nuclear and Radiological Material Removal	Nuclear and Radiological Material Protection	Total
Global Threat Reduction Initiative				
Highly Enriched Uranium (HEU) Reactor Conversion	122,383	0	0	**122,383**
International Nuclear and Radiological Material Removal and Protection	0	81,137	51,336	**132,473**
Domestic Radiological Material Removal and Protection	0	20,645	57,987	**78,632**
Total, Global Threat Reduction Initiative	**122,383**	**101,782**	**109,323**	**333,488**

Global Threat Reduction Initiative
Explanation of Major Changes
(Dollars in Thousands)

	FY 2015 vs. FY 2014 Enacted
Global Threat Reduction Initiative	
HEU Reactor Conversion: The major milestone in FY 2015 of the development of a new domestic, non-HEU-based supply of the critical medical isotope molybdenum-99 (Mo-99), which is being executed under multi-year contracts funded in previous fiscal years, is nearing completion. Other planned work is deferred to future years.	**-39,617**
Nuclear and Radiological Material Removal: The President Obama Four Year Initiative to lead an effort to secure the most vulnerable nuclear material by the end of 2013 was successfully completed. Some planned follow-on work is deferred to future years.	**+101,782**
Nuclear and Radiological Material Protection: This reduction in funding is consistent with broader budget austerity goals and prioritization within NNSA, reallocation of prior year balances will prevent any negative schedule impact.	**+109,323**
International Nuclear and Radiological Material Removal and Protection: The International Material Protection activities moved to Nuclear and Radiological Material Protection. All other activities moved to Nuclear and Radiological Material Removal.	**-200,102**
Domestic Radiological Material Removal and Protection: The Domestic Material Protection activities moved to Nuclear and Radiological Material Protection. The Domestic Radiological Material Protection activities moved to Nuclear and Radiological Material Removal.	**-80,000**
Total, Global Threat Reduction Initiative	**-108,614**

Global Threat Reduction Initiative
HEU Reactor Conversion

Description
The GTRI's Convert subprogram supports the conversion of domestic and international civilian research reactors and isotope production facilities from HEU to LEU. These efforts result in permanent threat reduction by minimizing and, to the extent possible, eliminating use of HEU in civilian applications. This includes working with molybdenum-99 (Mo-99) producers to convert their existing operations to use LEU targets and developing new non-HEU-based Mo-99 production capabilities in the United States.

HEU Reactor Conversion

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs. FY 2014 Enacted
HEU Reactor Conversion		
• Convert, or verify as shutdown, an additional 4 reactors, for a cumulative total of 92. • Provide technical and financial support to the U.S. private sector to accelerate the establishment of a reliable domestic production capability for the critical medical isotope Mo-99 without the use of HEU and to existing Mo-99 producers to convert from the use of HEU targets to LEU targets. • Provide technical and financial support to design, test, and qualify the new high-density LEU fuel needed to convert 27 high performance research reactors that cannot convert with existing LEU.	• Convert an additional 4 reactors in FY 2015 for a total of 96 including the first Chinese-origin Miniature Neutron Source Reactor (MNSR) from HEU to LEU fuel, allowing for future conversions in six, high-priority foreign countries. • Establish the first domestic source of non-HEU produced Mo-99. • Provide technical and financial support to the U.S. private sector to accelerate the establishment of a reliable domestic production capability for the critical medical isotope Mo-99 without the use of HEU and to existing global Mo-99 producers to convert from the use of HEU targets to LEU targets. **FY 2016-FY 2019** • Complete conversion of an additional 23 research reactors and isotope production facilities for a total of 119 by the end of FY 2019, subject to increased cost-sharing from international partners. • Establish additional domestic non-HEU based Mo-99 production. • Convert to LEU targets or verify the shutdown of existing Mo-99 isotope production facilities by the end of 2016 in four countries.	• The reduction in the FY 2015 request reflects the establishment of the first domestic source of non-HEU produced Mo-99. • Other planned work is deferred to future years.

Global Threat Reduction Initiative
Nuclear and Radiological Material Removal

Description
GTRI's Remove subprogram supports the removal and disposal of excess nuclear and radiological material from civilian sites worldwide. The Remove subprogram meets the GTRI mission because each kilogram or curie of this dangerous material that is removed reduces the risk of a terrorist acquiring the material for use in a nuclear weapon or radiological dispersal device or “dirty bomb.”

Nuclear Material Removal
This activity supports the removal and disposal of U.S.-origin HEU and LEU, Russian-origin HEU, and other high-risk nuclear materials. In addition to U.S.-origin HEU, GTRI will continue to support the removal of U.S.-origin LEU from TRIGA and MTR research reactors to the United States until FY 2019 as an incentive for reactor conversions. GTRI will also continue to remove Russian-origin HEU from third countries. Finally, GTRI will support removal and disposal of vulnerable, high-risk nuclear materials that are not covered by the Russian-origin and U.S.-origin Nuclear Material Remove activities. This includes U.S.-origin HEU other than TRIGA and MTR fuel, HEU of non-U.S. and non-Russian-origin, and separated plutonium.

Emerging Threats Nuclear Material Removal
This activity develops the capability to rapidly denuclearize a country, ensuring that when opportunities present themselves, such as Libya in 2004, the United States is able to respond quickly. This includes in-country stabilization, packaging, and removal of nuclear materials (focusing on HEU and plutonium) through the deployment of self-sufficient, trained rapid response teams and mobile facilities.

International Radiological Material Removal
This activity supports the removal and disposal of excess or abandoned radiological materials in other countries. This includes Russian radioisotope thermoelectric generators (RTGs), U.S.-origin sealed sources in other countries, and other orphaned radiological materials.

Domestic Radiological Material Removal
This effort supports the rapid removal and disposal of domestic radiological materials by working in close cooperation with Federal, State, and local agencies, and private industry to recover and permanently dispose of excess radiological sources in the United States.

Nuclear Material Removal

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs. FY 2014 Enacted
Nuclear Material Removal		
• Return to Russia and dispose of an additional 57 kilograms of Russian-origin HEU from facilities located in Belarus and Hungary for a cumulative total of 2,065 kilograms; enough material for over 80 nuclear bombs. Funds will also be used for preparatory activities for removals planned for 2015. • Return to the United States an additional 77 kilograms of U.S. Origin HEU from Japan and Canada, resulting in a cumulative total of 1,341 kilograms of HEU removed enough material for over 50 nuclear bombs. • Continue to remove or facilitate the disposition of an additional 431 kilograms of Gap HEU and plutonium, for a cumulative total of 994 kilograms; enough for over 35 nuclear bombs.	• Remove and/or confirm the disposition of an additional 125 kilograms of HEU and plutonium from countries such as Argentina, Kazakhstan, Italy, Belarus and Canada, for a cumulative total of 5,332 kilograms. **FY 2016-FY 2019** • By the end of FY 2019, remove or confirm disposition of 810 additional kilograms of vulnerable nuclear material for a cumulative total of 6,142. This includes material from Poland, Switzerland, Canada, Japan, France, Ghana, South Africa, Kazakhstan, and Germany through various cost-sharing arrangements.	• This reduction is due to the acceleration of shipments under the Four Year Effort, successfully completed in December 2013, with more than 5,100 kilograms removed and/or disposed. • Some planned follow-on work is deferred to future years.
Emerging Threats Nuclear Material Removal		
• Conduct a mock deployment and ensure a short-term readiness posture to deploy assets rapidly to assist in recovery of nuclear materials by conducting preventative equipment maintenance, conducting limited scope performance tests, and replacing equipment to maintain state-of-the-art technical capability.	• Ensure a short-term readiness posture to deploy assets rapidly to assist in recovery of nuclear materials by conducting preventative equipment maintenance, conducting limited scope performance tests, and replacing equipment to maintain state-of-the-art technical capability. **FY 2016-FY 2019** • Conduct mock deployments in FY 2018. • Ensure a short-term readiness posture to deploy assets rapidly to assist in recovery of nuclear materials by conducting preventative equipment maintenance, conducting limited scope performance tests, and replacing equipment to maintain state-of-the-art technical capability.	• The reduction in the FY 2015 request is due to the completion of the mock mission in FY 2014. Funding in FY 2015 will be used to adjust capabilities as necessary reflecting lessons learned from the mock deployment and to maintain the facilities and train the staff.

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs. FY 2014 Enacted
International Radiological Material Removal		
• Funds will be used to recover and dispose of orphaned radiological sources in other countries. • Complete the removal of an additional 22 RTGs (14 by GTRI and 8 by Russia), resulting in a cumulative total of 801 of 820 RTGs removed by GTRI and its international partners.	• Funds will be used to recover and dispose of orphaned radiological sources in other countries. **FY 2016-FY2019** • Funds will also be used to recover and dispose of orphaned high priority radiological sources in other countries. • By the end of FY 2016, GTRI and Russia will complete the removal of the remaining 19 RTGs resulting in all 820 RTGs removed.	• Some removals have been deferred to future years.
Domestic Radiological Material Removal		
• Remove an additional 1,800 excess and unwanted sealed sources from locations in the United States, resulting in a cumulative total of over 34,900 sources removed.	• Remove an additional 2,000 excess and unwanted sealed sources from locations in the United States, resulting in a cumulative total of more than 37,000 sources removed. • Manufacture and further develop additional Type B transport packages to reduce costs and shorten schedule for recovery of highest-activity disused sources. • Continue efforts to work with States and the NRC to transfer long-term recovery and disposal costs from tax -payer to licensees. **FY 2016-FY2019** • Remove an additional 7,500 excess and unwanted sealed sources from locations in the United States, resulting in a cumulative total of more than 45,000 sources removed.	• Includes a minor increase in funding, and continues to reflect the sustained effort to transfer the long-term disposal cost to licensees.

Global Threat Reduction Initiative
Nuclear and Radiological Material Protection

Description
GTRI's Protect subprogram supports the securing of high-priority nuclear and radiological material worldwide from theft. These efforts result in threat reduction by enhancing protection of in-use HEU and high-activity radiological sealed sources located at soft target sites (e.g. hospitals, universities, etc.) that could be used in an improvised nuclear device or a radiological dispersal device, or so-called dirty bomb. The Nuclear and Radiological Material Protection subprogram is vital to GTRI's mission because it upgrades security until a permanent threat reduction solution can be implemented.

<u>International Material Protection</u>
This activity works in cooperation with foreign counterparts and international agencies to install security upgrades on high-priority, vulnerable nuclear and radiological materials located at civilian sites outside the United States.

<u>Domestic Material Protection</u>
This activity works in close cooperation with Federal, State, and local agencies, and private industry to install security upgrades on high-priority nuclear and radiological materials located at civilian sites in the United States to prevent theft. GTRI's protect efforts are a critical interim step towards permanent threat reduction solutions including deploying source tracking tools and further develop and application of now nascent technologies that do not rely on radiological sources.

Nuclear and Radiological Material Protection

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs. FY 2014 Enacted
International Material Protection		
• Complete security upgrades at an additional 50 research reactor and radiological buildings, resulting in a cumulative total of 1,115 international buildings secured. • Work with the IAEA, foreign regulators, and sites to support the sustainability of previously installed security upgrades at 1,017 buildings.	• Complete security upgrades at an additional 52 research reactor and radiological buildings, resulting in a cumulative total of 1,167 international buildings secured. • Work with the IAEA, foreign regulators, and sites to support the sustainability of previously installed security upgrades. • Implement, more broadly, best practices from the two pilot Radiological Security Zones (Mexico City and Peru). **FY 2016-FY 2019** • Complete security upgrades at an additional 232 research reactor and radiological buildings, resulting in a cumulative total of 1,367 international buildings secured. • Work with the IAEA, foreign regulators, and sites to support the sustainability of previously installed security upgrades.	• Reductions largely offset by reallocation of prior year funding.
Domestic Material Protection		
• Complete security upgrades at an additional 54 research reactor and radiological buildings, resulting in a cumulative total of 670 domestic buildings secured. • Work with Federal, State, and local authorities and the sites to support the sustainability of previously installed security upgrades at 586 buildings.	• Complete security upgrades at an additional 53 research reactor and radiological buildings, resulting in a cumulative total of 723 domestic buildings secured. • Work with Federal, State, and local authorities and the sites to support the sustainability of previously installed security upgrades. • Expand outreach to increase threat awareness and accelerate efforts to protect highest priority radiological sites; including in DHS Urban Area Security Initiative-designated cities. • Expand efforts to find better long-term threat reduction solutions; including deploying source	• Reductions largely offset by reallocation of prior year funding.

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs. FY 2014 Enacted
	tracking tools and further develop and application of now nascent technologies that do not rely on radiological sources. **FY 2016-FY 2019** • Complete security upgrades at an additional 373 research reactor and radiological buildings, resulting in a cumulative total of 1,128 domestic buildings secured. • Work with Federal, State, and local authorities and the sites to support the sustainability of previously installed security upgrades. • Continue outreach to increase threat awareness and accelerate efforts to protect highest priority radiological. • Expand efforts to find better long-term threat reduction solutions; including deploying source tracking tools and further develop and application of now nascent technologies that do not relay on radiological sources.	

Global Threat Reduction Initiative Performance Measures

In accordance with the GPRA Modernization Act of 2010, the Department sets targets for, and tracks progress toward, achieving performance goals for each program. For more information, refer to the Department's FY 2013 Annual Performance Report.

	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Highly Enriched Uranium (HEU) Reactors Converted or Shutdown - Cumulative number of HEU reactors and isotope production facilities converted or verified as shutdown prior to conversion.							
Target	88 facilities	92 facilities	96 facilities	100 facilities	105 facilities	112 facilities	119 facilities
Result	**Met** - 88						
Endpoint Target	By 2035, convert or verify the shutdown prior to conversion of approximately 200 HEU reactors and isotope production facilities. The cost assumptions, schedules, scope, and available annual appropriations for GTRI's conversion efforts beyond the FYNSP are uncertain enough to make any exact end date highly subject to change in either direction.						
Nuclear Material Removed – Cumulative number of kilograms of vulnerable nuclear material (HEU and plutonium) removed or disposed.							
Target	3,835 kilograms	5,207 kilograms	5,332 kilograms	5,593 kilograms	5,685 kilograms	5,840 kilograms	6,142 kilograms
Result	**Exceeded** - 5,017						
Endpoint Target	By 2022, remove or dispose of 6,300 kilograms of vulnerable nuclear material (HEU and plutonium), enough for more than 250 nuclear bombs. Note: The target for FY 2014 was increased from the target presented in the FY 2014 Congressional Justification because the FY 2013 target was significantly exceeded.						
Nuclear and Radiological Buildings Protected - Cumulative number of buildings with high priority nuclear and radiological materials secured.							
Target	1,603 buildings	1,785 buildings	1,890 buildings	2,010 buildings	2,150 buildings	2,327 buildings	2,495 buildings
Result	**Exceeded** - 1,674						
Endpoint Target	The previous end date of 2044 is now TBD pending a review of GTRI's protect program examining current inventory, scoping, budgeting and project planning processes that will maximize resources and decrease the program's completion timeline. Note: The target for FY 2014 was increased from the target presented in the FY 2014 Congressional Justification because the FY 2013 target was significantly exceeded.						

Global Threat Reduction Initiative
Capital Summary

(Dollars in Thousands)

	Total	Prior Years	FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Current	FY 2015 vs FY 2014
Capital Operating Expenses Summary (including (Major Items of Equipment (MIE)							
Capital Equipment >$500K (including MIE)	40,652	9,873	4,114	4,205	4,205	4,298	+93
Total, Capital Operating Expenses	**40,652**	**9,873**	**4,114**	**4,205**	**4,205**	**4,298**	**+93**
Capital Equipment > $500K (including MIE)							
Total Non-MIE Capital Equipment (>$500K)	40,652	9,873	4,114	4,205	4,205	4,298	+93
Total, Capital Equipment (including MIE)	**40,652**	**9,873**	**4,114**	**4,205**	**4,205**	**4,298**	**+93**
Total, Capital Summary	**40,652**	**9,873**	**4,114**	**4,205**	**4,205**	**4,298**	**+93**

Outyears for Global Threat Reduction Initiative

(Dollars in Thousands)

	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Capital Operating Expenses Summary (including (Major Items of Equipment (MIE)				
Capital Equipment >$500K (including MIE)	4,393	4,490	4,589	4,690
Total, Capital Operating Expenses	**4,393**	**4,490**	**4,589**	**4,690**
Capital Equipment > $500K (including MIE)				
Total Non-MIE Capital Equipment (>$500K)	4,393	4,490	4,589	4,690
Total, Capital Equipment (including MIE)	**4,393**	**4,490**	**4,589**	**4,690**
Total, Capital Summary	**4,393**	**4,490**	**4,589**	**4,690**

Defense Nuclear Nonproliferation Research and Development (DNN R&D)

Overview

The FY 2015 Budget Request supports national security priorities articulated in the National Security Strategy of the United States and the Nuclear Posture Review, which are reflected in the Department of Energy Strategic Plan. These priorities include the efforts to secure or eliminate the world's most vulnerable nuclear weapon materials; disposing of excess nuclear weapon materials in the United States; supporting the development of new technologies for nonproliferation; promoting the secure expansion of nuclear energy; and improving capabilities worldwide to deter and detect the illicit movement of nuclear and radiological materials.

To achieve these national security and organizational strategic objectives, the President requested Fiscal Year (FY) 2015 funding in the Defense Nuclear Nonproliferation appropriation for five DOE/NNSA programs managed by the Office of Defense Nuclear Nonproliferation (DNN). These DNN programs provide the technical leadership to remove and eliminate, or secure and safeguard, the most vulnerable nuclear and radiological materials worldwide; limit or prevent the illegal transfer and illicit trafficking of weapons-usable nuclear and other radiological materials, technology, and expertise; and advance national and international technical capabilities to understand and detect foreign nuclear weapons production and detonation. DOE/NNSA also works to strengthen regulatory, safety, security, and safeguards infrastructure in countries new to nuclear power and provide technical and analytical support, and capability development, for meeting and monitoring compliance with nuclear nonproliferation and arms control treaties.

The Defense Nuclear Nonproliferation Research and Development (DNN R&D) program directly contributes to meeting the DOE strategic goal for “Nuclear Security” and plays a critical role in meeting Strategic Objective 6 to reduce global nuclear security threats by the innovation of unilateral and multi-lateral technical capabilities to detect, identify, and characterize: 1) foreign nuclear weapons programs, 2) illicit diversion of special nuclear materials, and 3) global nuclear detonations.

To meet national and Departmental nuclear security requirements, DNN R&D leverages the unique facilities and scientific skills of the NNSA nuclear security enterprise, other DOE national laboratories, academia, and industry to perform research, conduct technology demonstrations, develop prototypes for integration into operational systems, and develop operational systems.

Highlights of the FY 2015 Budget Request

The DNN R&D program will continue to advance the state of the art in proliferation detection and nuclear detonation detection capabilities. DNN R&D will expand efforts in nonproliferation and foreign weapons program activity monitoring through continued development of a series of national test beds, including capabilities to detect and identify extremely low-yield nuclear detonations with increased confidence. The DNN R&D program will support a broad set of nuclear nonproliferation and security capabilities for special nuclear material (SNM) movement detection and safeguards, threat interdiction, and radiological source replacement. DNN R&D will continue to support a complex multi-discipline and multi-organization warhead measurement campaign with NNSA's Defense Programs that, upon completion, will provide a robust future basis for assessing weapons and material accountability capabilities and defining technical limits and opportunities for end-to-end arms control transparency. DNN R&D program will deliver nuclear detonation detection payloads in accordance with negotiated schedules with the United States Air Force (USAF). It will support the payload-side technical integration, pre-launch and on-orbit testing activities for previously delivered payloads in accordance with host satellite schedules. Finally, DNN R&D will develop treaty monitoring focused payloads and support integration onto its designated satellite and conduct research in seismic, radionuclide, and detonation forensics to support national capability in terrestrial and airborne monitoring and analysis methods.

Major Outyear Priorities and Assumptions

Outyear funding levels for the R&D program total $1,602,190,000 for FY 2016 through FY 2019. This funding will support DNN R&D in advancing the detection capabilities that address current and projected threats to national security posed by the proliferation of nuclear weapons and diversion of special nuclear material. The funding also contributes substantially to the success of international nuclear treaties and agreements, which depend, in part, upon having the technical means and policy context to support negotiations and detect non-compliance. Additionally, approximately one-third of this funding is for production of sensors to support the nation’s operational nuclear detonation detection and reporting infrastructure through joint programs with the DoD. Finally, this request does not contain funding for the Domestic Uranium Enrichment RD&D Project, since this activity was transferred to the Weapons Activities Appropriation in the Energy and Water Development and Related Agencies Appropriation Act, 2014.

Defense Nuclear Nonproliferation Research and Development (DNN R&D)
Funding

(Dollars in Thousands)

	FY 2013 Current [a]	FY 2014 Enacted [a]	FY 2014 Current [b]	FY 2015 Request	FY 2015 vs FY 2014 Enacted
Defense Nuclear Nonproliferation R&D					
Proliferation Detection (PD)	203,038	230,977	264,884	207,617	-23,360
Nuclear Detonation Detection (NDD)	119,203	167,861	203,965	153,191	-14,670
Domestic Uranium Enrichment RD&D	98,268	0	0	0	0
Total, Defense Nuclear Nonproliferation R&D	**420,509**	**398,838**	**468,849**	**360,808**	**-38,030**

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

- FY 2013 Transferred: SBIR: $7,990; STTR: $1,036
- FY 2014 Enacted: SBIR: $5,890; STTR: $842
- FY 2014 Projected: SBIR: $6,975; STTR: $996
- FY 2015 Request: SBIR: $5,496; STTR: $758

Outyears for Defense Nuclear Nonproliferation Research and Development

(Dollars in Thousands)

	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Defense Nuclear Nonproliferation R&D				
Proliferation Detection (PD)	226,362	231,495	236,629	241,763
Nuclear Detonation Detection (NDD)	160,677	164,548	168,421	172,295
Domestic Uranium Enrichment RD&D	0	0	0	0
Total, Defense Nuclear Nonproliferation R&D	**387,039**	**396,043**	**405,050**	**414,058**

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

- FY 2016 Request: SBIR: $6,163; STTR: $924
- FY 2017 Request: SBIR: $6,726; STTR: $946
- FY 2018 Request: SBIR: $6,876; STTR: $967
- FY 2019 Request: SBIR: $7,026; STTR: $988

Defense Nuclear Nonproliferation Research and Development

[a] FY 2013 and FY 2014 execution occurred under the old program name, Nonproliferation and Verification Research and Development.
[b] Reflects a reprogramming of $70,011,054 from FY 2013 International Material Protection and Cooperation funding to Defense Nuclear Nonproliferation R&D in FY 2014 to mitigate adverse impacts under the FY 2013 full year Continuing Resolution (CR).

Explanation of Major Changes
(Dollars in Thousands)

	FY 2015 vs FY 2014 Enacted
Defense Nuclear Nonproliferation Research and Development	
Proliferation Detection (PD): The decrease reflects concluding field experimentation activities in FY 2014 and delaying other activities into FY 2016 to fund higher, emerging DNN R&D priorities in FY 2015. These priorities include sensor integration into the host satellite and the sustainment of the nuclear detonation detection sensor production rate to match the planned DoD satellite launch. Delays to planned PD activities include demonstrating a key milestone of remote monitoring of nuclear reactors and implementing the third and final university consortium in nonproliferation and arms control monitoring.	**-23,360**
Nuclear Detonation Detection: This decrease reflects a return to baseline funding after a one-time Congressional increase in FY 2014 and a reduction in nuclear forensics research supporting the national technical nuclear forensics technology plan.	**-14,670**
Domestic Uranium Enrichment RD&D: No funding requested. Activity transferred to the Weapons Activities Appropriation.	**0**
Total, Defense Nuclear Nonproliferation Research and Development	**-38,030**

Defense Nuclear Nonproliferation Research and Development
Proliferation Detection

Description

The Proliferation Detection (PD) subprogram develops technologies to detect foreign nuclear weapons programs; supports nuclear arms control treaty verification by improving compliance monitoring capabilities, and supports national nuclear security generally, including emergency operations and response, radiological source replacement, and interdiction missions. The PD efforts are aligned along three functional areas: (1) Nuclear Weaponization and Material Production Detection efforts are targeted towards the detection, location, and characterization of foreign nuclear weapons program activities; (2) Nuclear Weapons and Material Security supports the development of nuclear security and nuclear arms control treaty monitoring and verification tools and applications, as well as operational interdiction, radiological source replacement, and nuclear security efforts across NNSA; and (3) Nonproliferation Enabling Capabilities supports a broad R&D base to bring new, cross-cutting technologies to multi-use applications across the NNSA and the interagency community, including a field experiment and demonstration program and a university research program. The field demonstration program spirals research around experimental test bed activities to advance technology in support of the nation's treaty verification and monitoring needs. PD's university program includes directed university research grants and consortia, such as the Nuclear Science and Security Consortium (NSSC), which links universities and DOE national laboratories to address basic research gaps in nuclear nonproliferation and security and treaty compliance monitoring.

FY 2016-FY 2019 Key Milestones

- By October 2016, demonstrate new capabilities for uranium production detection.
- By October 2018, demonstrate new capabilities for detecting weapons production processes.
- By October 2018, demonstrate new capabilities for material security, including warhead monitoring, warhead chain-of-custody, SNM movement detection, and nuclear safeguards.

Proliferation Detection

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Proliferation Detection		
• **Nuclear Weaponization and Material Production Detection** - develop next generation nuclear detection technologies, with focus on advanced technologies and approaches for detecting foreign proliferant activities; conclude first phase of operational testing of expanded sensor development test bed. • **Nuclear Weapons and Material Security** - address problems related to detection, localization, and characterization of SNM; demonstrate next-generation detection capabilities for warhead monitoring, SNM detection, warhead chain-of-custody, safeguards, radiological source replacement, and the illicit diversion of SNM; demonstrate infrastructure backbone and CONOPS for meeting 2016 NNSA Strategic Plan goal to demonstrate warhead monitoring and chain-of-custody capabilities. • **Nonproliferation Enabling Capabilities** - develop and validate cross-cutting models, algorithms, methods, and operational capabilities; support U.S. capabilities to monitor and verify international treaties and cooperative agreements; conclude research at the first source physics experiment test bed and move the test bed to a more complex geology; expand developments in arms control chain-of-custody, test monitoring gas migration physics, and forensics; complete initial long-term planning of R&D spiral for weapons development detection; . support the University Program and the NSSC.	• **Nuclear Weaponization and Material Production Detection** - provide for advanced sensor and algorithm development around operational testing at the sensor development test bed; achieve 2015 goals to demonstrate technologies and methods for plutonium production detection; demonstrate capability to persistently and remotely monitor nuclear material processing facilities. • **Nuclear Weapons and Material Security -** implement and test stand-alone capability and demonstrate feasibility on way to achieving 2016 NNSA Strategic Plan goal to demonstrate the End-to-End campaign's initial warhead monitoring and chain-of-custody capabilities in support of new arms control commitments; demonstrate feasibility on the way to achieving 2016 NNSA Strategic Plan initiative to demonstrate remote monitoring capabilities for reactor operations (work associated with the current NNSA Strategic Plan has slowed to fund higher priorities in FY 2015 which may cause adjustments to performance measure targets in the out-years). • **Nonproliferation Enabling Capabilities -** begin nuclear test monitoring experimentation for seismic source physics in the second of three test beds, each of increasingly complex geologies, as per long-term test plan; ramp up the warhead monitoring and chain-of-custody campaign, as per the 2014 roadmapping documents; support the University Program to address basic gaps in nuclear nonproliferation and treaty compliance monitoring research- fourth year of support for the University of California at Berkeley-led NSSC. Second year of funding for second university	• The decrease reflects concluding field experimentation activities in FY 2014 and delaying other activities into FY 2016 to fund higher, emerging DNN R&D priorities in FY 2015. These priorities include sensor integration into the host satellite and the sustainment of the nuclear detonation detection sensor production rate to match the planned DoD satellite launch. Delays to planned PD activities include demonstrating a key milestone of remote monitoring of nuclear reactors and implementing the third and final university consortium in nonproliferation and arms control monitoring.

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
	Consortium on treaty Verification Technology (CVT). **FY 2016-FY 2019** • **Nuclear Weaponization and Material Production Detection** - develop next generation nuclear detection technologies; provide for advanced sensor and algorithm development around operational testing at the sensor development test bed. • **Nuclear Weapons and Material Security –** demonstrate feasibility in achieving 2016 NNSA Strategic Plan initiative to demonstrate remote monitoring capabilities for reactor operations. Implement and test stand-alone capability and demonstrate feasibility in achieving 2016 NNSA Strategic Plan goal to demonstrate initial warhead monitoring and end-to-end chain-of-custody capabilities in support of new arms control commitments. Demonstrate maturing capability in warhead end-to-end monitoring in 2018. • **Nonproliferation Enabling Capabilities** - develops and validates cross-cutting models, algorithms, methods, and operational capabilities; begin nuclear test monitoring experimentation for seismic source physics in the second and third test beds, of increasingly complex geologies, as per long-term test plan; and ramp up the high explosive testing weaponization detection campaign, as per the 2014 roadmapping documents. Conclude assessment of the university program and the final year under the current cooperative agreement with the University of California at Berkeley-led NSSC and solicit proposals for follow-on consortia, if required.	

Defense Nuclear Nonproliferation Research and Development
Nuclear Detonation Detection

Description

The Nuclear Detonation Detection (NDD) subprogram develops and builds space sensors for the nation's operational nuclear test treaty monitoring and Integrated Threat Warning/Attack Assessment capabilities; conducts R&D to advance analytic forensic capabilities related to nuclear detonations; and produces and updates the regional geophysical datasets and analytical understanding to enable operation of the nation's ground-based nuclear detonation monitoring networks.

FY 2016-FY 2019 Key Milestones

- (September 2016-2019) Maintain the nation's space based global nuclear detonation detection capability by delivering scheduled sensor payloads and supporting payload-side integration, pre-launch and post-launch testing.

Nuclear Detonation Detection

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Nuclear Detonation Detection		
• **Surface, Atmospheric, and Space Detonation Detection (using Satellite-Based systems)** - builds the Global Burst Detector (GBD) and Space and Atmospheric Burst Reporting System (SABRS) payloads for detecting and reporting nuclear detonations. Supports the integration, initialization, and operation of these payloads. Supports the research, development, and engineering efforts to prepare next generation sensors. Anticipates delivery of payloads at a rate in accordance with the delivery schedule negotiated with the USAF, will conduct necessary engineering reviews to support subsequent satellite blocks for GBDs and SABRS payloads. • **Nuclear Forensics Research** - conducts research, technology development, and related science to improve pre- and post-detonation technical nuclear forensic capabilities. Develop and test decision-making tools to aid in nuclear forensics evaluation, collection, and analyses. • **Underground, Underwater, and Atmospheric Detonation Detection (using Ground-Based systems)** - provides research products, with appropriate testing, demonstration, verification, and technical support for use in the U.S. National Data Center and U.S. Atomic Energy Detection System. Integrate products from source physics experiments and other field and laboratory test campaigns into methods to improve event discrimination.	**FY 2016-FY 2019** • **Surface, Atmospheric, and Space Detonation Detection (using Satellite-Based systems)** - Delivers GBD nuclear detonation detection payloads for Global Positioning System (GPS) block III satellites in accordance with the negotiated schedule with USAF. Support payload-side technical integration, pre-launch and on-orbit testing activities for previously delivered payloads. Continues development of treaty monitoring focused payload and supports integration onto its designated satellite. Continues required engineering development work and satellite interface coordination to support payload design update for subsequent satellite blocks for GBDs and treaty monitoring focused payloads. • **Nuclear Forensics Research** - conducts research, technology development, and related science to improve pre- and post-detonation technical nuclear forensic capabilities. Develop and test technical means to assess recent origins of bulk samples of SNM. • **Underground, Underwater, and Atmospheric Detonation Detection (using Ground-Based systems)** - provides research products, with appropriate testing, demonstration, verification, validation, and technical support for use in the U.S. National Data Center and U.S. Atomic Energy Detection System. Continue to integrate products of source physics experiments and other field and laboratory test campaigns into methods to improve event discrimination. Develop analytical improvements that enable sustained level of performance with reduced operator time.	• This decrease reflects a return to baseline funding after a one-time Congressional increase in FY 2014 and a reduction in nuclear forensics research supporting the national technical nuclear forensics technology plan.

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
	• **Surface, Atmospheric, and Space Detonation Detection (using Satellite-Based systems)** - Delivers GBD nuclear detonation detection payloads for Global Positioning System (GPS) block III satellites in accordance with the negotiated schedule with USAF. Support payload-side technical integration, pre-launch and on-orbit testing activities for previously delivered payloads. Continues development of treaty monitoring focused payload and supports integration onto its designated satellite. Continues required engineering development work and satellite interface coordination to support payload design update for subsequent satellite blocks for GBDs and treaty monitoring focused payloads. • **Nuclear Forensics Research** - conducts research, technology development, and related science to improve pre- and post-detonation technical nuclear forensic capabilities. Develop and test technical means to assess recent origins of bulk samples of SNM. • **Underground, Underwater, and Atmospheric Detonation Detection (using Ground-Based systems)** - provides research products, with appropriate testing, demonstration, verification, validation, and technical support for use in the U.S. National Data Center and U.S. Atomic Energy Detection System. Continue to integrate products of source physics experiments and other field and laboratory test campaigns into methods to improve event discrimination. Develop analytical improvements that enable sustained level of performance with reduced operator time.	

Defense Nuclear Nonproliferation Research and Development Performance Measures

In accordance with the GPRA Modernization Act of 2010, the Department sets targets for, and tracks progress toward, achieving performance goals for each program. For more information, refer to the Department's FY 2013 Annual Performance Report.

	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Plutonium Production Detection - Cumulative percentage of progress toward demonstrating the next generation of technologies and methods to detect Plutonium production activities. (Progress is measured against the baseline criteria and milestones published in the "FY 2006 R&D Requirements Document".)							
Target	90% of progress	95% of progress	100% of progress	N/A	N/A	N/A	N/A
Result	**Met** - 90						
Endpoint Target	By the end of FY 2015, demonstrate the next generation of technologies and methods to detect Plutonium production activities.						
Nuclear Detonation Detection - Annual index that summarizes the status of all NNSA nuclear detonation detection R&D deliveries that improve the nation's ability to detect nuclear detonations.							
Target	90% index	90% index	90% index	90% index	90% index	90% index	90% index
Result	**Met** - 90						
Endpoint Target	Annually achieve timely delivery of NNSA nuclear detonation detection products (90% target reflects good on-time delivery. Index considers factors beyond NNSA's control and impact on customer schedules.)						
Uranium-235 Production Detection - Cumulative percentage of progress toward demonstrating the next generation of technologies and methods to detect Uranium-235 Enrichment activities. (Progress is measured against the baseline criteria and milestones published in the "FY 2006 R&D Requirements Document".)							
Target	75% of progress	90% of progress	95% of progress	100% of progress	N/A	N/A	N/A
Result	**Met** - 75						
Endpoint Target	By the end of FY 2016, demonstrate the next generation of technologies and methods to detect Uranium-235 production activities.						
Nuclear Weapons and Material Security - The cumulative percentage of progress towards demonstrating improvements in Special Nuclear Material detection, warhead monitoring, chain-of-custody monitoring, safeguards, and characterization capabilities.							
Target	N/A	20% of progress	50% of progress	70% of progress	90% of progress	100% of progress	N/A
Result	N/A						
Endpoint Target	By the end of FY 2018, achieve 100% cumulative progress toward demonstrating new capabilities for warhead monitoring, warhead chain-of-custody, Special Nuclear Material movement detection, and nuclear safeguards.						
Nuclear Weaponization and Material Production Detection - Cumulative percentage of progress toward demonstrating improvements in detection and characterization capabilities of nuclear weapons production activities.							
Target	N/A	20% of progress	50% of progress	70% of progress	90% of progress	100% of progress	N/A
Result	N/A						
Endpoint Target	By the end of FY 2018, achieve 100% cumulative progress toward demonstrating new capabilities detecting uranium and plutonium						

	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
	production and nuclear weaponization processes.						

Special Nuclear Material Detection - Cumulative percentage of progress toward demonstrating the next generation of technologies and methods to detect Special Nuclear Material movement. (Progress is measured against the baseline criteria and milestones published in the "FY 2006 R&D Requirements Document".)

Target	100% of progress	N/A	N/A	N/A	N/A	N/A	N/A
Result	**Met** - 100						
Endpoint Target	By the end of FY 2013, demonstrate the next generation of technologies and methods to detect Special Nuclear Material movement.						

Defense Nuclear Nonproliferation Research and Development
Capital Summary

(Dollars in Thousands)

	Total	Prior Years	FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Current	FY 2015 vs FY 2014
Capital Operating Expenses Summary (including (Major Items of Equipment (MIE)							
Capital Equipment >$500K (including MIE)	260,420	64,455	26,213	26,790	26,790	27,379	+589
Total, Capital Operating Expenses	**260,420**	**64,455**	**26,213**	**26,790**	**26,790**	**27,379**	**+589**
Capital Equipment > $500K (including MIE)							
Total Non-MIE Capital Equipment (>$500K)	260,420	64,455	26,213	26,790	26,790	27,379	+589
Total, Capital Equipment (including MIE)	**260,420**	**64,455**	**26,213**	**26,790**	**26,790**	**27,379**	**+589**
Total, Capital Summary	**260,420**	**64,455**	**26,213**	**26,790**	**26,790**	**27,379**	**+589**

Outyears for Defense Nuclear Nonproliferation Research and Development

(Dollars in Thousands)

	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Capital Operating Expenses Summary (including (Major Items of Equipment (MIE)				
Capital Equipment >$500K (including MIE)	27,981	28,597	29,226	29,869
Total, Capital Operating Expenses	**27,981**	**28,597**	**29,226**	**29,869**
Capital Equipment > $500K (including MIE)				
Total Non-MIE Capital Equipment (>$500K)	27,981	28,597	29,226	29,869
Total, Capital Equipment (including MIE)	**27,981**	**28,597**	**29,226**	**29,869**
Total, Capital Summary	**27,981**	**28,597**	**29,226**	**29,869**

Nonproliferation and International Security

Overview

The FY 2015 Budget Request supports national security priorities articulated in the National Security Strategy of the United States and the Nuclear Posture Review, which are reflected in the Department of Energy Strategic Plan. These priorities include the efforts to secure or eliminate the world's most vulnerable nuclear weapon materials; dispose of excess nuclear weapon materials in the United States; support the development of new technologies for nonproliferation; promote the secure expansion of nuclear energy; and improve capabilities worldwide to deter and detect the illicit movement of nuclear and radiological materials.

To achieve these national security and organizational strategic objectives, the President requested Fiscal Year (FY) 2015 funding in the Defense Nuclear Nonproliferation appropriation for five DOE/NNSA programs managed by the Office of Defense Nuclear Nonproliferation (DNN). These DNN programs provide the technical leadership to remove and eliminate, or secure and safeguard, the most vulnerable nuclear and radiological materials worldwide; limit or prevent the illegal transfer and illicit trafficking of weapons-usable nuclear and other radiological materials, technology, and expertise; and advance national and international technical capabilities to understand and detect foreign nuclear weapons production and detonation. DOE/NNSA also works to strengthen regulatory, safety, security and safeguards infrastructure in countries new to nuclear power and provide technical and analytical support, and capability development, for meeting and monitoring compliance with nuclear nonproliferation, and arms control treaties.

The Nonproliferation and International Security (NIS) program directly contributes to meeting the DOE strategic goal for "Nuclear Security" and plays a critical role in meeting Strategic Objective 6 to reduce global nuclear security threats. The NIS program supports National Nuclear Security Administration (NNSA) efforts to prevent the proliferation or use of weapons of mass destruction (WMD), including dual-use materials, technology, and expertise, by state and non-state actors. The NIS program focuses on strengthening the nonproliferation regime in order to reduce proliferation and terrorism risks by applying its unique expertise to develop and implement programs and strategies to help strengthen nuclear safeguards and security; control the spread of dual-use WMD material, equipment, technology, and expertise; verify nuclear reductions and compliance with nonproliferation and arms control treaties and agreements; and develop and implement cross-cutting DOE/NNSA nonproliferation and arms control policy. The NIS program pursues these objectives through four subprograms: (1) Nuclear Safeguards and Security; (2) Nuclear Controls; (3) Nuclear Verification; and (4) Nonproliferation Policy.

Highlights of the FY 2015 Budget Request

- Meet ongoing DOE/NNSA statutory and treaty/agreement obligations including: (a) Bilateral physical security assessment visits for U.S.-obligated materials at foreign facilities; (b) Implementation of U.S. safeguards obligations under the U.S. Voluntary Offer Agreement/Additional Protocol; (c) U.S. export control activities (license reviews, 123 Agreements, 810 applications); (d) Provision of safeguards/security training (especially INFCIRC/225/Rev. 5); and (e) Implementation of DOE obligations under the New START Treaty/HEU Purchase Agreement/Plutonium Production Reactor Agreement/Chemical Weapons Convention and Biological and Toxin Weapons Convention.
- Strengthen the U.S. safeguards technology and human capital base to meet projected U.S. and IAEA resource requirements.
- Facilitate the expansion of civil nuclear power while minimizing nonproliferation risks.
- Maintain technical readiness to address nuclear programs of concern.

Major Outyear Priorities and Assumptions

Outyear funding levels for the NIS program total $620,276,000 for FY 2016 through FY 2019. The NIS program will place increasing emphasis on strengthening International Atomic Energy Agency (IAEA) safeguards and the nuclear security regime by revitalizing the U.S. technical and human capital base that supports safeguards, and ensuring the application of safeguards, physical protection and knowledge security norms and best practices internationally. The NIS program funding profile also will provide for export control-related activities that address proliferation by Iran, North Korea, Syria and proliferation networks, strengthen international nonproliferation agreements and standards, and encourage global adherence to and implementation of international nonproliferation requirements. Finally, in collaboration with DNN Research & Development (DNN R&D), the NIS program will support the development and evaluation of negotiating positions and verification technologies for future nuclear reduction treaties and technologies to support U.S. arms control and nonproliferation initiatives , including applied development, testing and evaluation of advanced radiation measurement technologies for application under the New START Treaty, as well as applied development, testing and evaluation of other concept proven technologies for future treaty verification, transparency, and nonproliferation purposes. In the outyears, NIS will continue to place emphasis on integrating and collaborating with DNN R&D to assure the effective implementation of innovative, concept-proven safeguards and verification technologies.

Nonproliferation and International Security
Funding[a]

(Dollars in Thousands)

	FY 2013 Current	FY 2014 Enacted	FY 2014 Current [a]	FY 2015 Request	FY 2015 vs FY 2014 Enacted
Nonproliferation and Inernational Security					
Nuclear Verification					
Warhead Dismantlement and Fissile Materials Transparency	16,105	14,883	15,883	18,000	+3,117
Nuclear Noncompliance Verification	11,299	6,645	7,145	8,978	+2,333
HEU Transparency Implementation	12,852	6,434	6,434	2,226	-4,208
Total, Nuclear Verification	**40,256**	**27,962**	**29,462**	**29,204**	**1,242**
Nuclear Controls					
International Nonproliferation Export Control	11,566	11,960	12,591	13,435	+1,475
Global Initiatives for Proliferation Prevention	8,273	4,021	4,021	0	-4,021
Global Security through Science Partnerships	0	0	0	0	0
Confidence Building Measures (CBM)	2,562	2,392	2,732	0	-2,392
International Nuclear Forensics Cooperation (formerly CBM)	0	0	0	3,536	+3,536
Export Control Review and Compliance	12,795	13,820	13,970	14,706	+886
Weapons of Mass Destruction Interdiction	3,151	3,190	3,190	3,783	+593
Total, Nuclear Controls	**38,347**	**35,383**	**36,504**	**35,460**	**+77**
Nuclear Safeguards and Security					
Safeguards Policy	14,653	14,884	15,109	16,250	+1,366
Safeguards Engagement	16,598	17,542	18,060	18,750	+1,208
Safeguards Technology Development	17,542	17,240	17,640	18,750	+1,510
International Nuclear Security	7,867	8,541	8,941	12,664	+4,123
Total, Nuclear Safeguards and Security	**56,660**	**58,207**	**59,750**	**66,414**	**+8,207**
Nonproliferation Policy					
Global Regimes	2,743	2,818	3,088	3,792	+974
Regional Analysis and Engagement	2,096	1,540	3,469	2,500	+960
Multilateral Supplier Policy	3,004	2,765	3,415	3,989	+1,224
Total, Nonproliferation Policy	**7,843**	**7,123**	**9,972**	**10,281**	**+3,158**
Total, Nonproliferation and International Security	**143,106**	**128,675**	**135,688**	**141,359**	**+12,684**

Outyears for Nonproliferation and International Security

[a] Reflects a reprogramming of $7,012,977 from FY 2013 International Material Protection and Cooperation funding to Nonproliferation and International Security in FY 2014 to mitigate adverse impacts under the FY 2013 full year Continuing Resolution (CR)..

	(Dollars in Thousands)			
	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Nonproliferation and Inernational Security				
Nuclear Verification				
Warhead Dismantlement and Fissile Materials Transparency	19,197	19,101	20,420	20,908
Nuclear Noncompliance Verification	10,076	10,027	10,216	10,427
HEU Transparency Implementation	0	0	0	0
Total, Nuclear Verification	**29,273**	**29,128**	**30,636**	**31,335**
Nuclear Controls				
International Nonproliferation Export Control	13,882	14,257	15,241	15,604
Global Initiatives for Proliferation Prevention	0	0	0	0
Global Security through Science Partnerships	0	0	0	0
Confidence Building Measures (CBM)	0	0	0	0
International Nuclear Forensics Cooperation (formerly CBM)	4,575	4,502	4,761	4,607
Export Control Review and Compliance	15,388	15,605	16,683	17,148
Weapons of Mass Destruction Interdiction	3,864	4,014	4,791	4,894
Total, Nuclear Controls	**37,709**	**38,378**	**41,476**	**42,253**
Nuclear Safeguards and Security				
Safeguards Policy	16,528	17,244	18,434	18,873
Safeguards Engagement	19,056	19,897	21,270	21,776
Safeguards Technology Development	19,056	19,897	21,270	21,776
International Nuclear Security	13,121	13,794	15,497	15,848
Total, Nuclear Safeguards and Security	**67,761**	**70,832**	**76,471**	**78,273**
Nonproliferaiton Policy				
Global Regimes	4,084	4,084	4,502	4,554
Regional Analysis and Engagement	2,777	2,653	2,986	3,054
Multilateral Supplier Policy	4,283	4,266	4,725	4,783
Total, Nonproliferation Policy	**11,144**	**11,003**	**12,213**	**12,391**
Total, Nonproliferation and International Security	**145,887**	**149,341**	**160,796**	**164,252**

Nonproliferation and International Security
Explanation of Major Changes
(Dollars in Thousands)

	FY 2015 vs FY 2014 Enacted
Nonproliferation and International Security	
Nuclear Verification: This increase allows for the continued development, testing, and evaluation of advanced technologies and concepts for warhead and fissile material transparency and verification to support arms control treaties and initiatives, and is offset by a decrease in funding as activities are completed under the 1993 U.S.-Russia HEU Purchase Agreement.	**+1,242**
Nuclear Controls: This increase reflects accelerated U.S. and foreign export control trainings, nuclear forensics cooperation with additional partners, and increased analytical support to interagency interdiction programs.	**+77**
Nuclear Safeguards and Security: This increase allows for the development of a new U.S. Additional Protocol (AP) reporting system, deployment/transfer of safeguards technologies, training of foreign partners on physical protection security recommendations in INFCIRC 225/Rev 5, and introduction of knowledge security best practices.	**+8,207**
Nonproliferation Policy: This increase allows for the implementation of an e-licensing system, and other efficiencies, to make the NIS Part 810 application process ISO 9001 compliant; additional Nuclear Suppliers Group (NSG) work implementing industry self-regulation; and the continuation and expansion of the Regional and Analysis Engagement Track II efforts in India, Pakistan, Myanmar/Burma and China.	**+3,158**
Total, Nonproliferation and International Security	**+12,684**

Nonproliferation and International Security
Nuclear Verification

Description

The Nuclear Verification (NV) subprogram reduces or eliminates proliferation concerns by promoting transparent arms reductions, including through supporting the negotiation and implementation of U.S. nonproliferation and arms control treaties and agreements. The NV subprogram also conducts applied technology development, testing and evaluation of proven technical concepts to ensure the application of required verification technologies and approaches and associated transparency-monitoring tools, as well as to lay the technical foundation for future arms control initiatives. This subprogram consists of three activities: Warhead Dismantlement and Fissile Material Transparency; Nuclear Noncompliance Verification, and Highly Enriched Uranium (HEU) Transparency Implementation.

Nuclear Verification

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Warhead Dismantlement and Fissile Material Transparency		
• Develop advanced technologies and concepts for warhead fissile material transparency and verification, to support the implementation of the New START Treaty and potential future arms control initiatives. • Collaborate with the United Kingdom and possibly other partner countries to develop potential common approaches to verification challenges. • Complete monitoring visits in Russia under the terms of the Plutonium Production Reactor Agreement (PPRA) to ensure the secure storage of Russian plutonium oxide and shutdown Russian plutonium production reactors remain in a non-operational status. • Maintain accreditation of Organization for the Prohibition of Chemical Weapons (OPCW) laboratory at LLNL.	• Develop advanced technologies and concepts for future warhead and fissile material transparency and verification regimes, as well as support the implementation of the New START Treaty and future arms control initiatives. • Collaborate with the United Kingdom under the 1958 Mutual Defense Agreement and other partner countries to develop potential common approaches to challenging verification issues and problems. • Conduct monitoring visits in Russia under the terms of the PPRA to ensure the secure storage of Russian plutonium oxide and shutdown Russian plutonium production reactors remain in a non-operational status. • Continue activities related to nuclear testing limitations, including those required to prepare for the ratification and implementation of the Comprehensive Nuclear-Test-Ban Treaty. • Under the Seismic Cooperation Program, provide capacity-building training in seismology to foreign partner institutions to enhance their abilities to detect and analyze possible nuclear explosions, as well as mitigate geophysical hazards. • Maintain accreditation of OPCW laboratory at LLNL. **FY 2016-FY 2019** • Annually complete monitoring visits in Russia under the terms of the U.S.-Russia Plutonium Production Reactor Agreement (PPRA) to ensure the secure storage of Russian plutonium oxide and shutdown Russian plutonium production	• This increase reflects a faster pace for completion of Future Nuclear Initiative activities including the development of the 3rd Generation Attribute Measurement System (3G-AMS) and the Portal Monitor for Arms Control (PMAC). • Note: In FY 2013, the Seismic Cooperation activity was transitioned to Nuclear Verification from the Confidence Building Measures (CBM) activity under Nuclear Controls in order to enhance operational efficiencies.

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
	reactors remain in a non-operational status. • Annually maintain accreditation of OPCW laboratory at Lawrence Livermore National Laboratory (LLNL) through annual proficiency activities.	
Nuclear Noncompliance Verification		
• Maintain readiness capabilities to verify declarations and denuclearization activities in countries of concern, on short notice. • Address outstanding needs in verification technical capabilities for the uranium and plutonium fuel cycles. • Provide planning and readiness to support verifiable dismantlement of nuclear programs in countries of proliferation concern.	• Maintain short-notice readiness of previously developed technologies and capabilities for verifying declarations and denuclearization activities in countries of concern. • Develop technologies and capabilities to address outstanding needs in verification of uranium and plutonium fuel cycles. • Provide assessments and operations planning to support verifiable dismantlement of nuclear programs in countries of proliferation concern. **FY 2016-FY 2019** • Annually maintain short-notice readiness of previously developed technologies and capabilities for verifying declarations and denuclearization activities in countries of concern.	• This increase supports optimization of technologies and methodologies underlying the U.S. Government's ability to conduct short notice verification of denuclearization activities.
HEU Transparency Implementation		
• Complete all remaining monitoring visits to four Russian HEU processing facilities. • Monitor the conversion of the final quantity of Russian weapons-origin HEU to low enriched uranium (LEU) for a cumulative total of 500 MT downblended and verifiably eliminated.	• Complete all transparency monitoring provisions under the U.S.-Russia HEU Purchase Agreement. • Complete assessments of Russian HEU to LEU processing data. • Continue work on U.S. LEU processing data and forms. • Support Russian monitoring visits to the USEC Paducah facility and four U.S. nuclear fuel fabrication facilities.	• This decrease reflects the orderly shutdown of the HEU Transparency Implementation Program while still supporting remaining Russian monitoring rights.

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
	FY 2016-FY 2019 • Provide U.S. LEU processing data and forms to Russia through CY 2017. • Support Russian monitoring visits to the USEC Paducah facility and four U.S. nuclear fuel	

Nonproliferation and International Security
Nuclear Controls

Description

The Nuclear Controls (NC) subprogram builds global capacity to prevent the spread of dual-use WMD materials, equipment, technology and expertise by: strengthening foreign partner WMD national systems of export control; providing technical and end-user evaluations of dual-use and munitions export license applications; providing technical support to enhance U.S. Government capacity to detect and interdict illicit WMD-related commodity technology transfers to foreign programs of concern; and strengthening foreign partner nuclear forensics analytical capability and best practices to deter illicit trafficking through more effective attribution of material sources. This subprogram consists of the following activities: International Nonproliferation Export Control Program (INECP); International Nuclear Forensics Cooperation Program (a name change from the former Confidence Building Measures activity to reflect the principal focus of this activity on nuclear forensics capability building with foreign partners); Export Control Review and Compliance; and Weapons of Mass Destruction Interdiction. No funding is being requested in FY 2015 for the Global Security through Science Partnerships (GSSP) program consistent with the fact that no funding was provided for this activity in the FY 2014 Consolidated Appropriations Act. NIS will work with its other programs and international partners to incorporate the knowledge security curriculum and approaches developed for GSSP into other existing programs.

Nuclear Controls

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
International Nonproliferation Export Control Program		
• Engage 38-42 foreign partners to strengthen national export control systems and prevent illicit trafficking in WMD commodities through export licensing and enforcement training. • Train U.S. export enforcement officials in partnership with the newly created Export Enforcement Coordination Center (E2C2) established under the President's Export Control Reform Initiative.	• Engage 25-35 foreign partners annually to strengthen national systems of export control and prevent illicit trafficking in WMD commodities through export licensing and enforcement training programs. • Train U.S. export enforcement officials in partnership with the E2C2 established under the Export Control Reform Initiative. **FYF 2016-FY 2019** • Engage 36-39 foreign partners annually to strengthen national export control systems and prevent illicit trafficking in WMD commodities through export licensing and enforcement training programs. • Train U.S. export enforcement officials in partnership with the E2C2 that was established under the Export Control Reform Initiative.	• The increase reflects a greater number of and duration of training programs for high-priority engagements with key foreign partners and the U.S. export enforcement community.
Global Security through Science Partnerships (formerly Global Initiatives for Proliferation Prevention)		
• No appropriation received for GSSP. Funding reflected under GIPP will cover close-out costs.	• No request due to a lack of appropriation in Fiscal Year 2014, the Global Security through Science Partnerships (GSSP) program was not established **FY 2016-FY 2019** • Not applicable.	• This decrease reflects that no funding is requested in FY 2015 for GIPP closeout or GSSP.
Confidence Building Measures/International Nuclear		

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Forensics Cooperation Program		
• Engage 11 partners to strengthen foreign partner core nuclear forensic capabilities. • Support an ongoing seismic monitoring initiative in the Middle East that strengthens International Monitoring System and CTBT implementation capabilities, while fostering data and information sharing.	• Engage 13 partners annually to strengthen foreign partner core nuclear forensic capabilities. • Work with multilateral partners, such as the Global Initiative to Combat Nuclear Terrorism, on key forensics issues. **FY 2016-FY 2019** • Engage 13 partners annually to strengthen foreign partner core nuclear forensic capabilities.	• The increase reflects the engagement of two additional partners in FY 2015 to strengthen nuclear forensics capacities. • Note: Seismic Monitoring activities have been moved to Nuclear Verification to enhance operational efficiencies.
Export Control Review and Compliance		
• Perform approximately 6,000 technical reviews of export licenses for dual-use commodities; provide state-of-the-art technology assessments to the multilateral control regimes; and provide training courses for DOE and USG officials regarding changing export controlled technologies and proliferation concerns.	• Perform approximately 6,000 technical reviews of export licenses for dual-use commodities per year; provide state-of-the-art technology assessments to the multilateral control regimes; and provide training courses for DOE and U.S. Government officials regarding changing export controlled technologies and proliferation concerns. **FY 2016-FY 2019** • Perform approximately 6,000 technical reviews of export licenses for dual-use commodities per year for a cumulative total of 24,000 dual-use commodity license reviews by FY 2019.	• The increase reflects a greater emphasis on implementation of enhanced analytical systems to determine proliferation trends and impacts.
Weapons of Mass Destruction Interdiction		
• Provide approximately 3,000 comprehensive and real-time technical analyses to the U.S. Government's WMD interdiction community; and provide unique analytical products regarding proliferation trends and commodity gaps.	Provide approximately 3,000 comprehensive and real-time technical analyses per year; and provide unique analytical products regarding proliferation trends and commodity gaps through the Interdiction Technical Analysis Group. **FY 2016-FY 2019** • Provide approximately 3,000 comprehensive and real-time technical analyses per year, for a cumulative total of 12,000 interdiction case reviews by FY 2019.	• The slight increase reflects providing additional technical analyses to the U.S. Government interdiction community while producing analytical products reflecting proliferation trends as they arise in interagency working groups, the Proliferation Security Initiative and sanctions/policy construction.

Description

The Nuclear Safeguards and Security (NSS) subprogram strengthens the nuclear nonproliferation and security regimes. NSS manages the Next Generation Safeguards Initiative (NGSI), oversees support for the U.S. Support Program (USSP) to IAEA Safeguards, collaborates with the IAEA and other partners to enhance the application of safeguards and physical protection norms and best practices, assesses the physical protection of U.S.-obligated nuclear material overseas, and oversees implementation of U.S. Additional Protocol (AP) and Voluntary Offer Agreement (VOA) Safeguards activities at DOE sites and facilities.

This subprogram consists of four activities: Safeguards Policy; Safeguards Engagement; Safeguards Technology Development, and International Nuclear Security.

Nuclear Safeguards and Security

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Safeguards Policy		
• Develop concepts and approaches for the application of safeguards at gas centrifuge enrichment plants and demonstrate proof of concept for global monitoring of uranium hexafluoride (UF6) cylinders. • Implement U.S.-IAEA safeguards obligations at all DOE facilities. • Support the IAEA’s transition to the State Level Concept (SLC)-an approach to safeguards implementation that considers a State and its nuclear activities and capabilities as a whole, rather than focusing on a checklist of criteria for specific types of facilities. • Develop the next generation of National Laboratories and IAEA safeguards staff.	• Provide expert support to the U.S. Government and the IAEA for the implementation of the State Level Concept, with a focus on identifying and responding to specific technical, methodological and diplomatic barriers to implementation as they arise. • Prepare for a proof-of-concept demonstration of a global identification and monitoring system of UF6 cylinders; field test and finalize advanced safeguards concepts for GCEPs for transfer to the IAEA; and pursue promising cost-effective safeguards approaches for facilities. • Maintain qualified and knowledgeable safeguards staff at the National Laboratories and IAEA in support of the international safeguards regime, through sustainable academic and technical programs manifested through curriculum development; internships, post-grad and grad fellowships; and short courses on safeguards. • Implement U.S.-IAEA safeguards obligations at DOE facilities (including annual reporting requirements). **FY 2016-FY 2019** • Demonstrate proof-of-concept for global monitoring of UF6 cylinders and field test and finalize advanced safeguards concepts for GCEPs for transfer to the IAEA by 12/2016.	• The increase reflects additional support for the IAEA as it develops and implements the SLC to strengthen international safeguards. • The increase reflects funding for GCEPs safeguards evaluations, cylinder monitoring, and cost-effective safeguards to enable field testing and development of promising approaches. • The increase reflects development of a new U.S. Additional Protocols reporting system to facilitate interagency vetting. This reporting system is a treaty obligation.
Safeguards Engagement		
• Provide customized training to more than 25 countries to ensure effective implementation of Comprehensive Safeguards Agreements and Additional Protocols.	• Provide customized training to more than 25 countries to ensure effective implementation of Comprehensive Safeguards Agreements and Additional Protocols.	• This increase reflects additional engagements with countries implementing Comprehensive Safeguards Agreements and Additional Protocols. • This increase reflects additional coordination with

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
• Conduct more than 15 advanced safeguards technology development and testing activities with advanced fuel cycle states.	• Complete quality assessment, gap analysis, and strengthening of nuclear safeguards engagement curriculum. • Partner with IAEA and advanced nuclear partners to conduct joint nuclear safeguards outreach to existing partner countries and additional "nuclear newcomer" states. • Develop an integrated safeguards concept for electrochemical processing based on R&D conducted with international partners. • Transfer 5 technologies to foreign partners to meet identified safeguards deficiencies. **FY 2016-FY 2019** • Continue development of an integrated safeguards concept for electrochemical processing based on R&D conducted with international partners by FY 2021.	advanced nuclear partners to conduct joint safeguards outreach to existing partner countries and additional "nuclear newcomer" states.
Safeguards Technology Development		
• Manage the U.S. Support Program (USSP) to IAEA Safeguards. • Develop and deploy two new instruments for spent fuel non-destructive assay and other fuel cycle facilities with domestic and foreign partners. • Demonstrate five new technologies designed to enhance in-field detection capabilities of safeguards inspectors, particularly for detection of undeclared activities.	• Manage the U.S. Support Program (USSP) to IAEA Safeguards. • Transfer spent fuel non-destructive assay technologies to foreign partners and deploy new technologies designed to enhance in-field detection of undeclared activities. • Demonstrate and transfer new technologies designed to enhance inspector capabilities in high-priority areas such as in-field detection and gas centrifuge enrichment plant monitoring. • Maintain support for accredited IAEA Network of Analytical Laboratories (NWAL) at U.S. Laboratories. • Support and strengthen the U.S. National Laboratory's infrastructure to provide certified reference materials to address international nuclear safeguards challenges.	• This increase reflects the need to finalize, demonstrate and help partners implement the results of several large, multi-year technology development investments such as spent fuel NDA technologies. • This increase reflects expanded development of technologies to confront practical safeguards and verification challenges.

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
	FY 2016-FY 2019 • By the end of FY 2019, 20 technologies are deployed and used in international regimes and other countries that address an identified safeguards deficiency (5 technologies transferred per fiscal year).	
International Nuclear Security		
• Lead six to eight U.S. Government assessments of the physical protection of U.S.-obligated nuclear materials at foreign facilities, and collaborate with the IAEA and at least 10 partners to enhance the application of physical protection norms and best practices in line with international guidance.	• Lead six to eight U.S. Government assessments of the physical protection of U.S.-obligated nuclear materials at foreign facilities. • Continue ongoing capacity building cooperation currently being implemented in 14 countries and initiate capacity building engagement in 8 additional countries on the new physical protection security recommendations in INFCIRC 225/Rev 5. • Continue to provide policy and technical expertise to the IAEA for the furtherance of international community-related nuclear security initiatives and Nuclear Security Series documents. Provide subject matter experts for IAEA International Physical Protection Advisory Service Missions. • Develop and implement knowledge security culture training to strengthen the implementation of nuclear and knowledge security norms and best practices at the facility level. **FY 2016-FY 2019** • Annually review the physical security of U.S.-obligated nuclear material located at foreign facilities in order to ensure the security of U.S.-obligated material at foreign facilities and reduce the threat of nuclear terrorism, for a cumulative total of 24 bilateral assessments per year by 10/2019.	• The increase reflects additional capacity building engagements in countries to help meet the new physical protection security recommendations in INFCIRC 225/Rev 5. • This increase supports the IAEA's Nuclear Security Fund to advance international nuclear security initiatives, including regional training courses and implementation guides on cyber security, transportation security, theft and sabotage. • This increase supports the implementation of knowledge security culture training as an element of nuclear security training and engagement.

Nonproliferation and International Security
Nonproliferation Policy

Description

The Nonproliferation Policy (NP) subprogram develops and implements DOE/NNSA nonproliferation and arms control policy. It also supports implementation of bilateral and multilateral nonproliferation and international security requirements stemming from national nonproliferation initiatives, agreements, and treaties. Specifically, the NP subprogram develops policy and provides program oversight on nonproliferation and international security issues; supports the development and negotiation of nuclear treaties and agreements; provides DOE/NNSA nonproliferation policy guidance on nuclear fuel cycle issues; and undertakes activities to improve and update multilateral nuclear supplier arrangements and identify supplier vulnerabilities and potential gaps in supplier arrangements. Additionally, the NP subprogram supports a range of Track II engagement work particularly in India and Pakistan. The NP subprogram is responsible for the following elements: Global Regimes, Regional Analysis and Engagements, and Multilateral Supplier Policy.

Nonproliferation Policy

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Global Regimes		
• Provide technical assistance to the negotiation of at least five Section 123 Agreements for Cooperation and their administrative arrangements, and support the development and implementation of a new framework for civil nuclear cooperation as called for by the President to reduce reliance on indigenous development of enrichment and reprocessing efforts by recipient states. • Finalize development of web-based industry application process along with process efficiencies designed to make NIS Part 810 implementation process ISO 9001 compliant, with special emphasis on enhancements to NIS application processing.	• Provide technical assistance to the negotiation of two or three Section 123 Agreements for Cooperation and their administrative arrangements per year; and conclude development of a new international framework for civil nuclear cooperation and proceed to implement such framework in government and with industry. **FY 2016-FY 2019** • Provide technical assistance to two or three Section 123 Agreements for Cooperation and their administrative arrangements per year for a cumulative total of 8-12 agreements by FY 2019.	• The slight increase in funds reflects support for the implementation of a web-based e-licensing system and other process efficiencies designed to improve the Part 810 licensing system.
Regional Analysis and Engagement		
• Conduct Track 1.5 and Track II engagements in priority areas, including the Middle East, South Asia, Northeast Asia, and Southeast Asia, and leverage these efforts to build capacity for greater regional, government-to-government cooperation in arms control, non-proliferation, and disarmament issues.	• Conduct Track 1.5 and Track II engagements in India, Pakistan, China and Burma, and leverage these efforts to build capacity for greater regional, government-to-government cooperation in arms control, non-proliferation, and disarmament issues. • Conduct additional nonproliferation engagement with Burma (3 meetings total). • Broaden Track II engagement with Pakistan on nuclear weapons issues. • Deepen and grow engagement with young S. Asian analysts by hosting 6 additional fellows for training. **FY 2016-FY 2019** • Continue to promote regional stability and	• This increase supports refined and broadened engagement with Burma; broadened engagement with Pakistan; and additional engagements with next generation S. Asian strategic analysts to expand the training available to them in Western nonproliferation norms.

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
	confidence building measures in India, Pakistan, China and Burma with possible expansion to the Middle East. Focus will include Track II engagement as well as growth in use of social media, internet video and "big data" to promote confidence building and nonproliferation themes.	
Multilateral Supplier Policy		
• Launch a fundamental review of the Nuclear Suppliers Group (NSG) control list to ensure it adequately reflects the latest technology developments in the nuclear fuel-cycle and dual-use technology, and support implementation of the concept of industry self-regulation within the NSG Guidelines.	• Work with the 48 governments of the NSG to strengthen controls on nuclear technology transfers, including amending the NSG Guidelines. • Participate in the Technical Expert Group, which will ensure the NSG control lists remain up to date with advancing technologies. • Support implementation of the concept of industry self-regulation within the NSG Guidelines. • Maintain the NISS and the NISS Forum, which will help coordinate work undertaken under the TEG. • Work with members of the Zangger Committee to strengthen controls on nuclear technology transfers. **FY 2016-FY 2019** • In accordance with Nuclear Suppliers Group (NSG) obligations, the United States will perform a comprehensive update the Trigger List and Dual Use Annex Handbooks by December 2015 to conform these resources to the expanded and modified control lists per the NSG Fundamental Review, which resulted in the addition of 54 items to both list in June 2013.	• This slight increase in funds reflects additional work in support of the implementation of industry self-regulation within the NSG Guidelines in FY 2015.

Nonproliferation and International Security Performance Measures

In accordance with the GPRA Modernization Act of 2010, the Department sets targets for, and tracks progress toward, achieving performance goals for each program. For more information, refer to the Department's FY 2013 Annual Performance Report.

	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
International Nonproliferation Export Control Program - Cumulative number of countries where International Nonproliferation Export Control Program (INECP) is engaged that have export control systems that meet critical requirements.							
Target	31 countries	34 countries	35 countries	36 countries	37 countries	38 countries	39 countries
Result	**Met** - 31						
Endpoint Target	By the end of FY 2020, 40 of 45 countries where INECP is engaged have export control systems that meet critical requirements, defined as having: (1) control lists consistent with the WMD regimes; (2) initiated outreach to producers of WMD-related commodities; (3) developed links between technical experts and license reviewers and front-line enforcement officers; and (4) begun customization of educational materials and technical guides.						
Russian Weapons-Usable Highly Enriched Uranium (HEU) - Cumulative metric tons of Russian weapons-usable HEU that U.S. experts have confirmed as permanently eliminated from the Russian stockpile under the HEU Purchase Agreement.							
Target	492 metric tons	500 metric tons	N/A	N/A	N/A	N/A	N/A
Result	**Exceeded**-493	Met - 500					
Endpoint Target	By the end of Q1 FY 2014, 500 metric tons of Russian weapons-usable HEU was confirmed by U.S. experts as permanently eliminated from the Russian stockpile under the HEU Purchase Agreement. This measure has been completed.						
Safeguards Systems - Annual number of safeguards systems deployed and used in international regimes and other countries that address an identified safeguards deficiency.							
Target	5 systems	5 systems	5 systems	N/A	N/A	N/A	N/A
Result	**Met** - 5						
Endpoint Target	By the end of FY 2015, 38 systems are deployed and used in international regimes and other countries that address an identified safeguards deficiency.						
Reduce Nuclear Terrorism Threat - In order to reduce the threat of nuclear terrorism, evaluate the physical security of U.S. obligated nuclear material located at foreign facilities by conducting bilateral physical security assessment reviews designed to evaluate the adequacy of existing security measures and provide recommendations for enhancing security if necessary.							
Target	N/A	6 assessments	6 assessments	6 assessments	6 assessments	6 assessments	6 assessments
Result							
Endpoint Target	Annually review the physical security of U.S.-obligated nuclear material located at foreign facilities in order to reduce the threat of nuclear terrorism.						

Nonproliferation and International Security
Capital Summary

(Dollars in Thousands)

	Total	Prior Years	FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Current	FY 2015 vs FY 2014
Capital Operating Expenses Summary (including (Major Items of Equipment (MIE)							
Capital Equipment >$500K (including MIE)	2,551	1,242	175	179	179	183	+4
Total, Capital Operating Expenses	**2,551**	**1,242**	**175**	**179**	**179**	**183**	**+4**
Capital Equipment > $500K (including MIE)							
Total Non-MIE Capital Equipment (>$500K)	2,551	1,242	175	179	179	183	4
Total, Capital Equipment (including MIE)	**2,551**	**1,242**	**175**	**179**	**179**	**183**	**+4**
Total, Capital Summary	**2,551**	**1,242**	**175**	**179**	**179**	**183**	**+4**

Outyears for Nonproliferation and International Security

(Dollars in Thousands)

	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Capital Operating Expenses Summary (including (Major Items of Equipment (MIE)				
Capital Equipment >$500K (including MIE)	187	191	195	199
Total, Capital Operating Expenses	**187**	**191**	**195**	**199**
Capital Equipment > $500K (including MIE)				
Total Non-MIE Capital Equipment (>$500K)	187	191	195	199
Total, Capital Equipment (including MIE)	**187**	**191**	**195**	**199**
Total, Capital Summary	**187**	**191**	**195**	**199**

International Material Protection and Cooperation (IMPC)

Overview

The FY 2015 Budget Request supports national security priorities articulated in the National Security Strategy of the United States and the Nuclear Posture Review, which are reflected in the Department of Energy Strategic Plan. These priorities include the efforts to secure or eliminate the world's most vulnerable nuclear weapon materials; disposing of excess nuclear weapon materials in the United States; supporting the development of new technologies for nonproliferation; promoting the secure expansion of nuclear energy; and improving capabilities worldwide to deter and detect the illicit movement of nuclear and radiological materials.

To achieve these national security and organizational strategic objectives, the President requested Fiscal Year (FY) 2015 funding in the Defense Nuclear Nonproliferation appropriation for five DOE/NNSA programs managed by the Office of Defense Nuclear Nonproliferation (DNN). These DNN programs provide the technical leadership to remove and eliminate, or secure and safeguard, the most vulnerable nuclear and radiological materials worldwide; limit or prevent the illegal transfer and illicit trafficking of weapons-usable nuclear and other radiological materials, technology, and expertise; and advance national and international technical capabilities to understand and detect foreign nuclear weapons production and detonation. DOE/NNSA also works to strengthen regulatory, safety, security, and safeguards infrastructure in countries new to nuclear power and provide technical and analytical support, and capability development, for meeting and monitoring compliance with nuclear nonproliferation and arms control treaties.

The Office of International Material Protection and Cooperation (IMPC) directly contributes to meeting the DOE strategic goal for “Nuclear Security” and plays a critical role in meeting Strategic Objective 6 to reduce global nuclear security threats. IMPC supports the Secretary’s goal of enhancing nuclear security through defense, nonproliferation, and environmental efforts by working with partner countries to increase the security of vulnerable stockpiles of nuclear weapons and weapons-usable nuclear materials and to improve their ability to deter, detect, and interdict illicit trafficking.

IMPC works with partner countries to improve security at nuclear facilities as a first line of defense under the Material Protection Control and Accounting (MPC&A) Program. MPC&A teams provide physical security system and nuclear material control and accounting upgrades as well as support for training and best practices technical exchanges. To complement efforts to secure materials at their source, IMPC also supports the consolidation of nuclear materials into fewer, more defensible and sustainable locations and supports down-blending non-weapons-origin, highly-enriched uranium (HEU) to low-enriched uranium (LEU).

The Cooperative Threat Reduction (CTR) Umbrella Agreement, which governed bilateral nuclear security cooperation with the Russian Federation, expired on June 17, 2013. It was replaced with the Protocol to the Multilateral Nuclear Environmental Programme in the Russian Federation Framework Agreement (MNEPR) and the Implementing Agreement to the Protocol, both of which were signed on June 14, 2013. The MNEPR Protocol and the Implementing Agreement provide the legal framework that allows important bilateral nuclear security efforts to continue. Increasingly, the Program will transition the costs of implementing and sustaining security improvements to the Russian Federation but, on a case-by-case and cost-share basis, will support modernization of equipment that has reached the end of its effective life as part of the continuing engagement at key sites.

IMPC’s Second Line of Defense (SLD) Program works to strengthen the capacity and commitment of foreign governments to deter, detect, and interdict illicit trafficking of nuclear and other radioactive materials domestically, across international borders, at internal checkpoints, and within the global maritime shipping system. SLD works in partnership with foreign governments to deploy fixed site and mobile radiation detection systems and to provide training, maintenance, and sustainability assistance to support the mission of the global nuclear detection architecture to deter and detect the illicit trafficking of nuclear material.

In the long term, each partner country must be able to sustain its ability to secure, reduce, and interdict nuclear materials. Therefore, IMPC works to improve indigenous nuclear security infrastructure at the site and national level by providing support in areas such as regulations and inspections, training, maintenance, performance testing, life-cycle planning, and nuclear security culture.

Highlights of the FY 2015 Budget Request

In FY 2015, IMPC will complete the consolidation of all category I/II material into a new high security zone at a nuclear material site in Russia; provide a new perimeter at a large bulk processing facility; complete a perimeter upgrade around two guarded areas with 13 buildings that store and process weapons-usable nuclear material in a large bulk processing facility; provide upgrades at three additional buildings in a large bulk processing facility; complete upgrades to closed city perimeter entry points at the two primary weapons design facilities and one bulk processing facility in Russia; provide upgraded command and control radio systems at two Russian sites; support the completion of a cumulative total of 262 MPC&A regulations by Russia and other FSU countries; provide Multiple Integrated Laser Engagement System (MILES)equipment to Atomguard and the MVD-IT to support effective protective force performance testing; and deploy 20 mobile radiation detection systems to five new partner countries and fixed systems to 15 new sites to help counter the threat of illicit trafficking of special nuclear material.

Major Outyear Priorities and Assumptions

Outyear funding levels for the IMPC program total $1,367,509,000 for FY 2016 through FY 2019. IMPC will continue to implement identified actions from the 2010, 2012, and 2014 Nuclear Security Summits and will work with international partners to enhance nuclear security bilaterally and through appropriate multilateral forums, such as the G8 Global Partnership Against the Spread of Weapons and Materials of Mass Destruction. Under the MNEPR Agreement the program will increasingly transition a greater share of bilateral upgrade and sustainability costs to Russia. IMPC will also partner with Russia in third countries (countries outside of Russia and the former Soviet Union) to promote nuclear security. IMPC will continue to solidify nuclear security successes in Russia by working to strengthen nuclear security infrastructure through improvements in regulatory development, inspections and enforcement capabilities, sustainability, secure transportation of nuclear materials, MPC&A training, protective force survivability, and nuclear security culture. In addition, IMPC will support the development of nuclear security centers of excellence in China and India to expand nuclear security best practices training and technical capabilities. SLD will complete identified international nuclear detection fixed deployments, expand mobile detection initiatives and maintain sustainability programs consistent with and supporting the strategies identified in the interagency Global Nuclear Detection Architecture Implementation Plan.

International Material Protection and Cooperation (IMPC)
Funding

(Dollars in Thousands)

	FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Request	FY 2015 vs FY 2014 Enacted
International Material Protection and Cooperation [a]					
Navy Complex [b]	21,796	0	0	0	0
Strategic Rocket Forces/12th Main Directorate [b]	13,753	0	0	0	0
Nuclear Warhead Protection [b]	0	23,173	23,173	0	-23,173
Weapons Material Protection	35,803	36,357	36,357	17,148	-19,209
Civilian Nuclear Sites [c]	107,661	0	0	0	0
Material Consolidation and Conversion [c]	25,065	0	0	0	0
Material Consolidation and Civilian Sites [c]	0	132,299	132,299	138,357	+6,058
National Infrastructure and Sustainability Program	50,698	37,796	37,796	32,306	-5,490
Second Line of Defense	271,961	190,000	190,000	117,656	-72,344
International Contributions [d]	1,188	0	0	0	0
Total, International Material Protection and Cooperation	**527,925**	**419,625**	**419,625**	**305,467**	**-114,158**

[a] This program was formerly known as International Nuclear Materials Protection and Cooperation (INMP&C).
[b] The Navy Complex and Strategic Rocket Forces/12th Main Directorate subprograms, with essentially the same mission, have been merged into a new subprogram titled Nuclear Warhead Protection (NWP).
[c] The Civilian Nuclear Sites and Material Consolidation and Conversion subprograms, which were highly interconnected, have been merged into a new subprogram titled Material Consolidation and Civilian Sites.
[d] The FY 2013 total includes international contributions of $439K from Finland, $300K from South Korea, and $449K from New Zealand.

Outyears for International Material Protection and Cooperation

	(Dollars in Thousands)			
	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
International Material Protection and Cooperation				
Navy Complex	0	0	0	0
Strategic Rocket Forces/12th Main Directorate	0	0	0	0
Nuclear Warhead Protection	0	0	0	0
Weapons Material Protection	18,960	25,506	32,944	30,700
Civilian Nuclear Sites [a]	0	0	0	0
Material Consolidation and Conversion	0	0	0	0
Material Consolidation and Civilian Sites	160,447	152,494	110,056	106,300
National Infrastructure and Sustainability Program	42,102	42,000	41,000	40,000
Second Line of Defense	140,000	140,000	150,000	135,000
Total, International Material Protection and Cooperation	**361,509**	**360,000**	**334,000**	**312,000**

[4] The Civilian Nuclear Sites and Material Consolidation and Conversion subprograms, which were highly interconnected, have been merged into a new subprogram titled Material Consolidation and Civilian Sites.

International Material Protection and Cooperation
Explanation of Major Changes
(Dollars in Thousands)

	FY 2015 vs FY 2014 Enacted
Nuclear Warhead Protection: : This decrease is due to lack of MNEPR coverage for continuation of MPC&A work with the Russian Ministry of Defense.	**-23,173**
Weapons Material Protection: This decrease is due to the end of sustainability funding at two sites which are expected to be supported by the Russian Federation, reduced funding at two additional Russian sites, and the completion of projects in the Former Soviet Union (FSU).	**-19,209**
Material Consolidation and Civilian Sites: This increase is based upon additional support for non-Russia/FSU projects.	**+6,058**
National Infrastructure and Sustainability Program: This decrease is due to a reduction in support for proforce communication equipment at two sites in the Russian Federation.	**-5,490**
Second Line of Defense: The decrease reflects the acceleration of some activities in FY 2014 based on a one-time funding increase as well as the delay of some radiation detection deployments initially planned in FY 2015 into the outyears due to higher funding priorities within NNSA in FY 2015.	**-72,344**
Total, International Material Protection and Cooperation	**-114,158**

International Material Protection and Cooperation
Nuclear Warhead Protection

Description

The Office of Nuclear Warhead Protection (formerly Navy Complex and Strategic Rocket Forces/12th Main Directorate) worked under the CTR Agreement in cooperation with the Russian Federation's Ministry of Defense (MOD). Work with the Russian MOD was not covered by the new MNEPR Protocol, but IMPC will continue to look for opportunities to engage MOD.

Nuclear Warhead Protection

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Nuclear Warhead Protection		
• Continue to provide training and workshops for the systems and procedures previously installed and implemented. • Provide additional upgrade and sustainability initiatives at select Navy and SRF sites. • Continue to provide support for training and maintenance centers to help ensure sustainability of upgrades.	• No funding requested. **FY 2016-FY 2019** • No funding requested.	• The decrease in the total amount of funding in FY 2015 is due to the MNEPR Protocol not including work with Russian MOD as an area of cooperation.

International Material Protection and Cooperation
Weapons Material Protection

Description

The Office of Weapons Material Protection works in cooperation with Russia and other countries to upgrade and sustain nuclear material security at sites with weapons-usable materials. Russian sites include nuclear weapons design facilities, component handling, and material production and reprocessing facilities with many nuclear material storage and handling locations. The basic MPC&A upgrade objective is to employ a cost-effective, graded approach with an initial focus on co-financing security upgrades for highly attractive nuclear material at each site. Follow-on collaboration is focused on improving systems and practices that support sustainability, and identifying gaps in the protection strategy. Weapons Material Protection is also conducting technical exchanges to support continuing improvement and sustainability of MPC&A system effectiveness.

Funding also supports continuing efforts to establish a best practices exchange on nuclear material security topics with India.

FY 2016-FY 2019 Key Milestones

- Complete upgrades at three additional buildings in a large bulk processing facility in Russia.
- Complete guardhouse for guarded area with 15 buildings at a weapons design facility in Russia.
- Complete perimeter around two guarded areas with 13 buildings that store and process weapons-usable nuclear material in a large bulk processing facility in Russia.
- Complete protective forces guard building and central alarm station for two guarded areas with 13 buildings that store and process weapons-usable nuclear material in a large bulk processing facility in Russia.
- Complete vehicle and pedestrian access control point upgrades that encompass several guarded areas in a large bulk processing facility in Russia.
- Complete regional training center in Kazakhstan.

Weapons Material Protection

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Weapons Material Protection		
• Continue to cost-share selective new upgrade initiatives at sites to further risk mitigation, including: (1) nuclear detection on closed city borders; (2) expanded MPC&A upgrades at some buildings to address both outsider and insider threats when additional areas/upgrade options become available; (3) Rosatom protective force training center development, and (4) improvements to site-wide material measurement and accounting practices. • Continue to implement a comprehensive MPC&A sustainability effort at all seven Russian sites to include: (1) efforts to improve MPC&A management infrastructures; (2) training; (3) procedural development and adherence; (4) system maintenance and repair; (5) performance testing; (6) configuration management, and (7) operational cost analysis. • Complete a new perimeter at a guarded area with 17 buildings that have weapons-usable nuclear material at one of the primary weapons design facilities in Russia. • Complete a new perimeter at a large bulk processing facility. • As part of the continuing engagement with key Russian sites, support, on a cost-share basis, the replacement of selected systems at five Russian sites that were upgraded earlier in the cooperation and are now at the end of their operational lifecycles. • Complete a material storage vault in Belarus. • Continue to support MPC&A activities in Kazakhstan and Belarus, as needed. • Continue engagement with India on the nuclear	• Complete comprehensive MPC&A upgrades at additional buildings that store and process weapons-usable nuclear material at a large bulk processing facility. • Finalize contracts (including cost-sharing provisions)on selected new upgrade initiatives at sites to further risk mitigation, including: (1) nuclear detection on closed city borders; (2) expanded MPC&A upgrades at some buildings to address both outsider and insider threats when additional areas/upgrade options become available; (3) human reliability programs, and (4) improvements to site-wide material measurement and accounting practices. Degree of cost-sharing is expected to increase from FY 2015 throughout the outyear period. • Continue to implement a comprehensive MPC&A sustainability effort at five Russian sites at a reduced level, to include: (1) efforts to improve MPC&A management infrastructures; (2) training; (3) procedural development and adherence; (4) system maintenance and repair, and (5) performance testing. • A new perimeter will be completed at a large bulk processing facility. • Fund perimeter around two guarded areas with 13 buildings that store and process weapons-usable nuclear material in a large bulk processing facility. • Fund upgrades at three additional buildings in a large bulk processing facility. • Will complete upgrades to closed city perimeter entry points at the two primary weapons design facilities and one bulk processing facility in Russia.	• Completed sustainability efforts at two sites in the Russian weapons complex previously involved in HEU downblending activities. • Reduced support for replacement or modernization of systems at the end of operational lifecycles at two sites in the Russian weapons complex in order to free up resources for ongoing upgrades work at Russian sites. • Completed upgrades work in Belarus and sustainability activities in Kazakhstan. • Reduced funding for technical exchanges with India in order to free up resources for ongoing upgrades work at Russian sites.

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
security components of its Center of Excellence, including nuclear material security best practice exchanges.	• In maintaining engagement with three key Russian sites, the program will continue to support, on a cost-share basis, the replacement of selected systems that were upgraded earlier in the cooperation and are now at the end of their operational lifecycles. • Continue engagement with India on the nuclear security components of its Center of Excellence, including one nuclear material security best practice exchange. **FY 2016-FY 2019** • Fund new vehicle and pedestrian access control point upgrades that encompass several guarded areas in a large bulk processing facility in Russia. • Complete perimeter around two guarded areas with 13 buildings that store and process weapons-usable nuclear material in a large bulk processing facility in Russia. • Complete upgrades at three additional buildings in a large bulk processing facility in Russia. • Fund new protective forces guard building and central alarm station at two guarded areas with 13 buildings that store and process weapons-usable nuclear material in a large bulk processing facility. • Fund additional radiation portal monitor installations at five Russian sites to improve insider mitigation. • Fund technical exchanges at five Russian sites focusing on improvements to advanced material control and accounting practices, human reliability programs, and performance testing. • Fund training at five Russian sites to improve maintenance of NDA and DA measurement equipment. • As part of the continuing engagement with key Russian sites, support, on a cost-share basis, the	

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
	replacement of selected systems that were upgraded earlier in the cooperation and are now at the end of their operational lifecycles. • Continue engagement with India on the nuclear security components of its Center of Excellence, including nuclear material security best practice exchanges and provision of training equipment.	

International Material Protection and Cooperation
Material Consolidation and Civilian Sites

Description
The Office of Material Consolidation and Civilian Sites (MCCS) promotes the consolidation of nuclear material into fewer locations, supports the conversion of excess Russian HEU (not from weapons) into LEU, and supports a graded strategy for the protection, control, and accounting of proliferation-attractive nuclear material.

MCCS supports the improvement of security at 18 civilian nuclear sites in Russia, supports Nuclear Security Culture enhancement programs in several countries, supports selected MPC&A projects outside of Russia, including Nuclear Security Best Practices support for China. The basic MPC&A upgrade objective is to employ a cost-effective, co-financed, graded approach to security that will upgrade existing systems protecting highly attractive nuclear material at each site. Rapid MPC&A upgrades are installed to mitigate the immediate risk of theft and diversion until long-term, more comprehensive MPC&A upgrades are designed, installed, and placed into operation. Follow-on collaboration is focused on improving systems and practices that support sustainability, and identifying gaps in the protection strategies.

MCCS also reduces the complexity and long-term costs of securing weapons-useable nuclear material in Russia through the Material Consolidation and Conversion (MCC) project, which supports the consolidation of excess material into fewer, more secure locations and the conversion of HEU into LEU. This approach decreases the number of proliferation-attractive targets as well as the long-term equipment and personnel costs associated with securing special nuclear material (SNM.)

FY 2016-FY 2019 Key Milestones
- Convert approximately 1 MT of HEU to LEU per year.
- Conduct two workshops per year in a country outside the FSU and China.
- Conduct six workshops per year in China.

Material Consolidation and Civilian Sites

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Material Consolidation and Civilian Sites		
• Continue cost-sharing of MPC&A upgrades that focus on addressing outsider and insider threats. • Continue to provide sustainability support to civilian nuclear sites with MPC&A upgrades, including support for training, procedures, maintenance, equipment repair, critical spare parts, performance testing, and other activities. • Support MPC&A activities with countries of concern outside Russia. • Continue to enhance nuclear security culture, promoting the importance of personal responsibility for nuclear security by supporting related activities in Russia, the Former Soviet Union, China, and other countries and relevant activities and publications of the International Atomic Energy Agency (IAEA). • Continue U.S. expert technical engagement on the China COE as construction completes and the facility goes into operation. • Complete train-the-trainer activities and transition MPC&A best practices workshops to Chinese taught courses for the COE. • Continue training, technical exchanges, and consultations to improve security at nuclear material locations. • Continue converting attractive SNM to a less proliferation-attractive form (e.g., HEU to LEU) and consolidating material to fewer sites and fewer buildings where possible. Anticipate converting approximately 0.8MT of HEU to LEU.	• Complete U.S. support for a “nuclear island” local zone within a site in Russia to better segregate nuclear workers from the general site population and reduce the insider threat (Dec. 2014). • Complete installation of a physical protection system around a newly consolidated HEU processing building in Russia. • Reduce U.S. support to improve nuclear accounting, control, and measurement processes and procedures at bulk facilities in Russia to mitigate risk from the insider threat; reduction in the FY 2015 request is due to a need to fund higher NNSA priorities. • Continue converting attractive SNM to a less proliferation-attractive form (e.g., HEU to LEU) and consolidating material to fewer sites and fewer buildings where possible. Anticipate converting approximately 1.2MT of HEU to LEU. Reduce support for out-year downblending. • Continue providing sustainability support at a significantly reduced level to civilian nuclear sites with MPC&A upgrades, including support for training, procedures, maintenance, equipment repair, critical spare parts, performance testing, and other activities. • Continue co-financed, targeted MPC&A upgrade projects that focus on addressing outsider and insider threats. Degree of cost-sharing on joint upgrade activities is expected to increase throughout remaining program lifecycle. • Reduce support for enhanced nuclear security culture, promoting the importance of personal responsibility for MPC&A in Russia, the Former Soviet Union, China, and other countries and the	• The overall MCCS increase reflects a significant increase for a high-priority project. • The Russia specific budget reduction reflects significant cuts in planned activities for MPC&A security initiatives inside and outside of Russia.

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
	IAEA; reduction in the FY 2015 request is due to a need to fund higher NNSA priorities. • Significantly increase support for MPC&A in countries of concern outside Russia; increase is due to this activity being a higher NNSA priority. Reduce U.S. expert technical engagement with China on modern nuclear material security methodologies and best practices, in support for the COE, starting in FY 2016 (from 6-8 workshop engagements per year to 1-2). • Reduce number of training, technical exchanges, and consultations to improve security at nuclear material locations; reduction in the FY 2015 request is due to a need to fund higher NNSA priorities.	

International Material Protection and Cooperation
National Infrastructure and Sustainability Program

Description

The Office of National Infrastructure and Sustainability assists Russia and other FSU partner countries in developing and maintaining a nationwide MPC&A infrastructure that improves security practices nationally and supports the sustainability of U.S.-funded security upgrades. Projects include developing and revising MPC&A regulations, developing inspection capabilities, training, education and regional training support, site sustainability planning, secure transportation upgrades, protective force improvements, developing and revising nuclear material measurement methodologies, and maintaining material control and accounting measurement capabilities. These projects develop the necessary MPC&A infrastructure for sustaining long-term MPC&A operations in Russia and the FSU, as well as the conditions under which U.S. technical and financial support can be transitioned to partner countries.

National Infrastructure and Sustainability Program

Activities and Explanation of Changes

<table>
<tr><th>FY 2014 Enacted</th><th>FY 2015 Request</th><th>Explanation of Changes
FY 2015 vs FY 2014 Enacted</th></tr>
<tr><td colspan="3">National Infrastructure and Sustainability Program</td></tr>
<tr><td>• Provide upgraded command and control radio systems at 3 Russian sites. Retrofit tactical radio systems at an additional 3 sites.
• Support retrofit of explosive detectors at 18 Rosatom facilities.
• Initiate a cumulative total of 273 MPC&A regulations for the Russia and FSU countries.
• Support a sustainable and effective measurement-based Material Control and Accountability (MC&A) program through development of measurement methodologies (MM) and reference materials (RMs).
• Complete propagation studies for the command and control radio system at several Rosatom sites, install radio systems at several Rosatom sites, and sustain protective force equipment at 26 Russian sites.
• Provide MILES equipment to two MVD-IT training centers to support effective protective force performance testing.
• Support 50 courses at Russian training facilities on MPC&A and protective force topics with approximately 790 participants.
• Sustain and replace infrastructure equipment and update curriculum at the Interdepartmental Specialized Training Center (physical protection), The Russian Methodological Training Center (material control and accounting) and the Siberian Institute of Advanced Qualification (SIAT).
• Support MPC&A graduate programs at National Research Nuclear University (MEPhI) and Tomsk Polytechnic University (TPU).</td><td>• Provide upgraded command and control radio systems at 2 Russian sites. Retrofit tactical radio systems at an additional site.
• Support completion of a cumulative total of 262 MPC&A regulations for Russia and other FSU countries.
• Rostechnadzor will complete a total of 6 advanced MPC&A inspection exercises with a decreasing number supported each year.
• Support a sustainable and effective measurement-based Material Control and Accountability (MC&A) program though development of MM and RMs.
• Provide MILES equipment to one MVD-IT training center and one Rosatom training center to support effective protective force performance testing.
• Support approximately 60 courses at Russian training facilities on MPC&A and protective force topics.
• Sustain and replace infrastructure equipment and update curriculum at the Interdepartmental Specialized Training Center (PP), The Russian Methodological Training Center (MC&A), and the Siberian Institute of Advanced Qualification (SIAT).

FY 2016-FY 2019
• Provide upgraded command and control radio systems at 3 Russian sites. Retrofit tactical radio systems at an additional 3 sites.
• Complete a cumulative total of 289 MPC&A regulations – or 6-7 annually – for the Russia and FSU countries.
• Support Rostechnadzor's conduct of 6 advanced inspection exercises/workshops each year (total of 24 between FY 2016-FY 2019.)</td><td>• This decrease is driven by a slower pace of radio upgrade implementation at 3 Russian sites in FY 2015 and likely cessation of U.S.-based training of Russian protective force personnel. The reduction in the FY 2015 request is due to a need to fund higher NNSA priorities.</td></tr>
</table>

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
	• Support a sustainable and effective measurement-based Material Control and Accountability (MC&A) program though development of MM and RMs. • Provide MILES equipment to a total of 8 Atomguard and MVD-IT training centers to support effective protective force performance testing. • Support a total of approximately 180 courses at Russian training facilities on MPC&A and protective force topics during FY 2016-FY 2019. • Sustain and replace infrastructure equipment and update curriculum at the Interdepartmental Specialized Training Center (PP), The Russian Methodological Training Center (MC&A), and the Siberian Institute of Advanced Qualification (SIAT). • Support MPC&A graduate degree programs, expected to produce 60 graduates annually, or 240 in total, at National Research Nuclear University (MEPhI) and Tomsk Polytechnic University (TPU).	

International Material Protection and Cooperation
Second Line of Defense

Description

The Second Line of Defense (SLD) program strengthens the capacity and commitment of foreign governments to deter, detect, and interdict illicit trafficking in nuclear and other radioactive materials across and within international borders and through the global maritime shipping system. The SLD Program also provides training in the use of the equipment to appropriate law enforcement officials and initial system sustainability support and maintenance as the host government assumes full operational responsibility for the equipment. Implementation of the SLD Program in any given country is contingent upon the agreement of the government in that country.

The SLD Program, in coordination with inter-agency partners, completed a strategic review and analysis whose conclusions were presented to the Global Nuclear Detection Architecture (GNDA), interagency working group. The GNDA working group included the SLD recommendations in the GNDA Implementation Plan for the layers outside the U.S. The SLD strategic review recommended a plan to address remaining fixed detection gaps, to expand mobile detection, and to continue to emphasize and extend sustainability. It laid out an effective and efficient approach for the appropriate locations for the monitors based on an analysis of threat, terrain and other factors; and a continuing assessment of detector performance and effectiveness, based on the extensive data received by the SLD Program. The review also resulted in the reorganization of SLD Core and Megaports Programs under a joint implementation program and a sustainability effort funded in one SLD subprogram.

	FY 2013	FY 2014	FY 2015	Cumulative through FY 2015
Fixed Site Installations	20	35[a]	15	563
Mobile Installations	16/6 Countries	24[b]/6 countries	20/6 countries	88/29 countries
Indigenous sustainment	107	85	34	465

In FY 2014, SLD will continue installing radiation detection systems at strategic sites while collaborating with partner countries to sustain existing installations. SLD will continue to strengthen the capabilities of deterrence, detection, and interdiction by completing 35 fixed site installations in 8 countries in FY 2014. The fixed site installations have increased from 19 to 35 as part of the accelerated funding in FY 2014. Mobile Detection Systems (MDS) deployments will be increased from 20 to 24 due to accelerated funding in FY 2014. Furthermore, SLD will transition additional sites to indigenous sustainability in 2014, bringing the total to 431. These installations and deployments will further SLD goals to build capacity and commitment.

In FY 2015, installations of fixed sites will reduce from 25 to 15 based on reductions in scope in FY 2015. SLD had planned work in the Middle East and Africa that will not be able to move forward in FY 2015. SLD will transition additional sites to indigenous sustainability in FY 2015, bringing the total to over 460. SLD is expanding its efforts to attract host-country and industry funding of radiation detection systems through donations, cost-sharing approaches, and technical exchanges. Funding for technical expertise related to these installations is included in FY 2015 and outyears.

FY 2016-FY 2019 Key Milestones

- September 2018 - Equip a cumulative total of 622 sites/ports with radiation detection equipment.
- September 2018 - Deploy 148 Mobile Detection Systems to 44 countries.
- September 2018 – Transition a cumulative total of 531 sites/ports to indigenous partner country responsibility.
- September 2019 - Transition an additional 16 sites for a cumulative total of 547 sites/ports to indigenous partner country responsibility.

[a] Fixed site installations have increased from 19 to 35 as part of the accelerated funding in FY 2014.
[b] Mobile Detection Systems (MDS) deployments will be increased from 20 to 24 due to accelerated funding in FY 2014.

Second Line of Defense

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Second Line of Defense		
• Provide 24 additional mobile and man-portable systems for use by law enforcement at internal checkpoints in countries of strategic interest. • Continue providing training in equipment maintenance and alarm response to law enforcement personnel in 23 countries. • Provide fixed radiation detection systems at 35 sites/ports in 8 countries, focusing on key gaps in the global nuclear detection architecture. • Connect sites to national communications systems in 6 countries including the continuation of the communications system in Russia. • Continue outreach to governments and industry to encourage provision of radiation detection equipment at key seaports. • Continue to provide sustainability and transition support in the form of maintenance and/or repair of equipment, training, and/or technical collaboration and support for radiation detection systems at over 200 sites/ports where the systems have been installed but are not yet indigenously sustained. Note: SLD will have begun actively transitioning to partner countries full responsibility for maintenance of and training on installed SLD systems from FY 2014 through FY 2021, with planned completion in 2022 • Support ongoing improvements in radiation detection programs in partner countries, technical collaborations, sharing of lessons learned, and best practices will be provided when appropriate. • Support assurance of continued operation of equipment installed by the U.S. Department of Defense in Uzbekistan through technical	• Provide 20 additional mobile and man-portable systems for use by law enforcement at internal checkpoints in countries of strategic interest. • Continue providing training in equipment maintenance and alarm response to law enforcement personnel in approximately 15 countries. • Complete fixed radiation detection systems at approximately 15 sites/ports in 8 countries, focusing on key gaps in the global nuclear detection architecture. • Connect sites to national communications systems in 3 countries including the completion of the communications system in Russia in FY 2015. • Continue to transition full responsibility for the long term operation (sustainability) of over 200 sites/ports where the systems have been installed but are not yet indigenously sustained. Note: SLD will be actively transitioning to partner countries full responsibility for maintenance of and training on installed SLD systems from FY 2015 through FY 2021, with planned completion in 2022 • Continue outreach to governments and industry to encourage provision of radiation detection equipment at large-container seaports. • Continue to develop potential for other governments to assist USG during times of enhanced steady state operations. • Continue technical collaboration with industry and countries seeking to install their own radiation detection systems. • Support assurance visits to verify continued operation of equipment installed by SLD in 55+ countries, including the equipment installed	• The reduction in the FY 2015 request is due to a need to fund higher NNSA priorities and also reflects a one-time funding increase in FY 2014 for key detection deployments and programs.

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
exchanges after Government of Uzbekistan assumption of maintenance and training activities.	by the U.S. Department of Defense in Uzbekistan. • Fund exercises and workshops, on country and regional levels, to help ensure optimal operation of equipment and improve regional response to trafficking incidents. • Provide technical expertise and support to ongoing indigenous improvements of installed radiation detection programs in partner countries, technical collaborations, sharing of lessons learned, best practices workshops, and exercises. This includes continuing technical analysis of extensive data and information provided to SLD. • Provide limited technical support to over 460 sites/ports already transitioned to partner country responsibility.	

International Material Protection Cooperation Performance Measures

In accordance with the GPRA Modernization Act of 2010, the Department sets targets for, and tracks progress toward, achieving performance goals for each program. For more information, refer to the Department's FY 2013 Annual Performance Report.

	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
MPC&A Upgrades - Buildings - Cumulative number of buildings containing weapons-usable material with completed MPC&A upgrades.							
Target	229 buildings	229 buildings	229 buildings	N/A	N/A	N/A	N/A
Result	**Not Met** - 218						
Endpoint Target	By Q2 of FY 2015, complete MPC&A upgrades on a cumulative total of 229 buildings containing weapon-usable nuclear material.						

Note: IMPC did not achieve the annual target of completing MPC&A upgrades at 229 buildings by the end of FY 2013. Procurement of physical protection equipment for the remaining eight buildings was completed, but Rosatom elected to suspend review of all additional program contracts, including the installation contract for this equipment, pending negotiation and implementation of the June 14, 2013 Multilateral Nuclear Environmental Program (MNEPR) Agreement. Rosatom is also not allowing any U.S. access onsite while implementing arrangements for MNEPR are being approved on the Russian side, thereby preventing the U.S. from validating 60 percent and 100 percent completion of three of the remaining 11 buildings. MNEPR implementation is the highest priority for moving forward with this target.

	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
MPC&A Initiatives - Annual number of total upgrade and sustainability initiatives completed and transitioned to host country.							
Target	N/A	12 initiatives completed	18 initiatives completed	4 initiatives completed	2 initiatives completed	12 initiatives completed	N/A
Result							
Endpoint Target	By the end of FY 2018, complete the sustainability phase of 48 MPC&A initiatives with foreign partners.						

	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Second Line of Defense (SLD) Sites - Cumulative number of Second Line of Defense (SLD) sites with nuclear detection equipment installed.							
Target	513 sites (45 Megaports)	548 sites/ports	563 sites/ports	587 sites/ports	606 sites/ports	622 sites/ports	N/A
Result	**Met** – 513 (45)						
Endpoint Target	By the end of FY 2018, provide radiation detection equipment to approximately 622 cumulative SLD sites.						

Note: The increase in FY 2014 funding for SLD accelerates implementation and results in a target increase from what was presented in the FY 2014 Congressional Justification. The FY 2014 target increases from 538 sites to 548 sites.

Note: The FY 2013 target was decreased from 531 sites (45 Megaports) to 513 sites (45 Megaports) as a result of a strategic review in FY 2013. Previous FY 2013 targets reflected the funding profile for Second Line of Defense prior to the strategic review noted in the FY 2013 Request. The above FY 2013 targets reflect program goals under the new funding profile. The FY 2013 target was changed in accordance with OMB Circular A-11.240.6 and DOE policy. Beginning in FY 2014, the program has begun reporting the cumulative number of SLD sites; Megaports will no longer be reported separately.

	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Second Line of Defense (SLD) Sustainability - Cumulative number of Second Line of Defense (SLD) sites that are being indigenously sustained.							
Target	N/A	431 sites/ports	465 sites/ports	509 sites/ports	515 sites/ports	531 sites/ports	N/A
Result							
Endpoint Target	By the end of FY 2018, transition 531 SLD sites to indigenous sustainment.						
Second Line of Defense (SLD) Mobile Detection System (MDS): Cumulative number of Mobile Detection Systems deployed and (number of new countries hosting the systems).							
Target	N/A	68 MDS (23 countries)	88 MDS (29 countries)	108 MDS (34 countries)	129 MDS (39 countries)	148 MDS (44 countries)	N/A
Result							
Endpoint Target	By the end of FY 2018, deploy 148 Mobile Detection Systems in 44 countries.						

Fissile Materials Disposition

Overview

The FY 2015 Budget Request supports national security priorities articulated in the National Security Strategy of the United States and the Nuclear Posture Review, which are reflected in the Department of Energy Strategic Plan. These priorities include the efforts to secure or eliminate the world's most vulnerable nuclear weapon materials; disposing of excess nuclear weapon materials in the United States; supporting the development of new technologies for nonproliferation; promoting the secure expansion of nuclear energy; and improving capabilities worldwide to deter and detect the illicit movement of nuclear and radiological materials.

To achieve these national security and organizational strategic objectives, the President requested Fiscal Year (FY) 2015 funding in the Defense Nuclear Nonproliferation appropriation for five DOE/NNSA programs managed by the Office of Defense Nuclear Nonproliferation (DNN). These DNN programs provide the technical leadership to remove and eliminate, or secure and safeguard, the most vulnerable nuclear and radiological materials worldwide; limit or prevent the illegal transfer and illicit trafficking of weapons-usable nuclear and other radiological materials, technology, and expertise; and advance national and international technical capabilities to understand and detect foreign nuclear weapons production and detonation. DOE/NNSA also works to strengthen regulatory, safety, security, and safeguards infrastructure in countries new to nuclear power and provide technical and analytical support, and capability development, for meeting and monitoring compliance with nuclear nonproliferation and arms control treaties.

The Fissile Materials Disposition (FMD) program directly contributes to meeting the DOE strategic goal for "Nuclear Security" and plays a critical role in meeting Strategic Objective 6 to reduce global nuclear security threats by eliminating surplus Russian weapon-grade plutonium and surplus U.S. weapon-grade plutonium and highly enriched uranium. The program also plays an important role in the international discussions for developing plutonium management strategies with international partners.

Highlights of the FY 2015 Budget Request

The Administration remains firmly committed to the overarching goals of the plutonium disposition program to: 1) dispose of excess U.S. plutonium; and 2) achieve Russian disposition of equal quantities of plutonium. The Administration recognizes the importance of the U.S.-Russia Plutonium Management and Disposition Agreement (PMDA), whereby each side committed to dispose of at least 34 metric tons of weapon-grade plutonium. However, considering preliminary cost increases and the current budget environment, the Mixed Oxide Fuel Fabrication Facility (MFFF) project will be placed in cold stand-by while we further analyze options to complete the plutonium disposition mission more efficiently.

Major Outyear Priorities and Assumptions

Outyear funding levels for the FMD program total $1,295,339,000 for FY 2016 through FY 2019. The Program plays a key role in supporting the Secretary's goal of enhancing nuclear security through defense, nonproliferation, and environmental efforts by ensuring that surplus fissile materials in the U.S. and Russia are disposed of in accordance with the amended U.S.-Russian PMDA.

Fissile Materials Disposition
Funding

(Dollars in Thousands)

	FY 2013 Current	FY 2014 Enacted	FY 2014 Current [a]	FY 2015 Request	FY 2015 vs FY 2014 Enacted
Fissile Materials Disposition					
U.S. Surplus Fissile Materials Disposition					
Operations and Maintenance (O&M)					
U.S. Plutonium Disposition					
Waste Solidification Building (WSB) Other Project Costs (OPC)	25,798	20,000	20,000	0	-20,000
WSB Operating Expenses (O&M)	7,000	0	0	0	0
MOX Fuel Fabrication Factility (MFFF) OPC	40,000	40,000	40,000	25,000	-15,000
MOX Irradiation, Feedstock, and Transportation (MIFT)	83,757	63,000	63,000	60,000	-3,000
Plutonium Disposition and Infrastructure Program (PDIP) [b]	32,925	34,557	34,557	0	-34,557
Program Management and Integration (PMI) (Formerly PDIP)	0	0	0	0	0
Subtotal, U.S. Plutonium Disposition	**189,480**	**157,557**	**157,557**	**85,000**	**-72,557**
U.S. Uranium Disposition	**23,958**	**25,000**	**25,000**	**25,000**	**0**
Total, Operations and Maintenance	**213,438**	**182,557**	**182,557**	**110,000**	**-72,557**
Construction					
99-D-141-02 Waste Solidification Building (WSB)	48,404	0	0	5,125	+5,125
99-D-143 MOX Fuel Fabrication Factility (MFFF)	400,990	343,500	402,743	196,000	-147,500
Subtotal, Construction	**449,394**	**343,500**	**402,743**	**201,125**	**-142,375**
Total, U.S. Surplus Fissile Materials Disposition	**662,832**	**526,057**	**585,300**	**311,125**	**-214,932**
Russian Surplus Fissile Materials Disposition					
Russian Materials Disposition					
Funds Spent in US	922	0	0	0	0
Funds Spent in Russia	0	0	0	0	0
Subtotal, Russian Materials Disposition	**922**	**0**	**0**	**0**	**0**
Total, Fissile Materials Disposition	**663,754**	**526,057**	**585,300**	**311,125**	**-214,932**

[a] Reflects a reprogramming of $59,242,760 from FY 2013 International Material Protection and Cooperation funding to Fissile Material Disposition in FY 2014.
[b] Plutonium Disposition and Infrastructure Disposition (PDIP) will be renamed beginning in FY 2015 to Program Management and Integration (PMI).

Outyears for Fissile Materials Disposition

(Dollars in Thousands)

	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Fissile Materials Disposition				
U.S. Surplus Fissile Materials Disposition				
Operations and Maintenance (O&M)				
U.S. Plutonium Disposition				
Waste Solidification Building (WSB) Other Project Costs (OPC)	0	0	0	0
WSB Operating Expenses (O&M)	5,000	5,000	5,000	5,000
MOX Fuel Fabrication Factility (MFFF) OPC	25,000	25,000	25,000	25,000
MOX Irradiation, Feedstock, and Transportation (MIFT)	51,187	55,951	60,000	60,000
Plutonium Disposition and Infrastructure Program (PDIP)	0	0	0	0
Program Management and Integration (PMI) (Formerly PDIP)	5,000	8,000	6,717	14,484
Subtotal, U.S. Plutonium Disposition	**86,187**	**93,951**	**96,717**	**104,484**
U.S. Uranium Disposition	**25,000**	**25,000**	**25,000**	**25,000**
Total, Operations and Maintenance	**111,187**	**118,951**	**121,717**	**129,484**
Construction				
99-D-141-02 Waste Solidification Building (WSB)	0	0	0	0
99-D-143 MOX Fuel Fabrication Factility (MFFF)	196,000	196,000	196,000	196,000
Subtotal, Construction	**196,000**	**196,000**	**196,000**	**196,000**
Total, U.S. Surplus Fissile Materials Disposition	**307,187**	**314,951**	**317,717**	**325,484**
Russian Surplus Fissile Materials Disposition				
Russian Materials Disposition				
Funds Spent in US	2,000	2,000	3,000	3,000
Funds Spent in Russia	3,000	3,000	7,000	7,000
Subtotal, Russian Materials Disposition	**5,000**	**5,000**	**10,000**	**10,000**
Total, Fissile Materials Disposition	**312,187**	**319,951**	**327,717**	**335,484**

Fissile Materials Disposition
Explanation of Major Changes
(Dollars in Thousands)

	FY 2015 vs FY 2014 Enacted
Fissile Materials Disposition	
U.S. Surplus Fissile Materials Disposition	
U.S. Plutonium Disposition: The overall decrease is mainly attributed to the slowdown of the plutonium disposition program and placing the MOX Fuel Fabrication Facility (MFFF) project in cold stand-by while the analysis of the plutonium disposition options is completed.	**-72,557**
U.S. Uranium Disposition: No change from FY 2014 to FY 2015.	**0**
Construction: The overall decrease is mainly attributed to placing the MFFF project in cold stand-by while the analysis of the plutonium disposition options is completed.	**-142,375**
Russian Surplus Fissile Materials Disposition: No change from FY 2014 to FY 2015. Activities for this program are continuing to be supported from prior-year uncosted balances	**0**
Total, Fissile Materials Disposition	**-214,932**

Fissile Materials Disposition
U.S. Surplus Fissile Materials Disposition – U.S. Plutonium Disposition

Description
The goal of the U.S. Plutonium Disposition subprogram is to dispose of at least 34 metric tons (MT) of surplus U.S. weapon-grade plutonium in accordance with U.S. policy and the amended U.S. - Russia Plutonium Management and Disposition Agreement (PMDA).

To dispose of U.S. plutonium, the program has been constructing the Mixed Oxide (MOX) Fuel Fabrication Facility (MFFF), which would enable the Department to dispose of weapon-grade plutonium by fabricating it into MOX fuel and irradiating it in commercial nuclear reactors. During FY 2013, the Administration slowed activities associated with the current plutonium disposition strategy while it conducted an analysis of options to complete the mission more efficiently. The Secretary established a Plutonium Disposition Working Group to undertake this options analysis. The working group has been analyzing the current disposition approach of disposing of surplus weapon-grade plutonium as MOX fuel in light water reactors (LWRs), fast reactor options to dispose of weapon-grade plutonium, and non-reactor based options.

Based upon the ongoing analysis, the Department determined that the MOX fuel approach is significantly more expensive than anticipated, even with consideration of potential contract restructuring and other improvements that have been made to the MOX project. Due to these increases, the MOX fuel approach is not viable within available resources. As a result, the MOX project will be placed in cold stand-by while we further study implementation and costs of options to complete the plutonium disposition mission more efficiently. Upon selecting a preferred option, the Department will commission an independent assessment of the option. This independent assessment will be conducted by an organization external to the Department and its laboratories and will include establishment of life cycle costs, schedules, performance and scope of the selected option.

Also in FY 2013, the Office of Program Integration Analysis and Evaluation within Defense Programs performed an independent cost analysis of the MOX facility life cycle operating costs. They completed their review in April 2013. The review concluded that the independent estimate of steady state operation costs for the MOX facility and the contracting partner estimate are close in aggregate. However, the review presented risks and cost drivers that should be monitored during project execution and start-up. These risks could cause the life cycle costs to increase. Other factors identified that could cause increases were maintenance staffing and the fully burdened cost for full time equivalent (FTE) employees. In addition, extending the number of operating years would also increase the life cycle cost.

In FY 2015, activities associated with oxide production at LANL and SRS will continue, though at a reduced rate because plutonium oxide will still be required regardless of the option selected. Other activities will be conducted in support of placing the MOX facility in cold stand-by. The Department will not meet the MOX production objective as defined in P.L. 107-314, Bob Stump National Defense Authorization Act for Fiscal Year 2003, as most recently amended by P.L. 112-239, the National Defense Authorization Act for Fiscal Year 2013, and has suspended any further transfers of defense plutonium and defense plutonium materials to be processed at the MOX facility in the State of South Carolina. The Department will submit a report to Congress on options for removing an amount of defense plutonium or defense plutonium materials from the State of South Carolina equal to the amount of defense plutonium or defense plutonium materials transferred to the State of South Carolina after April 15, 2002.

MOX Irradiation, Feedstock, and Transportation (MIFT)
This activity supports programmatic activities that are not part of the line item construction projects but are necessary to support the overall program to dispose of surplus weapon-grade plutonium as MOX fuel.

MFFF Other Project Costs Activities (OPC)
This activity supports all other costs related to a project that are not included in the total estimated cost (TEC). OPCs include, but are not limited to: research and development; conceptual design and conceptual design report; start-up and commissioning costs; NEPA documentation; project data sheet preparation; siting; and permitting requirements. These costs are part of the approved baseline and the total project cost (TPC) of the project.

MFFF Operating Expenses (O&M)
This activity supports operations such as hot start-up testing and operations of the MFFF. Costs include planning, contractual and project management support for hot start-up testing and operations. No funds are requested for this activity in FY 2015.

Waste Solidification Building (WSB) (OPC)
This activity supports all other costs related to a project that are not included in the total estimated cost (TEC). OPCs include, but are not limited to: research and development; conceptual design and conceptual design report; start-up and commissioning costs; NEPA documentation, project data sheet preparation; siting; and permitting requirements. These costs are part of the approved baseline and the total project cost (TPC) of the project. No funds are requested for this activity in FY 2015.

Waste Solidification Building (WSB) Operating Expenses (O&M)
This activity supports operations such as hot start-up testing and operations of the WSB. Costs include planning, contractual and project management support for hot start-up testing and operations. In addition this activity includes the planning, execution, and maintenance of lay-up activities for WSB once completed. No funds are requested for this activity in FY 2015.

Program Management and Integration (PMI) (Formerly known as Plutonium Disposition and Infrastructure Program (PDIP))
This activity supports the management and integration of the various components of the FMD program such as program execution planning, integrated program scheduling, risk management, and life cycle management. Additional activities include identification and resolution of issues and management of common program elements such as quality assurance, NEPA compliance, and studies or analyses for plutonium disposition; maintenance and operation of infrastructure required by the FMD projects; and a portion of the site landlord services and infrastructure. No funds are requested for this activity in FY 2015.

FY 2016-FY 2019 Key Milestones
U.S. Plutonium Disposition
- Scope and costs will be updated to reflect the decision resulting from the analysis of plutonium disposition options to complete the mission more efficiently.

U.S. Surplus Fissile Materials Disposition – U.S. Plutonium Disposition

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
U.S. Plutonium Disposition		
MOX Irradiation, Feedstock, and Transportation		
• Continue at a reduced rate activities associated with the current plutonium disposition strategy while analyzing alternative options: • **Feedstock**—Funding supports at a reduced rate: (1) continue to disassemble nuclear weapon pits and convert the resulting plutonium metal into an oxide form using the LANL ARIES process, and (2) begin processing of existing plutonium metals and oxides in the H-Canyon and HB Line at Savannah River Site as part of the campaign to process up to 3.7 MT of plutonium material. • **Transportation**—Funding supports the development, certification, procurement, and maintenance of containers to transport surplus plutonium for disposition. Procure containers for shipping surplus plutonium as necessary.	• Continue at a reduced rate to disassemble nuclear weapon pits and convert the resulting plutonium metal into an oxide form using the LANL ARIES process as part of the 2 MT campaign. • Continue processing of existing plutonium metals and oxides in the H-Canyon and HB Line at Savannah River Site as part of the 3.7 MT campaign. • Continue to provide storage, surveillance, and packaging capabilities for surplus pits and plutonium at Pantex. **FY 2016-FY 2019** • Scope and costs will be updated to reflect the decision resulting from the analysis of plutonium disposition options to complete the mission more efficiently	• The overall decrease is mainly due to support the decision of continuing plutonium oxide production at a reduced rate while the Department completes the analysis of the plutonium disposition options.
MFFF Other Project Cost Activities (OPC)		
• Continue construction activities at a reduced rate while analyzing alternative plutonium disposition options. • During the 3rd Qtr of FY 2014, the MFFF will be placed in cold stand-by.	• Continue management oversight and licensing activities in support of maintaining the project in cold stand-by. **FY 2016-FY 2019** • Scope and costs will be updated in the out years to reflect the decision resulting from the analysis of options to complete the mission more efficiently.	• The decrease reflects the decision to place the project in cold stand-by.
Waste Solidification Building (WSB) (OPC)		
• Provide OPC support as needed to support facility construction activities.	• Complete system and component testing; finalize operations, lay-up, and maintenance procedures; and prepare Documented Safety Analysis using	• The decrease reflects the use of uncosted balances while the Department completes the analysis of the plutonium disposition options.

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
	uncosted balances. **FY 2016-FY 2019** • NONE – Project complete in FY 2015.	
Waste Solidification Building (WSB) Operating Expenses (O&M)		
• Continue the following activities at the minimal required level with prior year balances: maintain proper storage requirements for equipment in the process building by operating the main HVAC units; perform preventive maintenance and repair of equipment as needed; and maintain support from external organizations.	• Maintain facility in a lay-up configuration while the Department completes the analysis of the plutonium disposition options. **FY 2016-FY 2019** • Scope and costs will be updated in the out years to reflect the decision resulting from the analysis of options to complete the mission more efficiently.	• No funding change.
Plutonium Disposition and Infrastructure Program/ Program Management and Integration (PMI)		
• Continue, at reduced rate, with activities associated with the current plutonium disposition strategy while analyzing alternative options: • Funding will support the continuation of the studies and analyses required to support the evaluation and selection of an alternative plutonium disposition strategy. Funding will also support the ongoing maintenance of critical programmatic documents including the Program Execution Plan, integrated schedules, performance measures, NEPA documentation, memoranda of agreement, and interface control documents; minimal required infrastructure and erosion control maintenance required to comply with safety and environmental standards; and DNN's portion of the SRS-wide common infrastructure maintenance activities including site roads, bridges, barricades, and utility distribution systems.	• Funding will support the ongoing maintenance of critical programmatic documents including the Program Execution Plan, integrated schedules, performance measures, NEPA documentation, memoranda of agreement, analysis for plutonium disposition, and interface control documents; minimal required infrastructure and erosion control maintenance required to comply with safety and environmental standards; and DNN's portion of the SRS-wide common infrastructure maintenance activities including site roads, bridges, barricades, and utility distribution systems. **FY 2016-FY 2019** • Scope and costs will be updated in the out years to reflect the decision resulting from the analysis of options to complete the mission more efficiently.	• The decrease reflects the use of prior-year carry over balances.

Fissile Materials Disposition
U.S. Uranium Disposition

Description

This funding supports the disposition of surplus U.S. highly enriched uranium (HEU) by down-blending it to low-enriched uranium (LEU). Several disposition activities are on-going and additional projects are being considered as HEU becomes available from planned weapon dismantlements.

Over the past decade, the National Nuclear Security Administration's (NNSA) surplus U.S. HEU disposition program has eliminated more than 143 metric tons of weapons-usable HEU by down-blending it to LEU for use in power and research reactors in the U.S. and abroad. The program has substantially reduced holdings of fissile materials throughout the Department of Energy complex, rid the world of more than 5,500 weapons worth of unneeded bomb material, helped reduce civil use of HEU worldwide, and made a significant contribution to electricity supplies. The program has also been able to off-set appropriations for the program by using bartering to pay for commercial down-blending services, and funds received from the sale of LEU are returned to the U.S. Treasury. The future focus is to continue progress in down-blending HEU to meet nonproliferation objectives, the use of derived LEU in a manner that does not adversely impact the commercial nuclear fuel markets, and the development of future projects from unallocated HEU inventories.

The original 12.1 MT for the MOX Backup LEU Inventory Project was completed in December 2013. In February 2013, an additional 5 MT became available and was added to this project. The 5 MT extension is scheduled to complete in FY 2015. NNSA is pursuing a new offering for down-blending 14 MT of surplus HEU to commence in FY 2015.

FY 2016-FY 2019 Key Milestones

- Continue to down-blend surplus HEU that is currently unallocated in order to meet nonproliferation objectives.

U.S. Uranium Disposition

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
U.S. Uranium Disposition		
• Continue research reactor fuel project and new multi-year disposition project; complete the 12.1MT MOX Backup LEU Inventory Project; and commence the 5 MT of the MOX Backup LEU Inventory Project.	• Continue to down-blend HEU for research reactor needs in support of reactor conversion efforts. • Complete the 5 MT of the MOX Backup LEU Inventory Project. • Support the de-inventory of Area 5 at Y-12, including removal of LWBR fuel rods. • Support production area operations for material processing and packaging of surplus HEU. • Perform services necessary to provide suitable and appropriate certified Type B radioactive material shipping packages for HEU disposition programs. • Prepare unallocated surplus HEU material for future disposition. **FY 2016-FY 2019** • September 2016-2019 - Continue to down-blend surplus HEU in order to meet nonproliferation objectives. • Continue to down-blend surplus HEU that is currently unallocated in order to meet nonproliferation objectives.	• No funding change.

Fissile Materials Disposition
Construction

Description
The program goal is to dispose of surplus Russian weapon-grade plutonium and surplus U.S. weapon-grade plutonium and highly enriched uranium. To dispose of U.S. plutonium, the program has been constructing the Mixed Oxide (MOX) Fuel Fabrication Facility (MFFF), which would enable the Department to dispose of plutonium by fabricating it into MOX fuel and irradiating it in commercial nuclear reactors.

During FY 2013, the Administration slowed activities associated with the current plutonium disposition strategy while it conducted an analysis of options to complete the mission more efficiently. The Secretary established a Plutonium Disposition Working Group in June 2013 to undertake this options analysis. The working group has been analyzing the current disposition approach of disposing of surplus weapon-grade plutonium as MOX fuel in light water reactors (LWRs), fast reactor options to dispose of weapon-grade plutonium, and non-reactor based options.

In the course of this analysis, it was determined that the MOX fuel approach is significantly more expensive than anticipated, even with consideration of potential contract restructuring and other improvements that have been made to the MOX project. In FY 2012, the contracting partner submitted a baseline change proposal (BCP) for the MFFF project that would increase the TPC to $7.7 billion with a completion date of November 2019. An independent cost estimate (ICE) was initiated in September 2012 to validate the BCP submitted by the contracting partner. Because the contracting partner BCP was based on an assumed annual funding profile of approximately $600 million beginning in FY 2014, the ICE was suspended in April 2013. However, the analysis determined that the cost to construct the MFFF would be significantly higher than the BCP and take longer to complete. As a result of the cost increase and the current budget environment, the MOX project will be placed in cold stand-by while we further study implementation and costs of options to complete the plutonium disposition mission more efficiently. Furthermore, the Department will conduct a root cause analysis on the cost increases of the project as directed in P.L. 113-76, Consolidated Appropriations Act 2014.

Due to the magnitude of the changes in the FY 2015 and out year funding profile, a detailed MOX cold stand-by plan will be developed, approved and implemented in accordance with the DOE Project Management and Contract processes. This plan will discuss in more detail the impact of placing the facility in cold stand-by.

The Acquisition Executive approved the WSB BCP in December 2012 with a TPC of $414 million and a completion date of August 2015. The project rebaseline includes NNSA contingency for subcontractor Request for Equitable Adjustments (REA). Subcontractor REA claims are expected to impact project contingency. Although the analysis is not yet complete, sufficient information exists to determine e that the first receipt of liquids from the MFFF will be at least five years after completion of the WSB project. Given this information, a number of activities (primarily associated with operational readiness reviews) were identified that are unnecessary during lay-upin light of the potential length of time until operation as a radiological facility. Consequently, a letter of direction was provided to the WSB contracting partner in December 2013 to modify completion criteria for the project and to place the facility in a lay-up condition following Critical Decision 4 while the Department concludes the analysis of options. This budget requests $5 million in TEC funds but no OPC funds for FY 2015. The contracting partner would conduct system and component testing but would not perform integrated system testing, minimizing the need for additional OPC funds. The largest uncertainty to the final project cost is the resolution of outstanding REA's and associated legal costs.

99-D-141-02, Waste Solidification Building (WSB)
This activity supports the design, long-lead equipment procurement, site preparation, and construction of the WSB.

99-D-143, MOX Fuel Fabrication Facility (MFFF)
This activity supports the design, long-lead equipment procurement, site preparation, and construction of the MFFF.

FY 2016-FY 2019 Key Milestones

U.S. Construction

- Scope and costs will be updated in the out years to reflect the decision resulting from the analysis of the plutonium disposition options to complete the mission more efficiently.

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Construction		
99-D-141-02, Waste Solidification Building (WSB)		
• Complete remaining fixed-price subcontractor construction activities (field work and QA records) with prior year balances.	• Complete remaining turnovers of systems and contract closeout. • Supports the hotel load for the project team and payment of outstanding Request for Equitable Adjustments (REA). (The majority of the M&O work should be charged to OPC in FY 2015. Substantial uncertainty remains regarding the funding amount that will be needed to settle any subcontractor claims). **FY 2016-FY 2019** • NONE – Project completed in FY 2015.	• The increase will support any outstanding REAs.
99-D-143, MOX Fuel Fabrication Facility (MFFF)		
• Continue construction activities at a reduced rate while analyzing alternative plutonium disposition options. • Continue minimal HVAC construction, process piping, fire protection, electrical, coatings, and glovebox and process equipment installation. • During the 3rd Qtr of FY 2014, the MFFF will be placed on cold stand-by.	• Maintain minimal activities while the project is in cold stand-by. **FY 2016-FY 2019** • Scope and costs will be updated in the out years to reflect the decision resulting from the analysis of options to complete the mission more efficiently.	• The decrease reflects the decision to place the project in cold stand-by while the Department completes the ongoing analysis.

Fissile Materials Disposition
Russian Surplus Fissile Materials Disposition

Description

Under the amended U.S.-Russian Plutonium Management and Disposition Agreement (PMDA) each side is committed to dispose of at least 34 MT of surplus weapon-grade plutonium. The PMDA commits the U.S. to provide $400,000,000, subject to the availability of appropriated funds and the U.S. budgetary review process, to assist Russia in its plutonium disposition program. Russia will contribute over $2 billion necessary to complete its program.

The Administration remains firmly committed to the overarching goals of the plutonium disposition program to: 1) dispose of excess U.S. plutonium; and 2) achieve Russian disposition of equal quantities of plutonium. The Administration recognizes the importance of the U.S.-Russia Plutonium Management and Disposition Agreement (PMDA), whereby each side committed to dispose of at least 34 MT of weapon-grade plutonium. The decision to place the MFFF in cold stand-by does not diminish this commitment. The Administration will continue to work with Russia and the IAEA to fulfill our obligations under the PMDA.

Russia has made significant progress towards establishing its plutonium disposition capability based on irradiating MOX fuel in its fast reactors. The construction work at the BN-800 reactor at the Beloyarsk nuclear power plant is completed. Fuel loading began in February and will continue over the next two months. It is the latest step in a sequence that began in December 2013, when the reactor was filled with its sodium coolant and received the necessary permits from the Russian nuclear regulator Rostechnadzor to begin the fuel loading and pre-startup tests. The reactor is expected to reach first criticality in April 2014. In addition Rosatom has established a working group chaired by its lead fuel manufacturing company, TVEL, to manage the design and construction of its MOX Fuel Fabrication Facility at the Mining Chemical Combine (MCC) in Zheleznogorsk. Equipment fabrication and installation work at the MOX facility commenced in 2012 and the facility is scheduled to begin operations in the 2015 timeframe.

In the meantime, NNSA continues to work with Russia to establish a contractual agreement to provide US assistance under the PMDA. In May 2012 Rosatom, the Russian executive agent to the PMDA, provided NNSA with a high-level list of milestones indicating the general areas where it would request U.S. assistance. NNSA and Rosatom have since been refining the list of milestones and exchanging comments on a draft Statement of Work for an initial contract to begin specific Russian work under the PMDA funded with U.S. assistance. Formal negotiations on the initial contract began in November 2013 and in FY 2014, Oak Ridge National Laboratory (ORNL) anticipates completing negotiations and awarding an initial contract with the Russian integrating contractor (VNIIA) using prior year funds. Under the terms of the contract, Russia will be required through its PMDA integrating contractor to develop and complete detailed Russian plutonium disposition program and implementation plans; to negotiate and complete an agreement with the IAEA for a verification regime to provide independent international confirmation that Russia is disposing of its plutonium in accordance with the conditions in the PMDA; to conduct limited research and development of equipment in support of the implementation of the verification regime in Russian, providing such equipment is not already available through the IAEA; and to negotiate and complete a Cooperative Agreement to authorize and fund the remaining Russian work under the U.S. PMDA assistance obligation. Work under this initial contract will be conducted in the FY 2014 - FY 2015 timeframe.

During FY 2015, ORNL, Pacific Northwest National Laboratory (PNNL), and other laboratories and contracting partners will support the implementation of the PMDA by assisting in the oversight of contracts in Russia; verifying completion of contract deliverables in Russia; providing technical and policy analyses; provide technical support for negotiations with the Russians and the IAEA by way of technical analysis of verification and reactor operations issue raise in negotiation with Russian and the IAEA as well as technical support of delegations in meetings with the IAEA and Russia; and completion of a U.S. agreement with the IAEA for a verification regime to provide independent international confirmation that the US is disposing of its plutonium in accordance with the conditions in the PMDA.

In addition, this program will be the focal point within DNN on the development of international plutonium management strategies with countries other than Russia, by developing bi-lateral and multi-lateral working arrangements in which countries work together at a technical level to support efforts to manage plutonium inventories in a way that minimizes the stockpiles of excess plutonium and maximizes the security and protection of the material.

Funds Spent in U.S.
This activity supports the U.S. technical and oversight support of PMDA implementation in Russia and other objectives for the International Program.

Funds Spent Internationally
This activity supports international technical and oversight support of PMDA implementation in Russia and other objectives for the International Program.

FY 2016-FY 2019 Key Milestones
Funds Spent in U.S.
- Verify completion of deliverables required by U.S.-Russian contracts, as necessary.

Funds Spent Internationally
- Sign a Cooperative Agreement between NNSA and the Russian integrating contractor to summarize remaining work to be accomplished with U.S. PMDA assistance and authorize work in the 2017 – 2019 timeframe.

Russian Surplus Fissile Materials Disposition

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Russian Surplus Fissile Materials Disposition		
Funds Spent in U.S.		
• Uncosted balances will support the management of Russian contracts and provide technical oversight for planning and execution of the Russian plutonium disposition program.	• Uncosted balances will support the management of Russian contracts; provide technical oversight for planning and execution of the Russian plutonium disposition program, and implementing plutonium management strategies with international partners. **FY 2016-FY 2019** • September 2016-2019 - Verify completion of deliverables required by U.S.-Russian contracts, as necessary.	• No Funding Change.
Russian Surplus Fissile Materials Disposition		
Funds Spent in Russia		
• Uncosted balances will support plutonium disposition implementation efforts in Russia funded from prior year funds as part of the $400 million in U.S. assistance under the PMDA.	• Uncosted balances will support plutonium disposition implementation efforts in Russia funded from prior year funds as part of the $400 million in U.S. assistance under the PMDA. **FY 2016-FY 2019** • September 2016 - Sign a Cooperative Agreement between NNSA and the Russian integrating contractor to summarize remaining work to be accomplished with U.S. PMDA assistance and authorize work in the 2017 – 2019 timeframe.	• No Funding Change.

Fissile Materials Disposition Performance Measures

In accordance with the GPRA Modernization Act of 2010, the Department sets targets for, and tracks progress toward, achieving performance goals for each program. For more information, refer to the Department's FY 2013 Annual Performance Report.

	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Mixed Oxide (MOX) Fuel Fabrication Facility - Cumulative percentage of the design, construction, and cold start-up activities completed for the Mixed Oxide (MOX) Fuel Fabrication Facility.							
Target	81% completed	TBD	TBD	TBD	TBD	TBD	TBD
Result	**Not Met** - 60						
Endpoint Target	TBD						

Note: The FY 2013 result of 60% is based on the current approved baseline, which is no longer valid, with a TPC of $4.8 billion and a completion date of October 2016. Due to preliminary cost increases and the current budget environment, the MFFF project will be placed in cold stand-by in FY 2014 while the Department completes the ongoing analysis. Performance measure targets will be adjusted to reflect the decision of the path forward for plutonium disposition.

	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
U.S. Highly Enriched Uranium (HEU) Down-blended - Cumulative amount of surplus U.S. highly enriched uranium (HEU) down-blended or shipped for down-blending.							
Target	143 MT	146 MT	148 MT	150 MT	152 MT	154 MT	156 MT
Result	**Exceeded** – 143.8						

Endpoint Target: By the end of FY 2030, complete disposition of 186 MT of surplus HEU. The overall amount of HEU available for down-blending and the rate at which it will be down-blended is dependent upon decisions regarding the U.S. nuclear weapons stockpile, the pace of warhead dismantlement and receipt of HEU from research reactors, as well as other considerations, such as decisions on processing of additional HEU through H-Canyon, disposition paths for weapons containing HEU, etc.

Note: FY 2013 – FY 2018 annual targets were revised in FY 2012. The change in the target reflects the significant rise in productivity under the TVA BLEU, AFS and MOX/LEU inventory projects. The increase was factored into current and future years to maintain the integrity of the target performance measurement. Additional material was identified and added to the total amount of HEU to be dispositioned. The previous end point date of 2040 for HEU disposition has been adjusted to 2030 to reflect a more accurate representation of completion. The previous end point was based on a preliminary understanding of dismantlement and down-blending schedules. Since then, FMD has confirmed that HEU will be down-blended at a rate of 2-3 MT/year, resulting in an end point date of approximately 2030 to complete the down-blending of 186 MT of HEU.

U.S. Plutonium Disposition (LANL) - Cumulative kilograms of plutonium metal converted to oxide at Los Alamos National Laboratory.

	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Target	592 kg	692 kg	792 kg	892 kg	992 kg	1,092 kg	1,192 kg
Result	**Met** - 592						
Endpoint Target	TBD						

Note: NNSA changed the 2013 target presented in the FY 2014 Budget Request from 675 kg to 592 kg. Due to preliminary cost increases and the current budget environment, the Administration is continuing an ongoing analysis to determine whether there are options to complete the mission more efficiently. As a result all activities associated with the current strategy will continue at a reduced rate while the Department completes the ongoing analysis. Performance measure targets will be adjusted to reflect the decision of the path forward for plutonium disposition.

U.S. Plutonium Disposition (H-Canyon) - Cumulative kilograms of plutonium converted to oxide at SR H-Canyon.

	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Target	N/A	180 kg	1,145 kg	2,145 kg	3,145 kg	3,700 kg	N/A
Result							
Endpoint Target	By the end of FY 2018, complete operations for 3.7 MT of plutonium converted to oxide at Savannah River Site.						

WSB - Cumulative percentage of the design, construction, and cold start-up activities completed for the Waste Solidification Building (WSB).

	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Target	87% completed	91% completed	100% complete	N/A	N/A	N/A	N/A
Result	Exceeded - 90%						
Endpoint Target	TBD						

Note: Due to preliminary cost increases and the current budget environment, the Administration is continuing an ongoing analysis to determine whether there are options to complete the mission more efficiently. As a result, the scope of activities remaining to complete the WSB project may be modified to reflect the change in program direction. Performance measure targets might be adjusted to reflect the decision of the path forward for plutonium disposition.

Fissile Materials Disposition
Capital Summary

(Dollars in Thousands)

	Total	Prior Years	FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Current	FY 2015 vs FY 2014
Capital Operating Expenses Summary (including (Major Items of Equipment (MIE)							
Capital Equipment >$500K (including MIE)	18,471	9,536	1,195	1,221	1,221	1,248	+27
Total, Capital Operating Expenses	**18,471**	**9,536**	**1,195**	**1,221**	**1,221**	**1,248**	**+27**
Capital Equipment > $500K (including MIE)							
Total Non-MIE Capital Equipment (>$500K)	18,471	9,536	1,195	1,221	1,221	1,248	27
Total, Capital Equipment (including MIE)	**18,471**	**9,536**	**1,195**	**1,221**	**1,221**	**1,248**	**+27**
Total, Capital Summary	**18,471**	**9,536**	**1,195**	**1,221**	**1,221**	**1,248**	**+27**

Outyears for Fissile Materials Disposition

(Dollars in Thousands)

	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Capital Operating Expenses Summary (including (Major Items of Equipment (MIE)				
Capital Equipment >$500K (including MIE)	1,275	1,303	1,332	1,361
Total, Capital Operating Expenses	**1,275**	**1,303**	**1,332**	**1,361**
Capital Equipment > $500K (including MIE)				
Total Non-MIE Capital Equipment (>$500K)	1,275	1,303	1,332	1,361
Total, Capital Equipment (including MIE)	**1,275**	**1,303**	**1,332**	**1,361**
Total, Capital Summary	**1,275**	**1,303**	**1,332**	**1,361**

Fissile Materials Disposition
Construction Projects Summary

	(Dollars in Thousands)					
	Total	Prior Years	FY 2013 Current	FY 2014 Current	FY 2015 Current	FY 2015 vs FY 2014
99-D-141-02, Waste Solidification Building, (WSB)						
Total Estimated Cost (TEC)	297,862	244,332	48,404	0	5,126	+5,126
Other Project Cost (OPC)	103,724	57,926	25,798	20,000	0	-20,000
Total, 99-D-141-02, Waste Solidification Building, (WSB)	**401,586**	**302,258**	**74,202**	**20,000**	**5,126**	**-14,874**
99-D-143, MOX Fuel Fabrication Facility (MFFF)						
Total Estimated Cost (TEC)	6,391,019	3,455,787	400,990	402,743	196,000	-206,743
Other Project Cost (OPC)	1,283,655	230,333	40,000	40,000	25,000	-15,000
Total, 99-D-143, MOX Fuel Fabrication Facility (MFFF)	**7,674,674**	**3,686,120**	**440,990**	**442,743**	**221,000**	**-221,743**
Total All Construction Projects						
Total Estimated Cost (TEC)	6,688,881	3,700,119	449,394	402,743	201,126	-201,617
Other Project Cost (OPC)	1,387,379	288,259	65,798	60,000	25,000	-35,000
Total Project Cost (TPC) All Construction Projects	**8,076,260**	**3,988,378**	**515,192**	**462,743**	**226,126**	**-236,617**

Outyears to Completion for Fissile Materials Disposition [a]

	(Dollars in Thousands)				
	FY 2016 Request	**FY 2017 Request**	**FY 2018 Request**	**FY 2019 Request**	**Outyears to Completion**
99-D-143, MOX Fuel Fabrication Facility (MFF)					
Total Estimated Cost (TEC)	196,000	196,000	196,000	196,000	TBD
Other Project Cost (OPC)	25,000	25,000	25,000	25,000	TBD
Total, 99-D-143, MOX Fuel Fabrication Facility (MFF)	**221,000**	**221,000**	**221,000**	**221,000**	**TBD**
Total All Construction Projects					
Total Estimated Cost (TEC)	196,000	196,000	196,000	196,000	TBD
Other Project Cost (OPC)	25,000	25,000	25,000	25,000	TBD
Total Project Cost (TPC) All Construction Projects	**221,000**	**221,000**	**221,000**	**221,000**	**TBD**

[a] Schedules, dates and costs will be updated to reflect the decision on the path forward for plutonium disposition.

99-D-143, Mixed Oxide (MOX) Fuel Fabrication Facility,
Savannah River Site (SRS), Aiken, South Carolina
Project is for Design and Construction

1. Significant Changes

The most recent Department of Energy (DOE) Order 413.3B approved Critical Decision (CD) is CD-3, Start of Construction, and was approved on April 11, 2007, with a Total Project Cost (TPC) of $4,814,329 and CD-4 of Fiscal Year (FY) 2016. Construction began on August 1, 2007, as directed by the Revised Continuing Resolution, 2007, Public Law 110-5. The latest approved baseline change was on December 17, 2008, with a TPC of $4,857,129 and CD-4 of FY 2017.

A Federal Project Director, certified at the appropriate level is assigned to this project. This Project Data Sheet (PDS) does not include a new start for the budget year.

This PDS is an update of the FY 2014 PDS. Significant changes include the following:

In FY 2012, the contracting partner submitted a Baseline Change Proposal (BCP) for the MFFF project that would increase the TPC to $7.7 billion with a completion date of November 2019. An independent cost estimate (ICE) was initiated in September 2012 to begin validating the BCP submitted by the contracting partner. Because the contracting partner BCP was based on an assumed funding profile of approximately $600 million annually beginning in FY 2014, the ICE was suspended in April 2013. Analysis of the suspended ICE along with a lower outyear annual funding profile resulted in significantly higher costs than the contracting partner submitted BCP and a later completion date. As a result of the MFFF project increases along with increased lifecycle costs, the MFFF project will be placed in cold stand-by while the Department develops a detailed implementation plan for more efficient plutonium disposition options. Furthermore, the Department will conduct a root cause analysis on the cost increases of the project as directed in P.L. 113-76, Consolidated Appropriations Act, 2014.

During FY 2013, the Administration slowed activities associated with the current plutonium disposition strategy while it conducted an analysis of options to complete the mission more efficiently. In the course of this analysis, it was determined that the MOX fuel approach is significantly more expensive than anticipated, even with consideration of potential contract restructuring and other improvements that have been made to the MOX project. Due to increases, with a total lifecycle cost of approximately $30 billion the MOX fuel approach is not viable within the available resources.

During the second half of FY 2013, the focus was to slow down the construction and procurement activities while realigning the management systems, processes, and procedures in preparation for implementation of the path forward for the plutonium disposition program. Construction was slowed to one 10 hour shift four days a week, focusing on critical path activities. Existing contracts were slowed where possible and the only new procurements awarded were those necessary to support the project slowdown. Federal and contracting partner teams have been restructured with a functional alignment approach. The functional alignment approach divides the project into more manageable sets of scope and provides focused project managers for each area. Due to the uncertainty of the project moving forward, personnel turnover has continued to increase due to voluntary separations, scope evolution, the issuance of WARN Act notifications, and layoffs. At the beginning of April 2013, there were 2,271 contracting partner personnel on board and by the end of December 2013 this number has been reduced to 1,523. There were 368 personnel laid off and 451 personnel left voluntarily or due to scope evolution.

Due to the magnitude of the changes in the FY 2015 and out year funding profile, a detailed cold stand-by plan for the MFFF project will be developed, approved, and implemented in accordance with the DOE Project Management and Contract processes. This plan will present in detail the impact of placing the project in cold stand-by. NNSA will engage with the contracting partner to begin development and implementation of this plan in March 2014.

2. Design, Construction, and D&D Schedule

(fiscal quarter or date)

	CD-0	CD-1	Design Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2000	N/A	2QFY1999	4QFY2001	N/A	1QFY2002	4QFY2005	N/A	N/A
FY 2001	N/A	2QFY1999	3QFY2002	N/A	4QFY2002	1QFY2006	N/A	N/A
FY 2002	N/A	2QFY1999	4QFY2002	N/A	2QFY2003	1QFY2007	N/A	N/A
FY 2003	N/A	2QFY1999	4QFY2003	N/A	2QFY2004	4QFY2007	N/A	N/A
FY 2004	N/A	2QFY1999	1QFY2004	N/A	2QFY2004	4QFY2007	N/A	N/A
FY 2005	N/A	2QFY1999	3QFY2004	N/A	3QFY2005	2QFY2009	N/A	N/A
FY 2006	N/A	2QFY1999	1QFY2005	N/A	3QFY2005	TBD	N/A	N/A
FY 2007	N/A	2QFY1999	4QFY2009	N/A	2QFY2007	4QFY2014	N/A	N/A
FY 2008	1QFY1997	2QFY1999	2QFY2011	2QFY2007	2QFY2007	4QFY2013	N/A	N/A
FY 2009	1QFY1997	03/22/1999	2QFY2013[a]	04/11/2007	04/11/2007[b]	4QFY2016	N/A	N/A
FY 2010	1QFY1997	03/22/1999	2QFY2013	04/11/2007	04/11/2007	1QFY2017	N/A	N/A
FY 2011	1QFY1997	03/22/1999	2QFY2013	04/11/2007	04/11/2007	1QFY2017	N/A	N/A
FY 2012	1QFY1997	03/22/1999	2QFY2013	04/11/2007	04/11/2007	1QFY2017	N/A	N/A
FY 2013	1QFY1997	03/22/1999	2QFY2013	04/11/2007	04/11/2007	1QFY2017	N/A	N/A
FY 2014	1QFY1997	3/22/1999	4QFY2014	04/11/2007	04/11/2007	TBD[c]	N/A	N/A
FY 2015	1QFY1997	3/22/1999	TBD	04/11/2007	04/11/2007	TBD[c]	N/A	N/A

CD-0 – Approve Mission Need
CD-1 – Approve Alternative Selection and Cost Range
CD-2 – Approve Performance Baseline
CD-3 – Approve Start of Construction
CD-4 – Approve Start of Operations or Project Closeout
D&D Start – Start of Demolition & Decontamination (D&D) work
D&D Complete – Completion of D&D work

(fiscal quarter or date)

	Nuclear Regulatory Commission (NRC) Construction Authorization	CD 2A/3A	Performance Baseline Validation	CD 2B/3B
FY 2005	03/30/2005	09/30/2005	N/A	N/A
FY 2006	N/A	N/A	07/07/2006	N/A
FY 2007	N/A	N/A	N/A	04/06/2006

CD 2A/3A - Approval to start Site Preparation
CD 2B/3B - Approval to begin long lead procurements (“trapped” tanks, steel embeds, reinforcing steel, barrier doors)

[a] Facility, process, and equipment design have been completed.
[b] The Department approved CD-3 (Start of Construction) on April 11, 2007, however, as directed by the Revised Continuing Resolution, 2007, Public Law 110-5, construction began on August 1, 2007.
[c] Schedules, dates, and costs will be updated to reflect the decision on the path forward for plutonium disposition.

3. Baseline and Validation Status

(fiscal quarter or date)

	TEC, Design	TEC, Construction	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
FY 2000	TBD	TBD	383,186	0	N/A	TBD	N/A
FY 2001	TBD	TBD	383,186	0	N/A	TBD	N/A
FY 2002	TBD	TBD	TBD	TBD	N/A	TBD	N/A
FY 2003	TBD	TBD	TBD	TBD	N/A	TBD	N/A
FY 2004	TBD	TBD	TBD	TBD	N/A	TBD	N/A
FY 2005	TBD	TBD	TBD	TBD	N/A	TBD	N/A
FY 2006	TBD	TBD	TBD	TBD	N/A	TBD	N/A
FY 2007	TBD	TBD	3,277,984	354,108	N/A	354,108	3,632,092
FY 2008	TBD	TBD	3,868,628	830,701	N/A	830,701	4,699,329
FY 2009	TBD	TBD	3,938,628	875,701	N/A	875,701	4,814,329
FY 2010	TBD	TBD	3,975,828	881,301	N/A	881,301	4,857,129
FY 2011	960,925	3,014,903	3,975,828	881,301	N/A	881,301	4,857,129
FY 2012	978,073	2,997,755	3,975,828	881,301	N/A	881,301	4,857,129
FY 2013	994,073	2,981,755	3,975,828	881,301	N/A	881,301	4,857,129
FY 2014	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2015	TBD[a]	TBD[a]	TBD[a]	TBD[a]	N/A	TBD[a]	TBD[a]

4. Project Description, Justification, and Scope

Mission Need

The overall project mission need is to dispose of at least 34 metric tons (MT) of surplus weapon-grade plutonium in accordance with the amended *U.S.-Russia Plutonium Management and Disposition Agreement.* The MOX Fuel Fabrication Facility would accomplish this by converting the surplus material into mixed oxide fuel that could subsequently be irradiated in power producing reactors in the United States. Once irradiated and converted into spent fuel, the material could no longer be readily used for nuclear weapons.

Scope and Justification:

The U.S. MOX Fuel Fabrication Facility (MFFF) at the SRS would combine surplus weapon-grade plutonium oxide with depleted uranium oxide to form MOX fuel assemblies to be used as fuel for U.S. commercial nuclear reactors. The nominal design life of the facility would be 40 years; however, it would take approximately 15 years to complete the 34 MT mission. After completing its mission, the facility could be deactivated, decontaminated, and decommissioned in approximately three to four years.

The MOX facility has been designed with the capacity to receive and process 3.5 MT of plutonium oxide per year. The plutonium oxide would come from the disassembly and conversion of weapon pits and from other DOE inventories of weapon-grade plutonium. The MOX facility would have the capacity to store sufficient plutonium oxide for two years of operations.

The MOX facility would be approximately 441,000 square feet in size and provide all of the material processing and fabrication operations needed to produce MOX fuel. The MOX facility operations would include: aqueous polishing (AP) to purify the plutonium oxide; blending and milling; pelletizing; sintering; grinding; loading fuel rods; bundling fuel assemblies; and storing feed material, pellets, and fuel assemblies. The facility would also include a laboratory and space for material sampling and use by a monitoring and inspection team. Adjacent to the MOX process areas is the secure shipping and receiving area to support material receipt, utilities, and technical support.

[a] Schedules, dates, and costs will be updated to reflect the decision resulting from the assessment in the out years.

The design of the MFFF is based on technologies, processes, and facilities that have been successfully operating in France for decades, specifically AREVA's MELOX Services and La Hague facilities. The facility has been designed to meet U.S. conventions, codes, standards, and regulatory requirements, and would be licensed by the NRC.

FY 2013 Project Status

In FY 2013, the MFFF structural construction package was completed to include the primary exterior wall and MFFF roof. Seismic-construction support design, closure of work packages, material/equipment management, records/control/storage, NNSA oversight support (such as construction and vendor oversight), regulatory affairs (such as interactions with NRC), and utilities and maintenance of completed buildings were continued. In addition, while NNSA was conducting an analysis of options, the following activities were slowed down during the second half of the fiscal year: HVAC construction, process piping (including active gallery piping), fire protection, electrical, coatings, glovebox and equipment (risk reduction) testing, glovebox and process equipment installation, and future commitments.

FY 2014 and FY 2015 Planned Description of Activities

In FY 2014, the overall scope was focused on advancing completion of the first and second floor of the aqueous processing (AP) area and the first floor of the manufacturing dry process (MP) area to support the overall project critical path based on engineering and glovebox/equipment requirements and procurement activities. Construction activities in the first half of FY 2014 included setting a prefabricated pipe module in the active gallery; installation of dampers, duct and HVAC supports; installation of process pipe and the associated chemical commodity equipment; and installation of electrical equipment and cable trays. Activities in the second half of FY 2014 will focus on transitioning to a cold stand-by mode.

A detailed plan will be developed that will address cold stand-by activities. Some actions, such as reduction of craft, can be done immediately. Other staff reductions will occur after the cold stand-by plan is developed, approved, and appropriate notifications are made.

In FY 2015, the overall scope will continue to support the activities associated with maintaining the MOX project in a cold stand-by mode.

Risk Management

A revised risk assessment will be conducted in conjunction with the development of the cold stand-by plan. It is anticipated that the largest risks going forward will include the management and closure of contracts, retention of key personnel, and the closure of paperwork such as design documents and work packages.

The project is being conducted in accordance with the project management requirements in DOE Order 413.3B, Program and Project Management for the Acquisition of Capital Assets, and all appropriate project management requirements have been met.

5. Financial Schedule

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 1999	28,000	9,600	2,545
FY 2000	12,375	30,775	33,512
FY 2001	25,943	25,943	29,938
FY 2002	65,993	65,993	52,513
FY 2003	92,088	92,088	82,022
FY 2004	81,081	81,081	93,457
FY 2005	251,195	251,195	216,801
FY 2006	119,853	119,853	165,618
FY 2007	65,133	65,133	62,342
FY 2008 [a]	56,045	56,045	58,958
FY 2009 [b]	72,509	72,509	68,395
FY 2010	70,987	70,987	65,056
FY 2011	51,134	51,134	50,757
FY 2012	29,094	29,094	34,642
FY 2013	37,000	37,000	24,445
FY 2014 Reprogramming	0	0	0
FY 2014	14,000	14,000	18,000
FY 2015	0	0	6,898
FY 2016	0	0	0
FY 2017	0	0	0
FY 2018	0	0	0
FY 2019	0	0	0
Total, Design	TBD	TBD	TBD
Construction			
FY 2004	279,193	0	0
FY 2005	113,892	44,100	0
FY 2006	97,947	217,469	15,210
FY 2007	197,367	197,367	115,065
FY 2008 [a]	175,676	290,139	209,174
FY 2008 (rescinded PY unobligated balance)	-115,000	0	0
FY 2009 [b]	395,299	395,299	301,323
FY 2010	433,251	433,251	429,326
FY 2011	450,654	450,654	482,330
FY 2012	406,078	406,078	671,212
FY 2013	363,990	363,990	476,204
FY 2014 Reprogramming	59,242	59,242	0
FY 2014	329,500	329,500	327,286

[a] MOX funded within the Nuclear Energy appropriation.
[b] MOX funded with the Other Defense Activities appropriation.

	(dollars in thousands)		
	Appropriations	Obligations	Costs
FY 2015	196,000	196,000	355,959
FY 2016	196,000	196,000	TBD
FY 2017	196,000	196,000	TBD
FY 2018	196,000	196,000	TBD
FY 2019	196,000	196,000	TBD
Total, Construction	TBD	TBD	TBD
TEC			
FY 1999	28,000	9,600	2,545
FY 2000	12,375	30,775	33,512
FY 2001	25,943	25,943	29,938
FY 2002	65,993	65,993	52,513
FY 2003	92,088	92,088	82,022
FY 2004	360,274	81,081	93,457
FY 2005	365,087	295,295	216,801
FY 2006	217,800	337,322	180,828
FY 2007	262,500	262,500	177,407
FY 2008 [a]	231,721	346,184	268,132
FY 2008 (rescinded PY unobligated balance)	-115,000	0	0
FY 2009 [b]	467,808	467,808	369,718
FY 2010	504,238	504,238	494,382
FY 2011	501,788	501,788	533,087
FY 2012	435,172	435,172	705,854
FY 2013	400,990	400,990	500,649
FY 2014 Reprogramming	59,242	59,242	0
FY 2014	343,500	343,500	345,286
FY 2015	196,000	196,000	362,857
FY 2016	196,000	196,000	TBD
FY 2017	196,000	196,000	TBD
FY 2018	196,000	196,000	TBD
FY 2019	196,000	196,000	TBD
Total, TEC	TBD	TBD	TBD

[a] MOX funded within the Nuclear Energy appropriation.
[b] MOX funded with the Other Defense Activities appropriation.

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Other Project Cost (OPC)			
OPC except D&D			
FY 1999	5,000	5,000	4,500
FY 2000	5,000	5,000	4,500
FY 2001	5,000	5,000	5,000
FY 2002	5,000	5,000	5,000
FY 2003	8,000	8,000	5,000
FY 2004	9,292	9,292	11,500
FY 2005	9,357	9,357	3,749
FY 2006	28,200	21,300	7,023
FY 2007	915	7,792	9,278
FY 2008 [a]	47,068	47,068	15,746
FY 2009 [b]	0	0	21,451
FY 2010	56,466	56,466	19,344
FY 2011	4,000	4,000	50,211
FY 2012	47,035	47,035	33,142
FY 2013	40,000	40,000	35,065
FY 2014	40,000	40,000	50,886
FY 2015	25,000	25,000	53,915
FY 2016	25,000	25,000	TBD
FY 2017	25,000	25,000	TBD
FY 2018	25,000	25,000	TBD
FY 2019	25,000	25,000	TBD
Total, OPC except D&D	TBD	TBD	TBD

[a] MOX funded within the Nuclear Energy appropriation.
[b] MOX funded with the Other Defense Activities appropriation.

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Total Project Cost (TPC)			
FY 1999	33,000	14,600	7,045
FY 2000	17,375	35,775	38,012
FY 2001	30,943	30,943	34,938
FY 2002	70,993	70,993	57,513
FY 2003	100,088	100,088	87,022
FY 2004	369,566	90,373	104,957
FY 2005	374,444	304,652	220,550
FY 2006	246,000	358,622	187,851
FY 2007 [a]	263,415	270,292	186,685
FY 2008 [b c]	278,789	393,252	283,878
FY 2008 (rescinded PY unobligated balance)	-115,000	0	0
FY 2009 [d e]	467,808	467,808	391,169
FY 2010 [f]	560,704	560,704	513,726
FY 2011 [g]	505,788	505,788	583,298
FY 2012	482,207	482,207	738,996
FY 2013	440,990	440,990	535,714
FY 2013 Reprogramming	59,242	59,242	0
FY 2014	383,500	383,500	396,172
FY 2015	221,000	221,000	416,772
FY 2016	221,000	221,000	TBD
FY 2017	221,000	221,000	TBD
FY 2018	221,000	221,000	TBD
FY 2019	221,000	221,000	TBD
Total, TPC [h]	TBD	TBD	TBD

[a] Includes $31 million for long-lead procurements.
[b] Includes $37.6 million for long-lead procurements.
[c] MOX funded within the Nuclear Energy appropriation.
[d] MOX funded with the Other Defense Activities appropriation.
[e] Includes $177.4 million for long-lead procurements.
[f] Includes $167.9 million for long-lead procurements.
[g] Includes $67.1 million for long-lead procurements.
[h] Schedules, dates, and costs will be updated to reflect the decision on the path forward for plutonium disposition.

6. Details of Project Cost Estimate

(dollars in thousands)

	Current Total Estimate[a]	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED)			
Design	TBD	TBD	916,148
Contingency	0	0	0
Total, PED	TBD	TBD	916,148
Construction			
Site Preparation	39,957	39,957	39,929
Equipment	TBD	TBD	251,791
Other Construction	TBD	TBD	2,067,639
Contingency	TBE	TBE	663,121
Total, Construction	TBD	TBD	3,022,480
Total, TEC	TBD	TBD	3,938,628
Contingency, TEC	TBD	TBD	663,121
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	37,723	37,723	37,723
Conceptual Design	0	0	0
Start-up	TBD	TBD	650,468
Other OPC	TBD	TBD	NA
Contingency	TBD	TBD	187,510
Total, OPC except D&D	TBD	TBD	875,701
D&D			
D&D	0	0	0
Contingency	0	0	0
Total, D&D	0	0	0
Total, OPC	TBD	TBD	875,701
Contingency, OPC	TBD	TBD	187,510
Total, TPC	TBD	TBD	4,814,329
Total, Contingency	TBD	TBD	850,631

[a] Schedules, dates, and costs will be updated to reflect the decision on the path forward for plutonium disposition

7. Schedule of Appropriation Requests

(dollars in thousands)

		Prior Years	FY 2014 [a]	FY 2015 [b]	FY 2016 [b]	FY 2017 [b]	FY 2018 [b]	FY 2019 [b]	Outyears [b]	Total
FY 2009	TEC	3,353,725	158,325	125,611	300,967	0	0	0	0	3,938,628
	OPC	632,806	149,192	85,771	7,932	0	0	0	0	875,701
	TPC	3,986,531	307,517	211,382	308,899	0	0	0	0	4,814,329
FY 2010	TEC	3,702,589	109,661	125,773	37,805	0	0	0	0	3,975,828
	OPC	553,002	230,697	91,603	5,999	0	0	0	0	881,301
	TPC	4,255,591	340,358	217,376	43,804	0	0	0	0	4,857,129
FY 2011 [c d]	TEC	3,702,589	109,661	125,773	37,805	0	0	0	0	3,975,828
	OPC	553,002	230,697	91,603	5,999	0	0	0	0	881,301
	TPC	4,255,591	340,358	217,376	43,804	0	0	0	0	4,857,129
FY 2012	TEC	3,702,589	109,661	125,773	37,805	0	0	0	0	3,975,828
	OPC	553,002	230,697	91,603	5,999	0	0	0	0	881,301
	TPC	4,255,591	340,358	217,376	43,804	0	0	0	0	4,857,129
FY 2013	TEC	3,844,589	118,661	9,773	2,805	0	0	0	0	3,975,828
	OPC	411,002	221,697	207,603	40,999	0	0	0	0	881,301
	TPC	4,255,591	340,358	217,376	43,804	0	0	0	0	4,857,129
FY 2014	TEC	3,893,622	320,000	TBD	TBD	TBD	TBD	TBD	TBD	TBD
	OPC	270,333	40,000	TBD	TBD	TBD	TBD	TBD	TBD	TBD
	TPC	4,163,955	360,000	TBD	TBD	TBD	TBD	TBD	TBD	TBD
FY 2014 Reprogramming	TEC	3,856,777	59,243	TBD	TBD	TBD	TBD	TBD	TBD	TBC
	OPC	270,333	0	0	0	0	0	0	0	270,333
	TPC	4,127,110	59,243	0	0	0	0	0	0	TBD
FY 2015	TEC	3,856,777	402,743	196,000	196,000	196,000	196,000	196,000	TBD	TBD
	OPC	270,333	40,000	25,000	25,000	25,000	25,000	25,000	TBD	TBD
	TPC	4,127,110	442,743	221,000	221,000	221,000	221,000	221,000	TBD	TBD

8. Related Operations and Maintenance Funding Requirements

Start of Operation of Beneficial Occupancy (fiscal quarter or date)	TBD
Expected Useful Life (number of years) (after hot startup) [e]	TBD
Expected Future Start of D&D of this capital asset (fiscal quarter)	N/A

(Related Funding Requirements)

(dollars in thousands)

	Annual Costs		Life Cycle Costs	
	Current Total	Previous Total	Current Total	Previous Total
Operations	0	470,021	0	7,111,447
Security	0	73,190	0	1,097,844
Total, Operations and Security	0	543,211	0	8,209,291

[a] These numbers reflect the slow-down of the current plutonium disposition strategy while assessing alternative strategies.
[b] Schedules, dates, and costs will be updated to reflect the decision on the path forward for plutonium disposition.
[c] FY 2011 OPC appropriations were only $4 million vs. $30 million planned.
[d] FY 2011 total estimated cost appropriations were increased by $26 million.
[e] The nominal design life of the facility is 40 years, however, it will take approximately 15 years to complete the 34 MT mission.

The MFFF life cycle cost has not been updated from the FY 2014 submittal. Upon selecting a preferred option, the Department will commission an independent assessment of the option. This independent assessment will be conducted by an organization external to the Department and its laboratories and will include establishment of life cycle costs, schedules, performance and scope of the selected option.

9. Required D&D Information

Area	Square Feet
Area of new construction	441,000
Area of existing facility(s) being replaced	N/A
Area of additional D&D space to meet the “one-for-one” requirement	N/A

Name(s) and site location(s) of existing facility(s) to be replaced:
The new construction is not replacing an existing facility.

10. Acquisition Approach

The procurement strategy for the MOX facility involved awarding a base contract to Duke Cogema Stone & Webster (now Shaw AREVA MOX Services) in March 1999 for design, licensing, and irradiation services associated with fuel qualification activities and reactor licensing. Three options were included in the base contract for: (1) construction and management oversight; (2) hot start-up, operations, and irradiation services; and (3) deactivation—which can be awarded separately. Option 1 was exercised by DOE in May 2008. In January 2009, an Early Option 2 proposal was submitted to NNSA for consideration. The proposed work scope included the fabrication of eight fuel assemblies as a part of the facility hot start-up plan.

Shaw AREVA MOX Services is a partnership of The Shaw Group and the French company, AREVA. In February 2013 Chicago Bridge and Iron (CB&I) Company completed its acquisition of The Shaw Group. Since CB&I is a foreign-based company, a proxy company has been formed to address U.S. government foreign ownership and control regulations. As a result, a proxy company under CB&I named Shaw Project Services Group, LLC, was formed to oversee Shaw’s security-sensitive work such as the MFFF Project.

Physical construction is being performed through a combination of fixed-price sub-contracts and MOX Services’ direct managed construction craft. A combination of award fees and incentive fees are included in the overall contract with MOX Services to reward performance within established project baselines.

99-D-141-02, Waste Solidification Building
Savannah River Site, Aiken, South Carolina
Project is for Construction

1. Significant Changes

The most recent Department of Energy (DOE) Order 413.3B approved Critical Decision (CD) is CD-3, Start of Construction, and was approved on December 10, 2008 with a Total Project Cost (TPC) of $344.455 million and CD-4 of fiscal year (FY) 2013. In December 2012, the Acquisition Executive approved a baseline change proposal with a TPC of $414 million and a completion date of FY 2015.

A Federal Project Director (FPD), certified at Level 3, is assigned to this project. This Project Data Sheet (PDS) does not include a new start for the budget year.

This PDS is an update of the FY 2014 PDS.

The Administration remains firmly committed to the overarching goals of the plutonium disposition program to: 1) dispose of excess U.S. plutonium; and 2) achieve Russian disposition of equal quantities of plutonium. The Administration recognizes the importance of the U.S.-Russia Plutonium Management and Disposition Agreement (PMDA), whereby each side committed to dispose of at least 34 metric tons of weapon-grade plutonium. To dispose of U.S. plutonium, the program has been constructing the Mixed Oxide (MOX) Fuel Fabrication Facility (MFFF), which would enable the Department to dispose of weapon-grade plutonium by converting it into MOX fuel and irradiating it in commercial nuclear reactors. During FY 2013, the Administration slowed activities associated with the current plutonium disposition strategy while it conducted an analysis of options to complete the mission more efficiently. In the course of this analysis, it was determined that the MOX fuel approach is significantly more expensive than anticipated, even with consideration of potential contract restructuring and other improvements that have been made to the MOX project. Due to these increases and the current budget environment, the MOX fuel approach is currently not viable. As a result, the MOX project will be placed in cold stand-by while the Department further studies implementation and costs of options to complete the plutonium disposition mission more efficiently.

The Acquisition Executive approved the WSB baseline change proposal (BCP) in December 2012 with a TPC of $414 million and a completion date of August 2015. The project rebaseline that was approved in December 2012 includes NNSA contingency for subcontracting partners Request for Equitable Adjustments (REA). Subcontracting partners REA claims are expected to impact project contingency.

The SRNS' site-wide Earned Value Management System (EVMS) certification - a contractual requirement - was suspended in FY 2013 due largely to SRNS' inability to implement effective corrective actions on the EVMS for the WSB project. SRNS is working to make the necessary modifications sufficient to reestablish Government confidence in the earned value system. DOE will conduct a follow-up review to recertify the EVMS and validate compliance with requirements.

Although the analysis is not yet complete, sufficient information existed to be able to state that the first receipt of liquids from the MFFF will be a minimum of five years after completion of the WSB project. Given this information, a number of activities (primarily associated with operational readiness reviews) were identified which were unnecessary in light of the potential length of time until operation as a radiological facility. Consequently, a letter of direction was provided to the WSB contracting partner in December 2013 to modify completion criteria for the project and to place the facility in a lay-up condition while the Department concludes the analysis of options. This budget requests $5 million in TEC funds but no OPC funds for FY 2015. Although this request will not fully fund the TPC of $414 million, the funding should be adequate to complete the fixed price construction sub-contract and to place the project in a lay-up condition that will preserve and maintain the facility and equipment until the capability may be required. The contracting partner would conduct system and component testing but would not perform integrated system testing, minimizing the need for additional OPC funds. The largest uncertainty to the final project cost is the resolution of outstanding REA's and associated legal costs.

2. Design, Construction, and D&D Schedule

(fiscal quarter or date)

	CD-0[a]	CD-1[b]	Design Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 1999	10/31/1997	10/31/1997	TBD	TBD	TBD	TBD	N/A	N/A
FY 2000	10/31/1997	10/31/1997	TBD	TBD	TBD	TBD	N/A	N/A
FY 2001	10/31/1997	10/31/1997	TBD	TBD	TBD	TBD	N/A	N/A
FY 2002	10/31/1997	10/31/1997	TBD	TBD	TBD	TBD	N/A	N/A
FY 2003	10/31/1997	10/31/1997	TBD	TBD	TBD	TBD	N/A	N/A
FY 2004	10/31/1997	10/31/1997	TBD	TBD	TBD	TBD	N/A	N/A
FY 2005	10/31/1997	10/31/1997	TBD	TBD	TBD	TBD	N/A	N/A
FY 2006	10/31/1997	10/31/1997	TBD	TBD	TBD	TBD	N/A	N/A
FY 2007	10/31/1997	10/31/1997	TBD	TBD	TBD	TBD	N/A	N/A
FY 2008	10/31/1997	10/31/1997	3QFY2008	4QFY2008	1QFY2009	TBD	N/A	N/A
FY 2009	10/31/1997	10/31/1997	3QFY2008	4QFY2008	4QFY2008	1QFY2013	N/A	N/A
FY 2010	10/31/1997	10/31/1997	05/09/2008	12/10/2008	12/10/2008	4QFY2013	N/A	N/A
FY 2011	10/31/1997	10/31/1997	05/09/2008	12/10/2008	12/10/2008	4QFY2013	N/A	N/A
FY 2012	10/31/1997	10/31/1997	05/09/2008	12/10/2008	12/10/2008	4QFY2013	N/A	N/A
FY 2012 Reprogramming[c]	10/31/1997	10/31/1997	05/09/2008	12/10/2008	12/10/2008	3QFY2014	N/A	N/A
FY 2014	10/31/1997	10/31/1997	05/09/2008	12/10/2008	12/10/2008	4QFY2015	N/A	N/A
FY 2015	10/31/1997	10/31/1997	05/09/2008	12/10/2008	12/10/2008	4QFY2015	N/A	N/A

CD-0 – Approve Mission Need
CD-1 – Approve Alternative Selection and Cost Range
CD-2 – Approve Performance Baseline
CD-3 – Approve Start of Construction
CD-4 – Approve Start of Operations or Project Closeout
D&D Start – Start of D&D work
D&D Complete – Completion of D&D work

3. Baseline and Validation Status

(dollars in thousands)

	TEC, Design	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 1999	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2000	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2001	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2002	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2003	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2004	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2005	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2006	25,700	TBD	TBD	TBD	N/A	TBD	25,700
FY 2007	29,300	160,000	189,300	36,708	N/A	36,708	226,008
FY 2008	31,183	171,013	202,196	42,908	N/A	42,908	245,104

[a] Approval of mission need for waste treatment activities was originally obtained in 1997 as part of the scope of the PDCF project and was reinforced in the Record of Decision.
[b] Preliminary design activities for the WSB were initiated in February 2003, but suspended in 2004 due to uncertainties in the schedule of the overall plutonium disposition program and the related Russian disposition program. These issues were resolved and design activities were resumed in October 2006.
[c] The FY 2012 reprogramming was executed in FY 2013.

(dollars in thousands)

	TEC, Design	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2009	36,102	159,367	195,469	82,718	N/A	82,718	278,187
FY 2010	42,542	201,789	244,331	100,124	N/A	100,124	344,455
FY 2011	42,652	201,679	244,331	100,124	N/A	100,124	344,455
FY 2012	42,652	201,679	244,331	100,124	N/A	100,124	344,455
FY 2012 Reprogramming[a]	42,652	243,883	286,535	97,465	N/A	97,465	384,000
FY 2014	42,652	TBD	TBD	TBD	N/A	TBD	TBD
FY 2015	42,652	TBD	TBD	TBD	N/A	TBD	TBD

4. Project Description, Justification, and Scope

Mission Need

The mission of the WSB is to process radioactive waste streams from the MFFF into the following waste forms: (1) a waste form that is suitable for shipment and disposal as transuranic waste at the Waste Isolation Pilot Plant, and (2) low-level waste (LLW) that is suitable for disposal at government or commercial LLW repositories. The WSB would provide a waste treatment capability not currently available at the Savannah River Site necessary to receive and treat unique waste streams generated by plutonium disposition.

Scope and Justification

The WSB will process radioactive liquid waste streams from the MFFF into a solid waste form for ultimate disposal. The WSB is required to be operational to receive water runs from MFFF in support of MFFF cold start-up testing. The radioactive liquid waste consists of one high-activity and one low-activity stream. The high-activity stream contains significant amounts of americium removed from plutonium oxide during mixed oxide (MOX) aqueous polishing operations. The low-activity stream contains stripped uranium also removed from MOX aqueous polishing operations. The projected WSB operating life is approximately 20 years; however the facility has a design life of 30 years. After completing its mission, the WSB will be deactivated, decontaminated, and decommissioned over approximately two to four years.

The scope of this project consists of the following activities: design, construction, procurement, installation, testing, demonstration, and start-up testing of structures and equipment. The processing facility is approximately 33,000 square feet and is designed as a single story structure of hardened concrete. An additional separate structure, consisting of a covered concrete pad, will be constructed to provide temporary storage of containerized waste following treatment prior to packaging for shipment. The major process equipment includes tanks, evaporators, and solidification equipment.

FY 2014 and FY 2015 Planned Description of Activities

In FY 2014, the fixed-price construction contracting partner will complete facility construction (mechanical completion) and turnover of the facility to the M&O Contracting partner; and perform limited system and component testing.

In FY 2015, perform limited system and component testing, complete the construction sub-contract, and place the facility into a lay-up mode while the Department completes the on-going analysis for plutonium disposition.

Risk Management

The WSB has implemented and maintained an active risk management process throughout the project lifecycle. Risks are routinely reviewed, assessed and updated. Currently, the project has no high risks identified following mitigation measures. The most significant risk affecting the project are shown in the following table:

The WSB project is being conducted in accordance with the project management requirements in Department of Energy Order 413.3B, Program and Project Management for the Acquisition of Capital Assets, and all appropriate project management requirements have been met.

[a] The FY 2012 reprogramming was executed in FY 2013.

Risk	Potential Impacts
1. Productivity assumptions will not be met.	Potential to delay completion date, increasing costs to the project due to longer project duration. Additional funding beyond the current approved baseline could be required in order to complete the project.
2. Settlement of REA and associated legal costs could exceed assumptions.	Potential to exceed the Total Project Cost. Additional funding beyond the current approved baseline could be required in order to settle claims and litigation costs.

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Design			
FY 1999	0	0	0
FY 2000	0	0	0
FY 2001	0	0	0
FY 2002	0	0	0
FY 2003	6,195	6,195	4,610
FY 2004	2,100	2,100	3,114
FY 2005	0	0	0
FY 2006	2,354	2,354	1,003
FY 2007	15,500	15,500	11,745
FY 2008 [a]	16,393	16,393	20,072
FY 2009 [a]	110	110	2,108
Total, PED	42,652	42,652	42,652
Construction			
FY 2006	0	0	0
FY 2007	0	0	0
FY 2008 [a]	17,207	17,207	0
FY 2009 [a]	39,890	39,890	15,859
FY 2010	70,000	70,000	49,541
FY 2011	57,000	57,000	64,158
FY 2012	17,582	17,582	40,462
FY 2013	48,405	48,405	31,669
FY 2014	0	0	34,628
FY 2015	5,125	5,125	18,892
Total, Construction	TBD	TBD	TBD
TEC			
FY 1999	0	0	0
FY 2000	0	0	0
FY 2001	0	0	0
FY 2002	0	0	0
FY 2003	6,195	6,195	4,610
FY 2004	2,100	2,100	3,114
FY 2005	0	0	0
FY 2006	2,354	2,354	1,003
FY 2007	15,500	15,500	11,745
FY 2008 [a]	33,600	33,600	20,072
FY 2009 [a]	40,000	40,000	17,967
FY 2010	70,000	70,000	49,541

[a] WSB funded within the Weapons Activities appropriation in Directed Stockpile Work.

	(dollars in thousands)		
	Appropriations	Obligations	Costs
FY 2011	57,000	57,000	64,158
FY 2012	17,582	17,582	40,462
FY 2013	48,405	48,405	31,669
FY 2014	0	0	34,628
FY 2015	5,125	5,125	18,892
Total, TEC	TBD	TBD	TBD
Other Project Cost (OPC)			
OPC except D&D			
FY 1999	0	0	0
FY 2000	0	0	0
FY 2001	0	0	0
FY 2002	0	0	0
FY 2003	4,071	4,071	2,650
FY 2004	0	0	1,041
FY 2005	-50	-50	208
FY 2006	1,400	1,400	79
FY 2007	5,060	5,060	2,145
FY 2008 [a]	5,000	5,000	5,415
FY 2009 [a]	7,000	7,000	4,526
FY 2010	7,000	7,000	5,486
FY 2011	21,500	21,500	11,184
FY 2012	6,945	6,945	19,742
FY 2013	25,798	25,798	13,348
FY 2014	20,000	20,000	24,886
FY 2015	0	0	13,014
Total, OPC except D&D	TBD	TBD	TBD
Total OPC	TBD	TBD	TBD
Total Project Cost (TPC)			
FY 1999	0	0	0
FY 2000	0	0	0
FY 2001	0	0	0
FY 2002	0	0	0
FY 2003	10,266	10,266	7,260
FY 2004	2,100	2,100	4,155
FY 2005	-50	-50	208
FY 2006	3,754	3,754	1,082
FY 2007	20,560	20,560	13,890
FY 2008 [a]	38,600	38,600	25,487

[a] WSB funded within the Weapons Activities appropriation in Directed Stockpile Work.

	(dollars in thousands)		
	Appropriations	Obligations	Costs
FY 2009 [a b]	47,000	47,000	22,493
FY 2010 [c]	77,000	77,000	55,027
FY 2011 [d]	78,500	78,500	75,342
FY 2012	24,527	24,527	60,204
FY 2013	74,203	74,203	45,017
FY 2014	20,000	20,000	59,514
FY 2015	5,125	5,125	31,906
Total, TPC	TBD	TBD	TBD

[a] WSB funded within the Weapons Activities appropriation in Directed Stockpile Work.
[b] Includes $1.4M for long-lead procurements.
[c] Includes $14.2M for long-lead procurements.
[d] Includes $11.1M for long-lead procurements.

6. Details of Project Cost Estimate

(dollars in thousands)

	Current Total Estimate [c]	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED)			
Design	42,652	42,652	41,825
Contingency	0	0	717
Total, PED	42,652	42,652	42,542
Construction			
Site Preparation [a]	10,798	10,798	1,300
Equipment [b]	31,359	31,359	42,585
Other Construction	TBD	TBD	118,025
Contingency	TBD	TBD	39,879
Total, Construction	TBD	TBD	201,789
Total, TEC	TBD	TBD	244,331
Contingency, TEC	TBD	TBD	40,596
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	2,650	2,650	2,650
Conceptual Design	27,440	27,440	27,277
Start-up	TBD	TBD	49,500
Other OPC	TBD	TBD	NA
Contingency	TBD	TBD	20,697
Total, OPC except D&D	TBD	TBD	100,124
D&D			
D&D	N/A	N/A	N/A
Contingency	N/A	N/A	N/A
Total, D&D	N/A	N/A	N/A
Total, OPC	TBD	TBD	100,124
Contingency, OPC	TBD	TBD	20,697
Total, TPC	TBD	TBD	344,455
Total, Contingency	TBD	TBD	61,293

[a] Differences between previous and current estimates for site preparation reflect costs that were incorrectly categorized as "other construction" in the original estimate.
[b] Differences in equipment costs are primarily driven by underruns in long-lead equipment contracts.
[c] Reflects the total of the current approved BCP of $414M.

7. Schedule of Appropriation Requests

(dollars in thousands)

		Prior Years	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	Outyears	Total
FY 2008	TEC	0							0
	OPC	42,908							42,908
	TPC	42,908	0	0	0	0	0	0	42,908
FY 2009	TEC	195,469							195,469
	OPC	82,718							82,718
	TPC	278,187	0	0	0	0	0	0	278,187
FY 2010	TEC	244,331							244,331
	OPC	100,124							100,124
	TPC	344,455	0	0	0	0	0	0	344,455
FY 2011	TEC	244,331							244,331
	OPC	100,124							100,124
	TPC	344,455	0	0	0	0	0	0	344,455
FY 2012	TEC	244,331							244,331
	OPC	100,124							100,124
	TPC	344,455	0	0	0	0	0	0	344,455
FY 2012 Reprogramming [a]	TEC	276,535							276,535
	OPC	83,724							83,724
	TPC	360,259	0	0	0	0	0	0	360,259
FY 2014	TEC	294,225	0	0	0	0	0	0	TBD
	OPC	83,724	20,000	0	0	0	0	0	TBD
	TPC	377,949	20,000	0	0	0	0	0	TBD
FY 2015	TEC	292,736	0	5,125	0	0	0	0	TBD
	OPC	83,724	20,000	0	0	0	0	0	TBD
	TPC	376,460	20,000	5,125	0	0	0	0	TBD

8. Related Operations and Maintenance Funding Requirements[b]

99-D-141-02 – Waste Solidification Building

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	TBD
Expected Useful Life (number of years)	TBD
Expected Future Start of D&D of this capital asset (fiscal quarter)	TBD

[a] The FY 2012 reprogramming was executed in FY 2013.
[b] This section will be updated to coincide with the MFFF schedule when it has been defined and approved.

(Related Funding requirements)

99-D-141-02 – Waste Solidification Building

(dollars in thousands)

	Annual Costs		Life Cycle Costs	
	Current Total	Previous Total	Current Total	Previous Total
Operations	0	73,611	0	1,472,220
Maintenance	0	21,901	0	438,020
Total, Operations and Maintenance	0	95,512	0	1,910,240

The WSB life cycle cost has not been updated from the FY 2014 submittal. Upon selecting a preferred option, the Department will commission an independent assessment of the option. This independent assessment will be conducted by an organization external to the Department and its laboratories and will include establishment of life cycle costs, schedules, performance and scope of the selected option.

9. Required D&D Information

Area	Square Feet
Area of new construction	33,000
Area of existing facility(s) being replaced	Not Applicable
Area of additional D&D space to meet the “one-for-one” requirement	Not Applicable

Name(s) and site location(s) of existing facility(s) to be replaced:
The new construction is not replacing an existing facility.

10. Acquisition Approach

99-D-141-02 – Waste Solidification Building
The WSB design service was procured through the SRS M&O contract. Purchase orders for procurement of long-lead equipment for the WSB were issued in FY 2009. The SRS M&O is serving as the construction manager. Fixed-price construction sub-contracts for the WSB were awarded on the basis of competitive bidding. The acquisition strategy has been finalized.

Department Of Energy
FY 2015 Congressional Budget
Funding By Appropriation By Site
($K)

Defense Nuclear Nonproliferation	FY 2013 Current	FY 2014 Enacted	FY 2015 Request
Argonne National Laboratory			
Global Threat Reduction Initiative			
Global Threat Reduction Initiative	74,520	90,750	68,455
Nonproliferation and Verification R&D			
Nonproliferation and Verification R&D	2,201	1,075	1,000
Nonproliferation and International Security			
Nonproliferation and International Security	7,869	7,737	8,359
International Material Protection and Cooperation			
International Material Protection and Cooperation	150	263	150
Total, Argonne National Laboratory	**84,740**	**99,825**	**77,964**
Brookhaven National Laboratory			
Global Threat Reduction Initiative			
Global Threat Reduction Initiative	1,090	886	668
Nonproliferation and Verification R&D			
Nonproliferation and Verification R&D	3,937	2,230	3,000
Nonproliferation and International Security			
Nonproliferation and International Security	5,968	5,377	5,400
International Material Protection and Cooperation			
International Material Protection and Cooperation	7,776	3,936	5,400
Total, Brookhaven National Laboratory	**18,771**	**12,429**	**14,468**
Consolidated Business Center			
Global Threat Reduction Initiative			
Global Threat Reduction Initiative	330	0	0
Total, Consolidated Business Center	**330**	**0**	**0**
Idaho National Laboratory			
Global Threat Reduction Initiative			
Global Threat Reduction Initiative	79,978	61,868	46,668
Nonproliferation and Verification R&D			
Nonproliferation and Verification R&D	6,491	7,782	8,400
Nonproliferation and International Security			
Nonproliferation and International Security	3,903	4,213	4,900
International Material Protection and Cooperation			
International Material Protection and Cooperation	962	460	500
Total, Idaho National Laboratory	**91,334**	**74,323**	**60,468**
Kansas City Plant			
Nonproliferation and International Security			
Nonproliferation and International Security	2,435	1,846	2,800
Total, Kansas City Plant	**2,435**	**1,846**	**2,800**

Department Of Energy
FY 2015 Congressional Budget
Funding By Appropriation By Site
($K)

Defense Nuclear Nonproliferation	FY 2013 Current	FY 2014 Enacted	FY 2015 Request
Lawrence Berkeley National Laboratory			
Nonproliferation and Verification R&D			
Nonproliferation and Verification R&D	5,870	4,221	4,200
Nonproliferation and International Security			
Nonproliferation and International Security	1,026	655	1,000
Total, Lawrence Berkeley National Laboratory	**6,896**	**4,876**	**5,200**
Lawrence Livermore National Laboratory			
Global Threat Reduction Initiative			
Global Threat Reduction Initiative	11,076	6,336	4,779
Nonproliferation and Verification R&D			
Nonproliferation and Verification R&D	28,947	28,269	28,125
Nonproliferation and International Security			
Nonproliferation and International Security	21,250	17,304	20,500
International Material Protection and Cooperation			
International Material Protection and Cooperation	18,906	13,548	16,750
Total, Lawrence Livermore National Laboratory	**80,179**	**65,457**	**70,154**
Los Alamos National Laboratory			
Global Threat Reduction Initiative			
Global Threat Reduction Initiative	31,527	27,945	21,080
Nonproliferation and Verification R&D			
Nonproliferation and Verification R&D	71,651	88,433	86,148
Nonproliferation and International Security			
Nonproliferation and International Security	22,843	21,462	21,700
International Material Protection and Cooperation			
International Material Protection and Cooperation	37,631	27,465	31,500
Fissile Materials Disposition			
Fissile Materials Disposition	40,898	25,000	25,000
Total, Los Alamos National Laboratory	**204,550**	**190,305**	**185,428**
Nevada National Security Site			
Global Threat Reduction Initiative			
Global Threat Reduction Initiative	5,354	2,300	1,735
Nonproliferation and Verification R&D			
Nonproliferation and Verification R&D	68,221	66,875	47,000
International Material Protection and Cooperation			
International Material Protection and Cooperation	427	0	0
Total, Nevada National Security Site	**74,002**	**69,175**	**48,735**
Nevada Site Office			
Nonproliferation and International Security			
Nonproliferation and International Security	67	0	0
Total, Nevada Site Office	**67**	**0**	**0**

Department Of Energy
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($K)

Defense Nuclear Nonproliferation	FY 2013 Current	FY 2014 Enacted	FY 2015 Request
New Brunswick Laboratory			
Nonproliferation and International Security			
Nonproliferation and International Security	687	804	800
International Material Protection and Cooperation			
International Material Protection and Cooperation	30	0	0
Total, New Brunswick Laboratory	**717**	**804**	**800**
NNSA Albuquerque Complex			
Global Threat Reduction Initiative			
Global Threat Reduction Initiative	25,975	26,596	20,062
Nonproliferation and Verification R&D			
Nonproliferation and Verification R&D	9,026	20,265	15,400
Nonproliferation and International Security			
Nonproliferation and International Security	6,412	2,485	3,500
International Material Protection and Cooperation			
International Material Protection and Cooperation	34,268	103,730	47,500
Fissile Materials Disposition			
Fissile Materials Disposition	7,712	750	0
Total, NNSA Albuquerque Complex	**83,393**	**153,826**	**86,462**
Oak Ridge Institute for Science & Education			
International Material Protection and Cooperation			
International Material Protection and Cooperation	71	0	0
Total, Oak Ridge Institute for Science & Education	**71**	**0**	**0**
Oak Ridge National Laboratory			
Global Threat Reduction Initiative			
Global Threat Reduction Initiative	36,252	20,860	15,735
Nonproliferation and Verification R&D			
Nonproliferation and Verification R&D	23,041	17,259	16,550
Nonproliferation and International Security			
Nonproliferation and International Security	20,355	19,946	21,600
International Material Protection and Cooperation			
International Material Protection and Cooperation	44,825	43,496	39,000
Total, Oak Ridge National Laboratory	**124,473**	**101,561**	**92,885**
Oak Ridge National Laboratory Site Office			
Fissile Materials Disposition			
Fissile Materials Disposition	1,228	0	0
Total, Oak Ridge National Laboratory Site Office	**1,228**	**0**	**0**

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($K)

Defense Nuclear Nonproliferation	FY 2013 Current	FY 2014 Enacted	FY 2015 Request
Oak Ridge Office			
Nonproliferation and Verification R&D			
Nonproliferation and Verification R&D	95,633	0	0
Nonproliferation and International Security			
Nonproliferation and International Security	84	0	0
Total, Oak Ridge Office	**95,717**	**0**	**0**
Office of Scientific & Technical Information			
Nonproliferation and Verification R&D			
Nonproliferation and Verification R&D	16	17	6
Total, Office of Scientific & Technical Information	**16**	**17**	**6**
Pacific Northwest National Laboratory			
Global Threat Reduction Initiative			
Global Threat Reduction Initiative	96,081	80,857	60,992
Nonproliferation and Verification R&D			
Nonproliferation and Verification R&D	20,206	19,307	19,063
Nonproliferation and International Security			
Nonproliferation and International Security	18,741	17,493	18,350
International Material Protection and Cooperation			
International Material Protection and Cooperation	182,163	181,731	131,267
Fissile Materials Disposition			
Fissile Materials Disposition	2,771	250	0
Total, Pacific Northwest National Laboratory	**319,962**	**299,638**	**229,672**
Pantex Plant			
Nonproliferation and Verification R&D			
Nonproliferation and Verification R&D	400	300	400
Nonproliferation and International Security			
Nonproliferation and International Security	359	58	50
Total, Pantex Plant	**759**	**358**	**450**
Pantex Site Office			
Fissile Materials Disposition			
Fissile Materials Disposition	6,972	0	5,000
Total, Pantex Site Office	**6,972**	**0**	**5,000**

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($K)

Defense Nuclear Nonproliferation	FY 2013 Current	FY 2014 Enacted	FY 2015 Request
Sandia National Laboratories			
Global Threat Reduction Initiative			
Global Threat Reduction Initiative	40,540	38,133	28,765
Nonproliferation and Verification R&D			
Nonproliferation and Verification R&D	68,828	79,038	77,304
Nonproliferation and International Security			
Nonproliferation and International Security	10,682	10,076	10,200
International Material Protection and Cooperation			
International Material Protection and Cooperation	30,200	28,102	25,000
Total, Sandia National Laboratories	**150,250**	**155,349**	**141,269**
Savannah River National Laboratory			
Nonproliferation and Verification R&D			
Nonproliferation and Verification R&D	7,837	6,758	6,000
Total, Savannah River National Laboratory	**7,837**	**6,758**	**6,000**
Savannah River Operations Office			
Global Threat Reduction Initiative			
Global Threat Reduction Initiative	2,579	10,382	7,831
Nonproliferation and International Security			
Nonproliferation and International Security	6,240	5,172	6,500
International Material Protection and Cooperation			
International Material Protection and Cooperation	761	637	600
Fissile Materials Disposition			
Fissile Materials Disposition	455,182	373,850	221,000
Total, Savannah River Operations Office	**464,762**	**390,041**	**235,931**
Savannah River Site			
Global Threat Reduction Initiative			
Global Threat Reduction Initiative	17,906	27,773	20,950
Fissile Materials Disposition			
Fissile Materials Disposition	48,405	5,000	5,125
Total, Savannah River Site	**66,311**	**32,773**	**26,075**
Savannah River Site Office			
Fissile Materials Disposition			
Fissile Materials Disposition	64,307	54,250	30,000
Total, Savannah River Site Office	**64,307**	**54,250**	**30,000**

Department Of Energy
FY 2015 Congressional Budget
Funding By Appropriation By Site
($K)

Defense Nuclear Nonproliferation	FY 2013 Current	FY 2014 Enacted	FY 2015 Request
Washington Headquarters			
Global Threat Reduction Initiative			
Global Threat Reduction Initiative	16,590	37,891	28,582
Nonproliferation and Verification R&D			
Nonproliferation and Verification R&D	7,806	54,589	45,962
Nonproliferation and International Security			
Nonproliferation and International Security	13,348	12,973	14,500
International Material Protection and Cooperation			
International Material Protection and Cooperation	167,221	13,845	6,300
Fissile Materials Disposition			
Fissile Materials Disposition	10,378	38,824	0
Legacy Contractor Pensions			
Legacy Contractor Pensions	51,438	93,703	102,909
Total, Washington Headquarters	**266,781**	**251,825**	**198,253**
Y-12 National Security Complex			
Global Threat Reduction Initiative			
Global Threat Reduction Initiative	23,094	9,525	7,186
Nonproliferation and International Security			
Nonproliferation and International Security	837	1,074	1,200
International Material Protection and Cooperation			
International Material Protection and Cooperation	2,534	2,412	1,500
Fissile Materials Disposition			
Fissile Materials Disposition	25,901	28,008	25,000
Total, Y-12 National Security Complex	**52,366**	**41,019**	**34,886**
Y-12 Site Office			
Nonproliferation and Verification R&D			
Nonproliferation and Verification R&D	398	2,420	2,250
Fissile Materials Disposition			
Fissile Materials Disposition	0	125	0
Total, Y-12 Site Office	**398**	**2,545**	**2,250**
Total, Defense Nuclear Nonproliferation	**2,269,624**	**2,009,000**	**1,555,156**

Naval Reactors

Naval Reactors

Naval Reactors
Proposed Appropriation Language

For Department of Energy expenses necessary for naval reactors activities to carry out the Department of Energy Organization Act (42 U.S.C. 7101 et seq.), including the acquisition (by purchase, condemnation, construction, or otherwise) of real property, plant, and capital equipment, facilities, and facility expansion, $1,377,100,000, to remain available until expended: Provided, that $46,600,000 shall be available until September 30, 2016 for program direction.

Explanation of Changes

Change from the language proposed in FY 2014 consists of a change to the requested funding amount and time availability of program direction funding.

Public Law Authorizations

P.L. 83-703, "Atomic Energy Act of 1954"
"Executive Order 12344 (42 U.S.C. 7158), "Naval Nuclear Propulsion Program"
P.L. 106-65, National Nuclear Security Administration Act, as amended
P.L. 113-66, National Defense Authorization Act for Fiscal Year 2014
P.L. 113-76, Consolidated Appropriations Act 2014

Naval Reactors

(Dollars in Thousands)

FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Request
994,118	1,095,000	1,095,000	1,377,100

Overview (U)

The Naval Reactors (NR) appropriation includes funding for activities that respond directly to the National Security Strategy of the United States, and are central to the Department of Energy's pursuit of its Strategic Plan goal of Nuclear Security, playing a critical role in meeting DOE's Strategic Objective 7 to provide safe and effective integrated nuclear propulsion systems for the U.S. Navy. Specifically, NR is responsible for all U.S. Navy nuclear propulsion work, beginning with reactor plant technology development and design, continuing through reactor plant operation and maintenance, and ending with reactor plant disposal. The program ensures the safe and reliable operation of reactor plants in nuclear-powered submarines and aircraft carriers (constituting over 40 percent of the Navy's major combatants) and fulfills the Navy's requirements for new nuclear propulsion plants that meet current and future national defense requirements.

Naval Reactors' mission includes ensuring the safety of reactors and associated naval nuclear propulsion plants, and control of radiation and radioactivity associated with naval nuclear propulsion activities, including prescribing and enforcing standards and regulations for these areas, as they affect the environment and the safety and health of workers, operators, and the general public. Naval Reactors maintains oversight in areas such as security, nuclear safeguards and transportation, radiological controls, public information, procurement, logistics, and fiscal management.

As part of the National Nuclear Security Administration (NNSA), Naval Reactors is working to provide the U.S. Navy with nuclear propulsion plants that are capable of responding to the challenges of the 21st century security environment.

Highlights and Major Changes in the FY 2015 Budget Request (U)

Naval Reactors' request of $1,377,100 in Fiscal Year 2015 is for continued achievement of its core objective of ensuring the safe and reliable operation of the Nation's nuclear fleet. This Budget Request is consistent with the outcome of the 2012 joint DOE/Department of Defense Office of Cost Assessment and Program Evaluation review and supports three major projects: *Ohio* Replacement, Land-based Prototype Refueling Overhaul, and Spent Fuel Handling Recapitalization Project.

Major Outyear Priorities and Assumptions (U)

The outyear funding (FY 2016 through FY 2019) for Naval Reactors is $5,275,754,000. Outyear funding supports Naval Reactors' core mission of providing proper maintenance and safety oversight, and addressing emergent operational issues and technology obsolescence for all 96 operating reactor plants. This includes 72 submarines, 10 aircraft carriers, and 4 research, development, and training platforms (including the land-based prototypes). Outyear funding also supports Naval Reactors' continued achievement of ongoing new plant design projects, as well as continued achievement of its legacy responsibilities, such as ensuring proper management of naval spent nuclear fuel, prudent recapitalization of aging facilities, and cleanup of environmental liabilities.

Department of Energy (DOE) Working Capital Fund (WCF) Support (U)

The Naval Reactors appropriation projected contribution to the DOE WCF for FY 2015 is $3,884,000. This funding covers certain shared enterprise activities including managing enterprise-wide systems and data, telecommunications and supporting the integrated acquisition environment.

Contractor Pensions (U)

In FY 2015, for the Bettis and Knolls Laboratories, Naval Reactors' planned DOE-funded qualified contractor pension contribution is $58,630,000 and non-qualified contractor pension contribution is $864,000.

Naval Reactors
Funding by Congressional Control [a]

(Dollars in Thousands)

	FY 2013 Current	FY 2014 Enacted	FY 2014 Adjustments	FY 2014 Current	FY 2015 Request	FY 2015 vs FY 2014 Enacted
Naval Reactors						
Naval Reactors Operations and Infrastructure	352,535	356,300	0	356,300	412,380	+56,080
Naval Reactors Development	404,879	414,298	0	414,298	425,700	+11,402
S8G Prototype Refueling	112,100	144,400	0	144,400	126,400	-18,000
Ohio Replacement Reactor Systems Development	81,300	126,400	0	126,400	156,100	+29,700
Program Direction	43,212	43,212	0	43,212	46,600	+3,388
Construction	92	24,373	0	24,373	209,920	+185,547
Subtotal, Naval Reactors	**994,118**	**1,108,983**	**0**	**1,108,983**	**1,377,100**	**+268,117**
Use of Prior Year Balances	0	-13,983	0	-13,983	0	+13,983
Total, Naval Reactors	**994,118**	**1,095,000**	**0**	**1,095,000**	**1,377,100**	**+282,100**

Outyears for Naval Reactors[a]

(Dollars in Thousands)

	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Naval Reactors				
Naval Reactors Operations and Infrastructure	441,200	457,863	467,616	534,999
Naval Reactors Development	446,000	441,700	466,600	498,200
S8G Prototype Refueling	133,000	124,000	190,000	250,000
Ohio Replacement Reactor Systems Development	168,896	181,357	126,035	13,088
Program Direction	48,900	51,300	53,800	56,400
Construction	33,500	46,900	30,700	13,700
Total, Naval Reactors	**1,271,496**	**1,303,120**	**1,334,751**	**1,366,387**

[a] The annual total includes an allocation to NNSA from the Department of Defense's five year budget plan. The amount included for Naval Reactors is $248,858,000 in FY 2015, $313,549,000 in FY 2016, $469,503,000 in FY 2017, $393,440,000 in FY 2018, and $402,204,000 in 2019.

Naval Reactors
Funding

(Dollars in Thousands)

	FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Request	FY 2015 vs FY 2014 Enacted
Naval Reactors					
Naval Reactors Operations and Infrastructure					
Research Reactor Facility Operations & Maintenance	98,230	85,449	85,449	119,279	+33,830
Laboratory Facility Regulation, Compliance, & Protection	45,133	83,140	83,140	78,608	-4,532
Nuclear Spent Fuel Management	146,838	132,136	132,136	130,000	-2,136
Radiological/Environmental Remediation & Demolition	56,134	55,575	55,575	57,590	+2,015
Capital Equipment	3,300	0	0	2,522	+2,522
General Plant Projects	2,900	0	0	24,381	+24,381
Total, Naval Reactors Operations and Infrastructure	**352,535**	**356,300**	**356,300**	**412,380**	**+56,080**
Naval Reactors Development					
Ship Construction & Maintenance Support	62,150	67,913	67,913	62,822	-5,091
Nuclear Reactor Technology	136,851	99,469	99,469	116,818	+17,349
Reactor Systems & Component Technology	147,750	180,416	180,416	177,644	-2,772
Advanced Test Reactor Operations	58,128	66,500	66,500	66,000	-500
Capital Equipment	0	0	0	2,416	+2,416
Total, Naval Reactors Development	**404,879**	**414,298**	**414,298**	**425,700**	**+11,402**
S8G Prototype Refueling	**112,100**	**144,400**	**144,400**	**126,400**	**-18,000**
***Ohio* Replacement Reactor Systems Development**	**81,300**	**126,400**	**126,400**	**156,100**	**+29,700**
Program Direction	**43,212**	**43,212**	**43,212**	**46,600**	**+3,388**
Construction	**92**	**24,373**	**24,373**	**209,920**	**+185,547**
Subtotal, Naval Reactors	**994,118**	**1,108,983**	**1,108,983**	**1,377,100**	**+268,117**
Use of Prior Year Balances	0	-13,983	-13,983	0	+13,983
Total, Naval Reactors	**994,118**	**1,095,000**	**1,095,000**	**1,377,100**	**+282,100**

Outyears for Naval Reactors

	(Dollars in Thousands)			
Naval Reactors	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Naval Reactors Operations and Infrastructure				
Research Reactor Facility Operations & Maintenance	143,690	154,422	136,221	148,374
Laboratory Facility Regulation, Compliance, & Protection	91,787	87,075	89,794	97,384
Nuclear Spent Fuel Management	134,251	130,881	146,743	157,828
Radiological/Environmental Remediation & Demolition	59,135	58,651	62,254	74,296
Capital Equipment	3,084	2,758	4,748	0
General Plant Projects	9,253	24,076	27,856	57,117
Total, Naval Reactors Operations and Infrastructure	**441,200**	**457,863**	**467,616**	**534,999**
Naval Reactors Development				
Ship Construction & Maintenance Support	44,755	38,716	39,075	40,820
Nuclear Reactor Technology	134,161	138,391	146,897	161,522
Reactor Systems & Component Technology	185,279	190,117	190,986	209,604
Advanced Test Reactor Operations	67,200	68,600	70,000	71,400
Capital Equipment	14,605	5,876	19,642	14,854
Total, Naval Reactors Development	**446,000**	**441,700**	**466,600**	**498,200**
S8G Prototype Refueling	**133,000**	**124,000**	**190,000**	**250,000**
***Ohio* Replacement Reactor Systems Development**	**168,896**	**181,357**	**126,035**	**13,088**
Program Direction	**48,900**	**51,300**	**53,800**	**56,400**
Construction	**33,500**	**46,900**	**30,700**	**13,700**
Total, Naval Reactors	**1,271,496**	**1,303,120**	**1,334,751**	**1,366,387**

Naval Reactors
Explanation of Major Changes
(Dollars in Thousands)

	FY 2015 vs FY 2014 Enacted
Naval Reactors	
Naval Reactors Operations and Infrastructure: This funding increase (16%) will support critical prototype maintenance, facility and systems maintenance across the Program's four DOE sites, and necessary general plant projects to recapitalize aging infrastructure.	**+56,080**
Naval Reactors Development: This increase (+2.8%) is primarily due to the establishment of a capital equipment subprogram to support equipment procurement for subcategories within Naval Reactors Development and a general inflationary increase.	**+11,402**
S8G Prototype Refueling: Technology development and equipment designs continue throughout FY 2015 in parallel with early production activities at the reactor and equipment vendors (e.g., advanced material, reactor heavy equipment). The FY 2015 funding request decreases (by 12.5%) as major development efforts and designs complete and efforts transition to supporting production and performing analysis needed to support future operation. This decrease is consistent with the project's planned funding profile.	**-18,000**
***Ohio* Replacement Reactor Systems Development:** Reflects an increase (23%) to support reactor plant system and long lead time component development and production plans. This increase is consistent with the project's planned funding profile.	**+29,700**
Program Direction: This increase (7.8%) reflects a general inflationary increase for personnel and pay related costs to attract and retain highly qualified and experienced engineering personnel.	**+3,388**
Construction: This increase (+761%) primarily reflects funding for the Spent Fuel Handling Recapitalization Project, Security Upgrades, KS Radiological Work and Storage Building, and KS Central Office and Prototype Staff Facility.	**+185,547**
Total, Naval Reactors	**+268,117**

Naval Reactors Performance Measures

In accordance with the GPRA Modernization Act of 2010, the Department sets targets for, and tracks progress toward, achieving performance goals for each program. For more information, refer to the Department's FY 2013 Annual Performance Report.

	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
A1B Reactor Plant Design – Cumulative percentage of completion on the next-generation aircraft carrier reactor plant design.							
Target	98% complete	99% complete	100% complete	N/A	N/A	N/A	N/A
Result	**Met** - 98						
Endpoint Target	By the end of FY 2015, complete 100% of the design of the reactor plant for the next-generation aircraft carrier.						
S1B Reactor Plant Design – Cumulative percentage of work complete on the *Ohio* Replacement submarine reactor plant design.							
Target	17% complete	22% complete	32% complete	43% complete	55% complete	65% complete	74% complete
Result	**Exceeded** – 18.4						
Endpoint Target	By the end of FY 2027, complete 100% of the *Ohio* Replacement submarine reactor plant design. Note: In FY2013, DoD delayed construction start for the lead ship by two years (from FY 2019 to FY 2021) and reactor plant advanced procurement from FY 2017 to FY 2019.						

Naval Reactors
Program Direction

Description

Due to the essential nature of nuclear reactor work, Naval Reactors provides centrally controlled, technical management of all program operations. Federal employees directly oversee and set policies and procedures for developing new reactor plants, operating existing reactor plants, facilities supporting these plants, contractors, and the Bettis and Knolls Atomic Power Laboratories. In addition, these employees interface with other DOE offices and local, state, and Federal regulatory agencies.

Naval Reactors' Federal employees are typically recruited from a community of highly-trained military engineers who have completed a rigorous five-year on-the-job training program unique to Naval Reactors. This training program has groomed engineers with skill sets far beyond that of nuclear engineers found in the commercial and Federal sectors.

Travel funds are used to perform oversight activities of facilities located worldwide that require comprehensive audits and in-person visits to ensure compliance and safety. Additionally, Naval Reactors Representative positions at the field sites (to include locations in the United Kingdom, Japan, Hawaii, and the continental U.S.) rotate periodically due to retirements, attrition, and succession planning.

Other Related Expenses includes the maintenance of Naval Reactors' IT hardware, engineering software, and related licenses supporting mission-essential technical work. Additionally, these funds will support planned upgrades and maintenance of video teleconferencing equipment, security investigations of Federal personnel, and training requirements.

Highlights and Major Changes in the FY 2015 Budget Request

The Naval Reactors Program Direction budget reflects general inflationary increase for personnel and pay related costs. Despite recent and planned retirements that have resulted in a loss of NR's engineering experience.

FY 2016-FY 2019 Key Milestones

NR plans to actively manage knowledge transfer without increasing the number of full-time equivalents.

Program Direction
Funding

	(Dollars in Thousands)				
	FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Request	FY 2015 vs FY 2014 Enacted
Naval Reactors					
Headquarters					
Salaries and Benefits	20,200	20,697	20,697	22,600	+1,903
Travel	775	1,000	1,000	1,100	+100
Other Related Expenses	3,727	3,000	3,000	2,800	-200
Total, Headquarters	**24,702**	**24,697**	**24,697**	**26,500**	**+1,803**
Naval Reactors Laboratory Field Office					
Salaries and Benefits	17,100	16,615	16,615	17,500	+885
Travel	410	700	700	800	+100
Other Related Expenses	1,000	1,200	1,200	1,800	+600
Total, Naval Reactors Laboratory Field Office	**18,510**	**18,515**	**18,515**	**20,100**	**+1,585**
Total Program Direction					
Salaries and Benefits	37,300	37,312	37,312	40,100	+2,788
Travel	1,185	1,700	1,700	1,900	+200
Other Related Expenses	4,727	4,200	4,200	4,600	+400
Total, Program Direction	**43,212**	**43,212**	**43,212**	**46,600**	**+3,388**
Federal FTEs	**238**	**238**	**238**	**238**	

Other Related Expenses

(Dollars in Thousands)

	FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Request	FY 2015 vs FY 2014 Enacted
Other Related Expenses					
Transportation	740	730	730	790	+60
Communications; Utilities and Miscellaneous Charges	320	340	340	380	+40
Other Services from Federal Sources	730	740	740	790	+50
Advisory and Assistance Services	300	300	300	330	+30
Operation and Maintenance of Facilities	200	210	210	240	+30
Operation and Maintenance of Equipment	550	520	520	570	+50
Supplies and Materials	200	200	200	230	+30
Equipment	1,687	1,160	1,160	1,270	+110
Total, Other Related Expenses	**4,727**	**4,200**	**4,200**	**4,600**	**+400**

Outyears Program Direction for Naval Reactors

	(Dollars in Thousands)			
	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Naval Reactors				
Headquarters				
Salaries and Benefits	23,600	24,600	25,500	26,700
Travel	1,100	1,100	1,100	1,200
Other Related Expenses	3,400	3,800	4,600	5,000
Total, Headquarters	**28,100**	**29,500**	**31,200**	**32,900**
Naval Reactors Laboratory Field Office				
Salaries and Benefits	18,200	19,000	19,800	20,600
Travel	800	900	900	900
Other Related Expenses	1,800	1,900	1,900	2,000
Total, Naval Reactors Laboratory Field Office	**20,800**	**21,800**	**22,600**	**23,500**
Total Program Direction				
Salaries and Benefits	41,800	43,600	45,300	47,300
Travel	1,900	2,000	2,000	2,100
Other Related Expenses	5,200	5,700	6,500	7,000
Total, Program Direction	**48,900**	**51,300**	**53,800**	**56,400**
Federal FTEs	**238**	**238**	**238**	**238**

Outyears Other Related Expenses for Naval Reactors

	(Dollars in Thousands)			
	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Other Related Expenses				
Transportation of Things	880	910	970	1,020
Communications; Utilities and Miscellaneous Charges	410	430	470	500
Other Services from Federal Sources	900	950	1,030	1,060
Advisory and Assistance Services	360	380	420	460
Operation and Maintenance of Facilities	260	280	330	370
Operation and Maintenance of Equipment	730	860	1,050	1,160
Supplies and Materials	270	300	350	390
Equipment	1,390	1,590	1,880	2,040
Total, Other Related Expenses	**5,200**	**5,700**	**6,500**	**7,000**

Activities and Explanation of Changes

FY 2014 Enacted	FY 2015 Request	Explanation of Changes FY 2015 vs FY 2014 Enacted
Salaries and Benefits		
• Federal salaries and benefits for employees that directly oversee and set policies and procedures for developing new reactor plants, operating existing reactor plants, facilities supporting these plants, contractors, and the Bettis and Knolls Atomic Power Laboratories.	• Federal salaries and benefits for employees that directly oversee and set policies and procedures for developing new reactor plants, operating existing reactor plants, facilities supporting these plants, contractors, and the Bettis and Knolls Atomic Power Laboratories.	• Reflects general inflationary increase for personnel and pay related costs.
Travel		
• Perform oversight activities of facilities located worldwide that require comprehensive audits and in-person visits to ensure compliance and safety. • Rotation of Naval Reactors Representatives at the field sites (U.K., Japan, Hawaii, and the continental U.S.) due to retirement, attrition, and succession planning.	• Perform oversight activities of facilities located worldwide that require comprehensive audits and in-person visits to ensure compliance and safety. • Rotation of Naval Reactors Representatives at the field sites (U.K., Japan, Hawaii, and the continental U.S.) due to retirement, attrition, and succession planning.	• Reflects general inflationary increase for personnel and pay related costs.
Other Related Expenses		
• Maintenance of Naval Reactors' IT hardware, engineering software, and related licenses supporting mission essential technical work. • Support planned upgrades and maintenance of video teleconferencing equipment, security investigation of Federal personnel, and training requirements.	• Maintenance of Naval Reactors' IT hardware, engineering software, and related licenses supporting mission essential technical work. • Support planned upgrades and maintenance of video teleconferencing equipment, security investigation of Federal personnel, and training requirements.	• Reflects general inflationary increase for personnel and pay related costs.

Naval Reactors
Capital Summary

(Dollars in Thousands)

	Total	Prior Years	FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Request	FY 2015 vs FY 2014 Enacted
Capital Operating Expenses Summary (including Major Items of Equipment (MIE))							
Capital Equipment >$500K (including MIE)	46,400	4,100	15,050	6,850	6,850	17,038	+10,188
General Plant Projects (GPP) (<$10M)	0	0	2,900	0	0	24,381	+24,381
Total, Capital Operating Expenses	**46,400**	**4,100**	**17,950**	**6,850**	**6,850**	**41,419**	**+34,569**
Capital Equipment > $500K (including MIE)							
Naval Reactors Operations and Infrastructure	0	0	3,300	0	0	1,522	+1,522
Laboratory Network Upgrade	7,000	0	0	0	0	1,000	+1,000
Naval Reactors Development[a]	0	0	0	0	0	2,416	+2,416
Land-based Prototype Ringer Crane Replacement	11,000	0	0	0	0	11,000	+11,000
Land-based Prototype Rod Control Equipment	10,500	1,300	3,700	3,700	3,700	0	-3,700
Land-Based Prototype Instrumentation and Control	17,900	2,800	8,050	3,150	3,150	1,100	-2,050
Total, Capital Equipment (including MIE)	**46,400**	**4,100**	**15,050**	**6,850**	**6,850**	**17,038**	**+10,188**
General Plant Projects (GPP) (Total Estimated Cost (TEC) <$10M)							
Total General Plant Projects (GPP) (Total Estimated Cost (TEC) >$5M)	0	0	0	0	0	14,500	+14,500
Total General Plant Projects (GPP) (Total Estimated Cost (TEC) <$5M)	0	0	2,900	0	0	9,881	+9,881
Total, General Plant Projects (GPP) (Total Estimated Cost (TEC) <$10M)	**0**	**0**	**2,900**	**0**	**0**	**24,381**	**+24,381**
Total, Capital Summary	**46,400**	**4,100**	**17,950**	**6,850**	**6,850**	**41,419**	**+34,569**

[a] In FY 2015 Naval Reactors established a capital equipment subcategory that supports efforts within Naval Reactors Development.

Outyears for Naval Reactors

	(Dollars in Thousands)			
	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request
Capital Operating Expenses Summary (including Major Items of Equipment (MIE))				
Capital Equipment >$500K (including MIE)	21,319	8,814	25,180	14,854
General Plant Projects (GPP) (<$10M)	9,253	24,076	27,856	57,117
Total, Capital Operating Expenses	**30,572**	**32,890**	**53,036**	**71,971**
Capital Equipment > $500K (including MIE)				
Naval Reactors Operations and Infrastructure	1,084	758	2,748	0
Laboratory Network Upgrade	2,000	2,000	2,000	0
Naval Reactors Development	3,605	5,876	8,642	14,854
High Performance Computers (FY 2016 Buy)	11,000	0	0	0
High Performance Computers (FY 2018 Buy)	0	0	11,000	0
Land-based Prototype Rod Control Equipment	1,800	0	0	0
Land-Based Prototype Instrumentation and Control	1,830	180	790	0
Total, Capital Equipment (including MIE)	**21,319**	**8,814**	**25,180**	**14,854**
General Plant Projects (GPP) (Total Estimated Cost (TEC) <$10M)				
Total General Plant Projects (GPP) (Total Estimated Cost (TEC) >$5M)	0	360	600	18,415
Total General Plant Projects (GPP) (Total Estimated Cost (TEC) <$5M)	9,253	23,716	27,256	38,702
Total, General Plant Projects (GPP) (Total Estimated Cost (TEC) <$10M)	**9,253**	**24,076**	**27,856**	**57,117**
Total, Capital Summary	**30,572**	**32,890**	**53,036**	**71,971**

Naval Reactors
Construction Projects Summary

(Dollars in Thousands)

	Total	Prior Years	FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Request	FY 2015 vs FY 2014 Enacted
08-D-190, ECF M-290 Receiving/Discharge Station, NRF							
Total Estimated Cost (TEC)	65,195	63,095	0	1,700	1,700	400	-1,300
Other Project Cost (OPC)	4,423	3,366	297	260	260	500	+240
TPC, 08-D-190, ECF M-290 Receiving/Discharge Station, NRF	**69,618**	**66,461**	**297**	**1,960**	**1,960**	**900**	**-1,060**
10-D-903, Security Upgrades, KAPL							
Total Estimated Cost (TEC)	22,891	1,999	92	0	0	7,400	+7,400
Other Project Cost (OPC)	3,189	1,600	328	0	0	0	+0
TPC, 10-D-903, Security Upgrades, KAPL	**26,080**	**3,599**	**420**	**0**	**0**	**7,400**	**+7,400**
13-D-905, Remote-Handled Low-Level Waste Disposal Project [a]							
Total Estimated Cost (TEC)	35,493	0	0	21,073	21,073	14,420	-6,653
Other Project Cost (OPC)	7,970	0	1,310	1,075	1,075	570	-505
TPC, 13-D-905, Remote-Handled Low-Level Waste Disposal Project	**43,463**	**0**	**1,310**	**22,148**	**22,148**	**14,990**	**-7,158**

[a] The Remote-Handled Low-Level Waste Disposal Project is funded jointly between Naval Reactors and DOE's Office of Nuclear Energy (DOE-NE). The Total Estimated Cost represents the Naval Reactors' contribution. For additional details see the associated Project Data Sheet.

	(Dollars in Thousands)						
	Total	Prior Years	FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Request	FY 2015 vs FY 2014 Enacted
13-D-904, KS Radiological Work and Storage Building[a]							
Total Estimated Cost (TEC)	20,700	0	0	600	600	20,100	+19,500
Other Project Cost (OPC)	1,000	200	100	100	100	100	+0
TPC, 13-D-904, KS Radiological Work and Storage Building	**21,700**	**200**	**100**	**700**	**700**	**20,200**	**+19,500**
14-D-901, Spent Fuel Handling Recapitalization Project[b]							
Total Estimated Cost (TEC)	141,100	0	0	0	0	141,100	+141,100
Other Project Cost (OPC)	125,000	67,900	28,600	24,600	24,600	3,900	-20,700
TPC, 14-D-901, Spent Fuel Handling Recapitalization Project	**266,100**	**67,900**	**28,600**	**24,600**	**24,600**	**145,000**	**+120,400**
14-D-902, KL Materials Characterization Laboratory							
Total Estimated Cost (TEC)	31,000	0	0	1,000	1,000	0	-1,000
Other Project Cost (OPC)	7,282	200	400	700	700	2,900	+2,200
TPC, 14-D-902, KL Materials Characterization Laboratory	**38,282**	**200**	**400**	**1,700**	**1,700**	**2,900**	**+1,200**
15-D-901, KS Central Office and Prototype Staff Facility							
Total Estimated Cost (TEC)	24,000	0	0	0	0	24,000	+24,000
Other Project Cost (OPC)	850	0	50	500	500	300	-200
TPC, 15-D-901, KS Central Office and Prototype Staff Facility	**24,850**	**0**	**50**	**500**	**500**	**24,300**	**+23,800**

[a] The KS Radiological Work and Storage Building FY 2015 MCP funds ($20.1 million) support and are attributable to both the Land-based Prototype Refueling Overhaul ($11.6 million) and other site defueling operations ($8.5 million).

[b] The FY 2014 Consolidated Appropriations Act did not include major construction project funding for the Spent Fuel Handling Recapitalization Project; therefore, a new schedule and funding profile for this Project is currently under development.

	(Dollars in Thousands)						
	Total	Prior Years	FY 2013 Current	FY 2014 Enacted	FY 2014 Current	FY 2015 Request	FY 2015 vs FY 2014 Enacted
15-D-902, KS Engineroom Team Trainer Facility							
Total Estimated Cost (TEC)	36,300	0	0	0	0	1,500	+1,500
Other Project Cost (OPC)	2,200	0	200	0	0	700	+700
TPC, 15-D-902, KS Engineroom Team Trainer Facility	**38,500**	**0**	**200**	**0**	**0**	**2,200**	**+2,200**
15-D-903, KL Fire System Upgrade							
Total Estimated Cost (TEC)	16,200	0	0	0	0	600	+600
Other Project Cost (OPC)	1,200	0	300	300	300	0	-300
TPC, 15-D-903, KL Fire System Upgrade	**17,400**	**0**	**300**	**300**	**300**	**600**	**+300**
15-D-904, NRF Overpack Storage Expansion 3							
Total Estimated Cost (TEC)	15,700	0	0	0	0	400	+400
Other Project Cost (OPC)	400	0	0	250	250	0	-250
TPC, 15-D-904, NRF Overpack Storage Expansion 3	**16,100**	**0**	**0**	**250**	**250**	**400**	**+150**
Total All Construction Projects							
Total Estimated Cost (TEC)	408,579	65,094	92	24,373	24,373	209,920	+185,547
Other Project Cost (OPC)	178,032	73,266	31,585	27,785	27,785	8,970	-18,815
TPC, All Construction Projects	**562,093**	**138,360**	**31,677**	**52,158**	**52,158**	**218,890**	**+166,732**

Outyears to Completion for Naval Reactors

(Dollars in Thousands)

	FY 2016 Request	FY 2017 Request	FY 2018 Request	FY 2019 Request	Outyears to Completion
19-D-XXX, BL Fire System Upgrade					
Total Estimated Cost (TEC)	0	0	0	13,200	0
Other Project Cost (OPC)	0	200	0	200	300
TPC, 19-D-XXX, BL Fire System Upgrade	**0**	**200**	**0**	**13,400**	**300**
18-D-XXX, KL Fuel Development Laboratory					
Total Estimated Cost (TEC)	0	0	2,000	500	31,000
Other Project Cost (OPC)	400	0	100	200	1,000
TPC, 18-D-XXX, KL Fuel Development Laboratory	**400**	**0**	**2,100**	**700**	**32,000**
15-D-902, KS Engineroom Team Trainer Facility					
Total Estimated Cost (TEC)	1,500	33,300	0	0	0
Other Project Cost (OPC)	1,000	300	0	0	0
TPC, 15-D-902, KS Engineroom Team Trainer Facility	**2,500**	**33,600**	**0**	**0**	**0**
15-D-903, KL Fire System Upgrade					
Total Estimated Cost (TEC)	600	0	15,000	0	0
Other Project Cost (OPC)	0	0	600	0	0
TPC, 15-D-903, KL Fire System Upgrade	**600**	**0**	**15,600**	**0**	**0**
15-D-904, NRF Overpack Storage Expansion 3					
Total Estimated Cost (TEC)	900	700	13,700	0	0
Other Project Cost (OPC)	0	0	50	100	0
TPC, 15-D-904, NRF Overpack Storage Expansion 3	**900**	**700**	**13,750**	**100**	**0**
14-D-902, KL Material Characterization Laboratory					
Total Estimated Cost (TEC)	30,000	0	0	0	0
Other Project Cost (OPC)	3,000	0	0	82	0
TPC, 14-D-902, KL Material Characterization Laboratory	**33,000**	**0**	**0**	**82**	**0**

	(Dollars in Thousands)				
	FY 2016 Request	**FY 2017 Request**	**FY 2018 Request**	**FY 2019 Request**	**Outyears to Completion**
14-D-901, Spent Fuel Handling Recapitalization Project [a]					
Total Estimated Cost (TEC)	0	0	0	0	0
Other Project Cost (OPC)	0	0	0	0	0
TPC, 14-D-901, Spent Fuel Handling Recapitalization Project	**0**	**0**	**0**	**0**	**0**
10-D-903, Security Upgrades, KAPL					
Total Estimated Cost (TEC)	500	12,900	0	0	0
Other Project Cost (OPC)	200	361	350	350	0
TPC, 10-D-903, Security Upgrades, KAPL	**700**	**13,261**	**350**	**350**	**0**
Total All Construction Projects					
Total Estimated Cost (TEC)	33,500	46,900	30,700	13,700	31,000
Other Project Cost (OPC)	4,600	861	1,100	932	1,300
TPC, All Construction Projects	**38,100**	**47,761**	**31,800**	**14,632**	**32,300**

[a] A The FY 2014 Consolidated Appropriations Act did not include major construction project funding for the Spent Fuel Handling Recapitalization Project; therefore, a new schedule and funding profile for this Project is currently under development.

Research and Development

The Office of Management and Budget (OMB) Circular No. A-11, "Preparation, Submission, and Execution of the Budget," dated July 2013, requires the reporting of research and development (R&D) data. Consistent with this requirement, R&D activities funded by NNSA are displayed below.

(Dollars in Thousands)

	FY 2013 Current	FY 2014 Enacted	FY 2015 Request	FY 2015 vs FY 2014 Enacted
Research and Development (R&D)				
Development	935,764	965,521	1,079,161	+113,640
Subtotal, R&D	**935,764**	**965,521**	**1,079,161**	**+113,640**
Equipment	15,050	27,894	17,038	-10,856
Construction	92	58,373	234,301	+175,928
Total, R&D	**950,906**	**1,051,788**	**1,330,500**	**+278,712**

15-D-904, NRF Overpack Storage Expansion 3,
Naval Reactors Facility, Idaho
Project is for Design and Construction

1. Summary and Significant Changes

The most recent DOE O 413.3B approved Critical Decision (CD) is CD-0, Approve Mission Need, which was approved on April 23, 2012, with a Total Project Cost of $16,100 and a CD-4 of 3Q FY2019.

A Federal Project Director has been assigned to this project.

This Project Data Sheet (PDS) does include a new start for the budget year.

This PDS is new.

2. Critical Decision (CD) and D&D Schedule

(Fiscal Quarter or Date)

	CD-0	CD-1	Design Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2015	4/23/2012	2Q FY2015	1Q FY2017	2Q FY2016	2Q FY 2017	3Q FY2019	N/A	N/A

CD-0 – Approve Mission Need
CD-1 – Approve Alternative Selection and Cost Range
CD-2 – Approve Performance Baseline
CD-3 – Approve Start of Construction
CD-4 – Approve Start of Operations or Project Closeout
D&D Start – Start of Demolition & Decontamination (D&D) work
D&D Complete – Completion of D&D work

3. Baseline and Validation Status

(Dollars in Thousands)

	TEC, Design	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2015	1,300	14,400	15,700	400	N/A	400	16,100

4. Project Description, Scope, and Justification

Mission Need
By FY 2022, NRF will have exhausted its planned overpack storage areas, which are used to store packaged, naval spent nuclear fuel until a national spent fuel repository is available.

Scope and Justification – 15-D-902, NRF Overpack Storage Expansion 3
This project constructs a building to temporarily store overpacks loaded with naval spent nuclear fuel canisters until a national spent fuel management plan is approved. By FY 2022, NRF will have exhausted its planned overpack storage area and the new storage facility is needed to support dry fuel processing throughput and avoid disruption of dry fuel processing activities. Uninterrupted dry fuel processing is necessary to support defueling and refueling of the naval nuclear fleet and ensure naval operational readiness is not jeopardized.

NRF is the sole facility in the Naval Nuclear Propulsion Program which has the facilities, equipment, and established processes for processing naval spent nuclear fuel for transportation to a national spent fuel repository. The processing of naval spent nuclear fuel into containers is also required to meet legal agreements with the State of Idaho.

The project is being conducted in accordance with the NR Implementation Bulletin for DOE O 413.3B, Program and Project Management for the Acquisition of Capital Assets, and all appropriate project management requirements have been met.

5. Financial Schedule

	(Dollars in Thousands)		
	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2015	400	400	400
FY 2016	900	900	900
Total, Design	1,300	1,300	1,300
Construction			
FY 2017	700 [a]	700 [a]	700 [a]
FY 2018	13,700	13,700	13,700
Total, Construction	14,400	14,400	14,400
TEC			
FY 2015	400	400	400
FY 2016	900	900	900
FY 2017	700 [a]	700 [a]	700 [a]
FY 2018	13,700	13,700	13,700
Total, TEC	15,700	15,700	15,700
Other Project Cost (OPC)			
OPC except D&D			
FY 2014	250	250	250
FY 2015	0	0	0
FY 2016	0	0	0
FY 2017	0	0	0
FY 2018	50	50	50
FY 2019	100	100	100
Total, OPC except D&D	400	400	400
D&D	N/A	N/A	N/A
Total, D&D	N/A	N/A	N/A
OPC			
FY 2014	250	250	250
FY 2015	0	0	0
FY 2016	0	0	0
FY 2017	0	0	0
FY 2018	50	50	50
FY 2019	100	100	100
Total, OPC	400	400	400

[a] $700 in FY 2017 is for long-lead materials.

	(Dollars in Thousands)		
	Appropriations	Obligations	Costs
Total Project Cost (TPC)			
FY 2014	250	250	250
FY 2015	400	400	400
FY 2016	900	900	900
FY 2017	700 [a]	700 [a]	700 [a]
FY 2018	13,750	13,750	13,750
FY 2019	100	100	100
Total, TPC	16,100	16,100	16,100

[a] $700 in FY 2017 is for long-lead materials.

6. Details of Project Cost Estimate

(Dollars in Thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	1,300	N/A	N/A
Contingency	0	N/A	N/A
Total, Design	1,300	N/A	N/A
Construction			
Site Preparation	0	N/A	N/A
Equipment	700 [a]	N/A	N/A
Other Construction	9,600	N/A	N/A
Contingency	4,100	N/A	N/A
Total, Construction	14,400	N/A	N/A
Total, TEC	15,700	N/A	N/A
Contingency, TEC	4,100	N/A	N/A
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	0	N/A	N/A
Conceptual Design	250	N/A	N/A
Start-up	150	N/A	N/A
Contingency	0	N/A	N/A
Total, OPC except D&D	400	N/A	N/A
D&D			
D&D	N/A	N/A	N/A
Total, D&D	N/A	N/A	N/A
Total, OPC	400	N/A	N/A
Contingency, OPC	0	N/A	N/A
		N/A	N/A
Total, TPC	16,100	N/A	N/A
Total, Contingency	4,100	N/A	N/A

[a] $700 for long-lead material procurement.

7. Schedule of Appropriation Requests

(Dollars in Thousands)

		Prior Years	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	Outyears	Total
FY 2015	TEC	0	0	400	900	700 [a]	13,700	0	0	15,700
	OPC	0	250	0	0	0	50	100	0	400
	TPC	0	250	400	900	700 [a]	13,750	100	0	16,100

8. Related Operations and Maintenance Funding Requirements

Not Applicable.

9. Required D&D Information

Not Applicable.

10. Acquisition Approach

The procurement strategy being evaluated for this project is design-bid-build. This strategy will be finalized as part of the CD-1 submittal.

[a] $700 for long-lead material procurement.

15-D-903, KL Fire System Upgrade,
Knolls Atomic Power Laboratory, Schenectady, NY
Project is for Design and Construction

1. Summary and Significant Changes

The most recent DOE O 413.3B approved Critical Decision (CD) is CD-0, Approve Mission Need, which was approved on October 25, 2012, with a Total Project Cost of $17,400 and a CD-4 of 1Q FY 2019.

A Federal Project Director has been assigned to this project.

This Project Data Sheet (PDS) does include a new start for the budget year.

This PDS is new.

2. Critical Decision (CD) and D&D Schedule

(Fiscal Quarter or Date)

	CD-0	CD-1	Design Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2015	10/25/2012	4Q FY2014	3Q FY2017	3Q FY2016	4Q FY2017	1Q FY2020	N/A	N/A

CD-0 – Approve Mission Need
CD-1 – Approve Alternative Selection and Cost Range
CD-2 – Approve Performance Baseline
CD-3 – Approve Start of Construction
CD-4 – Approve Start of Operations or Project Closeout
D&D Start – Start of Demolition & Decontamination (D&D) work
D&D Complete – Completion of D&D work

3. Baseline and Validation Status

(Dollars in Thousands)

	TEC, Design	TEC, Construction	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
FY 2015	1,200	15,000	16,200	1,200	N/A	1,200	17,400

4. Project Description, Scope, and Justification

Mission Need
The site-wide and building systems need to be upgraded or replaced due to obsolescence and to be consistent with current national fire protection requirements and New York State Building Code.

Scope and Justification – 15-D-903 KL Fire System Upgrade
This project will allow for the correction of performance gaps in the existing Knolls Laboratory site-wide fire alarm system, which is currently unable to distinguish between alarm, supervisory, and trouble signals. Options will be evaluated to replace the existing system with a code-compliant modern fire alarm network. In addition, obsolete equipment will be replaced with current, maintainable units and initiation and occupant notification devices will be installed or replaced to meet applicable code.

This project will accomplish the following: Replacement and upgrade of the current Knolls site-wide fire alarm system and building fire alarm control units with a modern system infrastructure and components with superior performance capabilities for the purposes of re-capitalization to address widespread fire alarm system obsolescence. A significant portion of the site and building fire alarm equipment was installed in 1948 and is beyond its expected useful system lifecycle. The project will address remaining deficiencies associated with the current site-wide fire alarm system's inability to monitor and transmit all building fire alarm signals (fire, supervisory, and trouble signals).

The project is being conducted in accordance with the NR Implementation Bulletin for DOE O 413.3B, Program and Project Management for the Acquisition of Capital Assets, and all appropriate project management requirements have been met.

5. Financial Schedule [a]

	(Dollars in Thousands)		
	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2015	600	600	600
FY 2016	600	600	600
Total, Design	1,200	1,200	1,200
Construction			
FY 2018	15,000	15,000	7,500
FY 2019	0	0	7,500
Total, Construction	15,000	15,000	15,000
TEC			
FY 2015	600	600	600
FY 2016	600	600	600
FY 2017	0	0	0
FY 2018	15,000	15,000	7,500
FY 2019	0	0	7,500
Total, TEC	16,200	16,200	16,200
Other Project Cost (OPC)			
OPC except D&D			
FY 2013	300	300	300
FY 2014	300	300	300
FY 2015	0	0	0
FY 2016	0	0	0
FY 2017	0	0	0
FY 2018	600	600	200
FY 2019	0	0	400
Total, OPC except D&D	1,200	1,200	1,200
D&D	N/A	N/A	N/A
Total, D&D	N/A	N/A	N/A
OPC			
FY 2013	300	300	300
FY 2014	300	300	300
FY 2015	0	0	0
FY 2016	0	0	0
FY 2017	0	0	0
FY 2018	600	600	200
FY 2019	0	0	400
Total, OPC	1,200	1,200	1,200

[a] Figures are only estimates and consistent with the high end of the cost ranges.

(Dollars in Thousands)

	Appropriations	Obligations	Costs
Total Project Cost (TPC)			
FY 2013	300	300	300
FY 2014	300	300	300
FY 2015	600	600	600
FY 2016	600	600	600
FY 2017	0	0	0
FY 2018	15,600	15,600	7,700
FY 2019	0	0	7,900
Total, TPC	17,400	17,400	17,400

6. Details of Project Cost Estimate

(Dollars in Thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	1,100	N/A	N/A
Contingency	100	N/A	N/A
Total, Design	1,200	N/A	N/A
Construction			
Other Construction	12,300	N/A	N/A
Contingency	2,700	N/A	N/A
Total, Construction	15,000	N/A	N/A
Total, TEC	16,200	N/A	N/A
Contingency, TEC	2,800	N/A	N/A
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	600	N/A	N/A
Conceptual Design	600	N/A	N/A
Total, OPC except D&D	1,200	N/A	N/A
D&D			
D&D	N/A	N/A	N/A
Total, D&D	N/A	N/A	N/A
Total, OPC	1,200	N/A	N/A
Contingency, OPC	0	N/A	N/A
Total, TPC	17,400	N/A	N/A
Total, Contingency	2,800	N/A	N/A

7. Schedule of Appropriation Requests

(Dollars in Thousands)

		Prior Years	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	Outyears	Total
FY 2015	TEC	0	0	600	600	0	15,000	0	0	16,200
	OPC	300	300	0	0	0	600	0	0	1,200
	TPC	300	300	600	600	0	15,600	0	0	17,400

8. Related Operations and Maintenance Funding Requirements

Not Applicable.

9. Required D&D Information

Not Applicable.

10. Acquisition Approach

The procurement strategy being evaluated for this project is design-bid-build due to the uncertainty caused by the large number of interfaces with legacy systems and facilities. The construction contract will be placed using a fixed price contract.

15-D-902, KS Engineroom Team Trainer Facility,
Kesselring Site, West Milton, NY
Project is for Design and Construction

1. Summary and Significant Changes

The most recent DOE O 413.3B approved Critical Decision (CD) is CD-1, Approve Alternative Selection and Cost Range, which was approved on October 2, 2013, with a Total Project Cost of $38,500 and a CD-4 of 3Q FY 2018.

A Federal Project Director has been assigned to this project.

This Project Data Sheet (PDS) does include a new start for the budget year.

This PDS is new.

2. Critical Decision (CD) and D&D Schedule [a]

(Fiscal Quarter or Date)

	CD-0	CD-1	Design Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2015	5/19/2011	4Q FY 2013	2Q FY 2016	4Q FY2015	4Q FY 2016	3Q FY 2018	4Q FY2016	1Q FY2017

CD-0 – Approve Mission Need
CD-1 – Approve Alternative Selection and Cost Range
CD-2 – Approve Performance Baseline
CD-3 – Approve Start of Construction
CD-4 – Approve Start of Operations or Project Closeout
D&D Start – Start of Demolition & Decontamination (D&D) work
D&D Complete – Completion of D&D work

3. Baseline and Validation Status [b]

(Dollars in Thousands)

	TEC, Design	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2015	3,000	33,300	36,300	1,900	300	2,200	38,500

4. Project Description, Scope, and Justification

Mission Need
The Naval Nuclear Power Training Program, starting in FY 2017, will begin transitioning from four to three critical training platforms. To maintain training program capacity following this transition, advanced training simulation equipment (e.g., Task Trainers and Engine Room Team Trainers (ERTT)) will augment training on the critical training platforms. There is no Kesselring Site facility of sufficient size or infrastructure to house the ERTT and task trainers that will augment training on the Land-based Prototype.

Scope and Justification – 15-D-904, KS Engine Room Team Trainer Facility
This project is required by 2018 to provide facility space and infrastructure for installation and operational testing of the ERTT supporting the Land-based Prototype. The facility must include a high bay sized to house the ERTT (a simulated portion of the Land-based Prototype hull) and additional space for multiple task trainers (simulating specific Land-based Prototype plant equipment). In addition to housing the simulation training equipment, the facility must provide sufficient

[a] Schedules are only estimates and consistent with the high end of the schedule ranges.
[b] Figures are estimates and are consistent with the high end of expected cost ranges.

support space for computer and server equipment required to operate the simulation equipment, engineer and technician offices, student classrooms, and equipment and spare part maintenance and storage. Given the large size of the assembled ERTT (approximately 42 feet diameter), the high bay area must include the capability to support simulator assembly (e.g., internal bridge crane).

This project will accomplish the following: Construct a building to provide high bay space to support construction and operation of required advanced simulation equipment (i.e., ERTT) and additional space to house task trainer simulation equipment, simulation equipment support space, and related classroom/office space. Approximately 26,000 square feet will be required.

The project is being conducted in accordance with in the NR Implementation Bulletin for DOE O 413.3B, Program and Project Management for the Acquisition of Capital Assets, and all appropriate project management requirements have been met.

5. Financial Schedule [a]

	(Dollars in Thousands)		
	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2015	1,500	1,500	1,500
FY 2016	1,500	1,500	1,500
Total, Design	3,000	3,000	3,000
Construction			
FY 2017	33,300	33,300	11,500
FY 2018	0	0	17,500
FY 2019	0	0	4,300
Total, Construction	33,300	33,300	33,300
TEC			
FY 2015	1,500	1,500	1,500
FY 2016	1,500	1,500	1,500
FY 2017	33,300	33,300	11,500
FY 2018	0	0	17,500
FY 2019	0	0	4,300
Total, TEC	36,300	36,300	36,300
Other Project Cost (OPC)			
OPC except D&D			
FY 2013	200	200	200
FY 2014	0	0	0
FY 2015	700	700	200
FY 2016	700	700	500
FY 2017	300	300	1,000
Total, OPC except D&D	1,900	1,900	1,900
D&D			
FY 2016	300	300	300
Total, D&D	300	300	300
OPC			
FY 2013	200	200	200
FY 2014	0	0	0
FY 2015	700	700	200
FY 2016	1,000	1,000	800
FY 2017	300	300	1,000
Total, OPC	2,200	2,200	2,200
Total Project Cost (TPC)			
FY 2013	200	200	200
FY 2014	0	0	0
FY 2015	2,200	2,200	1,700

[a] Figures are only estimates and consistent with the high end of the cost ranges.

FY 2016	2,500	2,500	2,300
FY 2017	33,600	33,600	12,500
FY 2018	0	0	17,500
FY 2019	0	0	4,300
Total, TPC	38,500	38,500	38,500

6. Details of Project Cost Estimate

	(Dollars in Thousands)		
	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	2,700	N/A	N/A
Contingency	300	N/A	N/A
Total, Design	3,000	N/A	N/A
Construction			
Other Construction	24,200	N/A	N/A
Contingency	9,100	N/A	N/A
Total, Construction	33,300	N/A	N/A
Total, TEC	36,300	N/A	N/A
Contingency, TEC	9,400	N/A	N/A
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Design	200	N/A	N/A
Start-up	1,700	N/A	N/A
Total, OPC except D&D	1,900	N/A	N/A
D&D			
D&D	300	N/A	N/A
Total, D&D	300	N/A	N/A
Total, OPC	2,200	N/A	N/A
Contingency, OPC	0	N/A	N/A
Total, TPC	38,500	N/A	N/A
Total, Contingency	9,400	N/A	N/A

7. Schedule of Appropriation Requests

(Dollars in Thousands)

		Prior Years	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	Outyears	Total
FY 2015	TEC	0	0	1,500	1,500	33,300	0	0	0	36,300
	OPC	200	0	700	1,000	300	0	0	0	2,200
	TPC	200	0	2,200	2,500	33,600	0	0	0	38,500

8. Related Operations and Maintenance Funding Requirements

Not Applicable.

9. Required D&D Information

Not Applicable.

10. Acquisition Approach

This Project will be conducted using a Design-Bid-Build acquisition strategy. Conceptual design will use a cost-plus fixed-fee contract. The construction contract will be placed using a fixed price contract.

15-D-901, KS Central Office and Prototype Staff Building,
Kesselring Site (KS), West Milton, NY
Project is for Design and Construction

1. Summary and Significant Changes

The most recent DOE O 413.3B approved Critical Decision (CD) is CD-1, Approve Alternative Selection and Cost Range, which was approved on March 13, 2013, with a Total Project Cost of $24,850 and a CD-4 of 3Q FY 2017.

A Federal Project Director has been assigned to this project.

This Project Data Sheet (PDS) does include a new start for the budget year.

This PDS is new.

2. Critical Decision (CD) and D&D Schedule

(Fiscal Quarter or Date)

	CD-0	CD-1	Design Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2015	3/29/2011	3/21/2013	N/A	3/21/2013	3Q FY2014	3Q FY2017	N/A	N/A

CD-0 – Approve Mission Need
CD-1 – Approve Alternative Selection and Cost Range
CD-2 – Approve Performance Baseline
CD-3 – Approve Start of Construction
CD-4 – Approve Start of Operations or Project Closeout
D&D Start – Start of Demolition & Decontamination (D&D) work
D&D Complete – Completion of D&D work

3. Baseline and Validation Status

(Dollars in Thousands)

	TEC, Design [a]	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2015	N/A	24,000	24,000	850	N/A	850	24,850

4. Project Description, Scope, and Justification

Mission Need
This building will serve as a dual purpose training and office facility. It will support the Modifications and Additions to Reactor Facility (MARF) prototype and S8G prototype off-crew training classrooms, libraries and staff offices as well as space for site management and staff. This facility is needed to meet national security requirements for more trained nuclear operators and to accommodate the corresponding increased staff necessary to train those operators.

Scope and Justification - 15-D-901, KS Central Office and Prototype Staff Building
KS Central Office and Prototype Staff Building will allow the simultaneous training of 330 nuclear operators and will provide professional office space for approximately 120 personnel. The facility will co-locate off-crew training space for the two on-site nuclear reactor plants, providing efficient and effective use of resources and allowing KS to accommodate increased nuclear operator student enrollment to support Navy fleet needs. Further, construction of the facility will allow the current outdated off-crew training areas to be repurposed to support the 2018 refueling overhaul of the S8G Prototype nuclear reactor plant. The additional office space provided by the KS Central Office and Prototype Staff Building will enable the site to meet a projected office facility shortfall in FY 2017. Personnel occupying this new office space will support the S8G Prototype refueling overhaul, defueling and inactivation of the MARF prototype nuclear reactor plant, and deployment of

[a] The project plans to use a design-build acquisition strategy.

new training equipment designed to allow the Naval Nuclear Propulsion Program to more efficiently train nuclear operators.

This project will accomplish the following:

- Construct a dual purpose training and office facility.
- Training spaces will consist of staff offices, operator check-out cubes, student training classrooms, libraries, examination preparation areas, seminar rooms, break areas, janitorial facilities, restrooms, and equipment areas.
- Office spaces will include conference rooms, teaming rooms, offices spaces, kitchenettes, restrooms, and utility spaces.
- Reduce energy consumption through the application of High Performance and Sustainable Building (HPSB) guiding principles, consistent with DOE energy reduction initiatives.

The project is being conducted in accordance with the NR Implementation Bulletin for DOE O 413.3B, Program and Project Management for the Acquisition of Capital Assets, and all appropriate project management requirements have been met.

5. Financial Schedule

	(Dollars in Thousands)		
	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
Design	N/A	N/A	N/A
Total, Design	N/A	N/A	N/A
Construction			
FY 2015	24,000	24,000	6,000
FY 2016	0	0	12,400
FY 2017	0	0	5,600
Total, Construction	24,000	24,000	24,000
TEC			
FY 2015	24,000	24,000	6,000
FY 2016	0	0	12,400
FY 2017	0	0	5,600
Total, TEC	24,000	24,000	24,000
Other Project Cost (OPC)			
OPC except D&D			
FY 2013	50	50	50
FY 2014	500	500	500
FY 2015	300	300	0
FY 2016	0	0	200
FY 2017	0	0	100
Total, OPC except D&D	850	850	850
D&D	N/A	N/A	N/A
Total, D&D	N/A	N/A	N/A
OPC			
FY 2013	50	50	50
FY 2014	500	500	500
FY 2015	300	300	0
FY 2016	0	0	200
FY 2017	0	0	100
Total, OPC	850	850	850
Total Project Cost (TPC)			
FY 2013	50	50	50
FY 2014	500	500	500
FY 2015	24,300	24,300	6,000
FY 2016	0	0	12,600
FY 2017	0	0	5,700
Total, TPC	24,850	24,850	24,850

6. Details of Project Cost Estimate

(Dollars in Thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	0	N/A	N/A
Contingency	0	N/A	N/A
Total, Design	0	N/A	N/A
Construction			
Site Preparation	0	N/A	N/A
Equipment	0	N/A	N/A
Other Construction	21,800	N/A	N/A
Contingency	2,200	N/A	N/A
Total, Construction	24,000	N/A	N/A
Total, TEC	24,000	N/A	N/A
Contingency, TEC	2,200	N/A	N/A
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	0	N/A	N/A
Conceptual Design	50	N/A	N/A
Start-up	800	N/A	N/A
Contingency	0	N/A	N/A
Total, OPC except D&D	850	N/A	N/A
D&D			
D&D	N/A	N/A	N/A
Total, D&D	N/A	N/A	N/A
Total, OPC	850	N/A	N/A
Contingency, OPC	0	N/A	N/A
Total, TPC	24,850	N/A	N/A
Total, Contingency	2,200	N/A	N/A

7. Schedule of Appropriation Requests

(Dollars in Thousands)

		Prior Years	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	Outyears	Total
FY 2015	TEC	0	0	24,000	0	0	0	0	0	24,000
	OPC	50	500	300	0	0	0	0	0	850
	TPC	50	500	24,300	0	0	0	0	0	24,850

8. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	3Q FY 2017
Expected Useful Life (number of years)	40
Expected Future Start of D&D of this capital asset (fiscal quarter)	3Q FY 2057

(Related Funding Requirements)

(Dollars in Thousands)

	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	240	N/A	9,600	N/A
Maintenance	240	N/A	9,600	N/A
Total, Operations and Maintenance	480	N/A	19,200	N/A

9. Required D&D Information

Area	Square Feet [a]
Area of new construction	50,000
Area of existing facility(s) being replaced and D&D'ed by this project	N/A
Area of additional D&D space to meet the "one-for-one" requirement from the banked area	50,000

Name(s) and site location(s) of existing facility(s) to be replaced: Kesselring Site Building 65 will be demolished separately and is not included in the TPC for this project. The new facility will be built on the old Building 65 footprint.

10. Acquisition Approach

The acquisition strategy utilizes a design-build methodology. The design-build contract will be a negotiated procurement and the basis of award will be a determination of best value through a formalized selection process. The contract type will be firm fixed-price. Office furniture and carpeting procurements will utilize existing site contracts previously placed in order to take advantage of pre-negotiated pricing and compatibility.

[a] These figures are estimates and will not be known until the design-build contract is placed.

14-D-902, KL Material Characterization Laboratory
Knolls Atomic Power Laboratory, Schenectady, NY
Project is for Design and Construction

1. Summary and Significant Changes

The most recent DOE O 413.3B approved Critical Decision (CD) is CD-0, Approve Mission Need, which was approved on February 7, 2013 with a Total Project Cost of $38,200 and a CD-4 in 2018.

A Federal Project Director has been assigned to this project.

This Project Data Sheet (PDS) does not include a new start for the budget year.

This PDS is an update of the FY 2014 PDS and is requesting a scope change; but no FY 2015 capital construction funding. The FY 2014 PDS for the Materials Characterization Laboratory (MCL) identified a TEC of $16,800 for construction in FY 2017. At the time, Naval Reactors planned to build a separate $38,500 Support Services Facility (SSF) in FY 2016. Subsequent to submitting the FY 2014 budget, NR identified new technologies that reduce the size requirements of the SSF. The most cost effective solution was to merge the requirements of the two projects into one. A revised CD-0 for this strategy was approved on February 7, 2013. Subsequent to CD-0 approval, the disposal cost of the Q10 trailer has been included in the TPC of this project consistent with the FY 2005 Energy and Water Development appropriation conference report, in which congress directed that any facility being replace by a new building must be demolished as part of the new building project. The projects new TPC is $38,282.

2. Critical Decision (CD) and D&D Schedule [a]

(Fiscal Quarter or Date)

	CD-0	CD-1	Design Complete	CD-2[b]	CD-3	CD-4	D&D Start	D&D Complete
FY 2014	10/3/2011	3Q FY2013	3Q FY2016	1Q FY2015	3Q FY2016	1Q FY2020	N/A	N/A
FY 2015	2/7/2013	2Q FY2014	1Q FY2017	2Q FY2014	4Q FY2015	4Q FY2018	1Q FY2019	2Q FY2019

CD-0 – Approve Mission Need
CD-1 – Approve Alternative Selection and Cost Range
CD-2 – Approve Performance Baseline
CD-3 – Approve Start of Construction
CD-4 – Approve Start of Operations or Project Closeout
D&D Start – Start of Demolition & Decontamination (D&D) work
D&D Complete – Completion of D&D work

3. Baseline and Validation Status [c]

(Dollars in Thousands)

	TEC, Design [d]	TEC, Construction	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
FY 2014	1,000	16,800	17,800	4,000	N/A	4,000	21,800
FY 2015	1,000	30,000	31,000	7,200	82	7,282	38,282

[a] Schedules are only estimates and consistent with the high end of the schedule ranges.
[b] Design/build project with combined CD-1/2.
[c] Figures are only estimates and consistent with the high end of the cost ranges.
[d] Design of the utility reroute needed in advance of construction.

4. Project Description, Scope, and Justification

Mission Need

The current Material Characterization Laboratory (MCL) shares non-contiguous space with the Physical Chemistry unit at the Knolls site. The current MCL has no central HVAC, creating temperature and humidity swings that affect equipment sensitivity and requires substantial effort to correct data. Additionally the existing laboratory's floors are not properly isolated, which allows vibration from the infrastructure and high impact test equipment to interfere with the operation of sensitive equipment. The size and layout of the current facility cannot accommodate emergent work when the work requires additional test equipment and laydown area. Additionally the facility is 64 years old and has radiological, chemical, and asbestos legacy issues which complicate and delay completion of even simple building maintenance. These legacy issues make recapitalizing the existing space cost prohibitive.

The Radiological Training facility is located in a defunct trailer with limited floor space and load limitations that preclude the use of prototypic radiological training mockups. The trailer also lacks other features that enable prototypic training such as running water, compressed air, and ventilation piping. The trailer size also limits the throughput of trainees seeking radiological qualifications and does not have space to accommodate studying in the facility. The trailer does not have restroom facilities, requiring instructors to escort examinees to a separate building during testing. The overall quality of the current training facility is sub-standard and is not aligned with the importance of the radiological controls within the Naval Nuclear Propulsion Program.

The current Environmental Safety & Health (ESH) facility is separated from the main site and ~80% of personnel seeking ESH qualifications. This separation requires personnel to commute via a shuttle, which is highly inefficient. Additionally, limitations in the current ESH facility prevent efficient and effective use and storage of training props and equipment, and impacts hearing and respiratory training and qualification programs.

The current Laboratory Equipment Design (LED) facility is too small to house all of its employees, which requires approximately half to have offices in a separate building. In addition to this inefficiency, the current LED facility is not located near its primary customers.

Scope and Justification - 14-D-902, KL Material Characterization Laboratory

The revised MCL and Training Facility will include 33,000 – 36,000 sq. ft. of laboratory, training, and office space to address the needs identified above.

The new MCL and LED spaces will 1) provide adequate floor space for equipment and allow for equipment modifications and laboratory reconfiguration 2) eliminate the radiological and chemical legacy concerns during maintenance, 3) provide a specialized HVAC system designed for controlling and room temperatures and environmental in where needed, 4) isolate the foundations of sensitive analytical equipment from vibration-producing equipment, and 5) provide offices spaces to accommodate building personnel.

The new building will address current issues in the Radiological Training Facility by 1) including sufficient space to allow for classrooms and prototypic mockups, 2) provide a central location that is convenient for KAPL personnel and meets current code requirements (e.g., restrooms), and 3) will be designed to eliminate ADA noncompliance issues. The new ESH training area will also have sufficient space to meet the training needs of the site and eliminate transportation issues associated with the current ESH facility.

The facility will also have some additional offices for other KAPL personnel currently in legacy substandard office space.

The project is being conducted in accordance with the NR Implementation Bulletin for DOE O 413.3B, Program and Project Management for the Acquisition of Capital Assets, and all appropriate project management requirements have been met.

5. Financial Schedule [a]

(Dollars in Thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2014	1,000	1,000	1,000
Total, Design	1,000	1,000	1,000
Construction			
FY 2016	30,000	30,000	10,600
FY 2017	0	0	15,000
FY 2018	0	0	4,400
Total, Construction	30,000	30,000	30,000
TEC			
FY 2014	1,000	1,000	1,000
FY 2015	0	0	0
FY 2016	30,000	30,000	10,600
FY 2017	0	0	15,000
FY 2018	0	0	4,400
Total, TEC	31,000	31,000	31,000
Other Project Cost (OPC)			
OPC except D&D			
FY 2012	200	200	200
FY 2013	400	400	400
FY 2014	700	700	700
FY 2015	2,900	2,900	2,900
FY 2016	3,000	3,000	600
FY 2017	0	0	1,500
FY 2018	0	0	900
Total, OPC except D&D	7.200	7,200	7,200
D&D	82	82	82
Total, D&D	82	82	82

[a] Figures are only estimates and consistent with the high end of the cost ranges.

	(Dollars in Thousands)		
	Appropriations	Obligations	Costs
OPC			
FY 2012	200	200	200
FY 2013	400	400	400
FY 2014	700	700	700
FY 2015	2,900	2,900	2,900
FY 2016	3,000	3,000	600
FY 2017	0	0	1,500
FY 2018	0	0	900
FY 2019	82	82	82
Total, OPC	7,282	7,282	7,282
Total Project Cost (TPC)			
FY 2012	200	200	200
FY 2013	400	400	400
FY 2014	1,700	1,700	1,700
FY 2015	2,900	2,900	2,900
FY 2016	33,000	33,000	11,200
FY 2017	0	0	16,500
FY 2018	0	0	5,300
FY 2019	82	82	82
Total, TPC	38,282	38,282	38,282

6. Details of Project Cost Estimate[a]

	(Dollars in Thousands)		
	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	900	900	N/A
Contingency	100	100	N/A
Total, Design	1,000	1,000	N/A
Construction			
Site Preparation	0	1,000	N/A
Equipment	0	0	N/A
Other Construction	27,300	14,800	N/A
Contingency	2,700	1,000	N/A
Total, Construction	30,000	16,800	N/A
Total, TEC	31,000	17,800	N/A
Contingency, TEC	2,800	1,100	N/A
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	0	0	N/A
Conceptual Design	500	300	N/A
Site Characterization	6,700	700	N/A
Start-up	0	2,000	N/A
Contingency	0	1,000	N/A
Total, OPC except D&D	7,200	4,000	N/A
D&D	82	N/A	N/A
Total, D&D	82	N/A	N/A
Total, OPC	7,282	4,000	N/A
Contingency, OPC	0	1,000	N/A
Total, TPC	38,282	21,800	N/A
Total, Contingency	2,700	2,100	N/A

[a] Figures are only estimates and consistent with the high end of the cost ranges.

7. Schedule of Appropriation Requests

(Dollars in Thousands)

		Prior Years	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	Outyears	Total
FY 2014	TEC	0	1,000	0	0	16,800	0	0	0	17,800
	OPC	300	0	500	0	2,000	1,200	0	0	4,000
	TPC	300	1,000	500	0	18,800	1,200	0	0	21,800
FY 2015	TEC	0	1,000	0	30,000	0	0	0	0	31,000
	OPC	600	700	2,900	3,000	0	0	82	0	7,282
	TPC	600	1,700	2,900	33,000	0	0	82	0	38,282

8. Related Operations and Maintenance Funding Requirements

Not applicable.

9. Required D&D Information

Not applicable.

10. Acquisition Approach

This project will be executed in two phases. A design-bid-build contract will be utilized to reroute utilities A design-build acquisition will be used for building construction. The utility reroute will be designed in FY 2014, with execution in FY 2016. This schedule efficiency will minimize the risk of the utility reroute becoming critical path to initiating building construction late in FY 2016.

14-D-901, Spent Fuel Handling Recapitalization Project
Naval Reactors Facility, Idaho
Project is for Design and Construction

1. Summary and Significant Changes

The most recent DOE O 413.3 approved Critical Decision (CD) is CD-0, Approve Mission Need, which was approved on March 29, 2008 with a preliminary cost range of $748,000 to $1,057,000 in FY 2009 dollars and a CD-4 of FY 2020 [a].

A Federal Project Director has been assigned to this project.

The FY 2014 Consolidated Appropriations Act did not include major construction project funding for the Spent Fuel Handling Recapitalization Project; therefore, a new schedule and funding profile for this Project is currently under development. This project data sheet reflects the Project's schedule and funding profile prior to the FY 2014 Consolidated Appropriations Act and revised outyear funding targets.

2. Critical Decision (CD) and D&D Schedule [b]

(Fiscal Quarter or Date)

	CD-0	CD-1	Design Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2014	3/29/2008	1Q FY2014	4Q FY2016	3Q FY2015	4Q FY2016	4Q FY2022	N/A	N/A
FY 2015	3/29/2008	1Q FY2014	4Q FY2016	3Q FY2015	4Q FY2016	4Q FY2022	N/A	N/A

CD-0 – Approve Mission Need
CD-1 – Approve Alternative Selection and Cost Range
CD-2 – Approve Performance Baseline
CD-3 – Approve Start of Construction
CD-4 – Approve Start of Operations or Project Closeout
D&D Start – Start of Demolition & Decontamination (D&D) work
D&D Complete – Completion of D&D work

3. Baseline and Validation Status [c]

(Dollars in Thousands)

	TEC, Design	TEC, Construction	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
FY 2014	369,400	917,100	1,286,500	165,000	N/A	165,000	1,451,500
FY 2015	369,400	917,100	1,286,500	165,000	N/A	165,000	1,451,500

4. Project Description, Scope, and Justification

Mission Need

Although the current Expended Core Facility (ECF) continues to be maintained and operated in a safe and environmentally responsible manner, the existing infrastructure and equipment are over 50 years old, do not meet current standards, and require recapitalization. ECF is also incapable of receiving full-length aircraft carrier naval spent nuclear fuel, which is required to support upcoming aircraft carrier refuelings. The magnitude of required sustainment efforts and incremental infrastructure upgrades pose substantial risk to the continued processing of naval spent nuclear fuel for long term storage. An interruption of refueling and defueling schedules for nuclear-powered vessels, as required by existing maintenance schedules, would adversely affect the operational availability of the nuclear fleet. If this interruption were to extend over

[a] The CD-0 preliminary cost range has been updated based on availability of funding in FY 2012 and FY 2013. The updated preliminary cost range is $1,290,000 to $1,451,500 (Then Year dollars) and a CD-4 of FY 2022.
[b] Schedules are only estimates and consistent with the high end of the schedule ranges.
[c] Figures are only estimates and consistent with the high end of the cost ranges.

long periods, the ability to sustain fleet operations would be impacted, resulting ultimately in a significant decrement to the Navy's responsiveness and agility to fulfull military missions worldwide.

Scope and Justification – 14-D-901, Spent Fuel Handling Recapitalization Project

The mission of Naval Reactors (NR) is to provide the Nation with militarily effective nuclear propulsion plants and to ensure their safe, reliable, long-lived, and affordable operation. NR maintains total responsibility for all aspects of the U.S. Navy's nuclear propulsion systems, including research, design, construction, testing, operation, maintenance, and disposal. At the end of reactor service life, NR transports naval spent nuclear fuel from its origin (e.g., naval spent nuclear fuel from servicing shipyards and naval training platforms) to the Naval Reactors Facility (NRF) at the Idaho National Laboratory (INL).

Located at NRF, the ECF provides the infrastructure to unload M-140 shipping containers and transfer, prepare, temporarily store, and package naval spent nuclear fuel for disposal. The ECF capabilities are vital to the Naval Nuclear Propulsion Program's mission of maintaining reliable operation of the naval nuclear fleet, developing militarily effective nuclear propulsion plants, and fulfilling cradle-to-grave responsibilities. The ECF has operated safely and reliably throughout its history.

The long-term demand on the ECF infrastructure requires continuous operation. While maintenance and repair programs are in place to address the current vulnerabilities associated with the aging infrastructure, repair and refurbishment actions that would be required to sustain long-term operations are substantial. The urgency of these actions will increase over time as the infrastructure continues to age. Failure to implement these repairs and refurbishments in advance of infrastructure deterioration will impact the ability of the ECF to operate, perhaps for a period of years. Further, the repair and refurbishment actions themselves will interrupt operations for extended periods. Any long-term strategy other than recapitalizing the existing infrastructure will result in mission-compromising interruptions that could impact national security.

The following represents the general scope of the Spent Fuel Handling Recapitalization Project:

- A facility and facility systems for naval spent nuclear fuel handling.
- Infrastructure needed to support naval spent nuclear fuel handling operations.
- Develop testing, operating, and preventative maintenance procedures and drawings, as needed, for the naval spent nuclear fuel handling process systems, equipment, facilities, and facility systems.
- Personnel training and development of training programs, where appropriate.
- Project management.
- Support services needed for the project.
- Management for sub-contracts supporting the design and construction.
- National Environmental Policy Act (NEPA) compliance.

The existing ECF at NRF in Idaho is a single facility which is approximately 197,000 square feet. However, other facilities at NRF support operations within the ECF and include additional areas for administrative support and warehouse storage. ECF has the two major capabilities: (1) to receive, unload, prepare, and package naval spent nuclear fuel and, (2) to conduct naval spent nuclear fuel examinations. Both capabilities currently exist within the ECF, which is over 50 years old, does not meet current standards, and requires recapitalization.

Actions necessary to continue NR's ability to support naval spent nuclear fuel handling are the subject of an Environmental Impact Statement (EIS). The EIS for recapitalization of the infrastructure supporting naval spent nuclear fuel will include an assessment of the environmental impacts associated with handling of naval spent nuclear fuel. The draft EIS is currently under development. The EIS will evaluate the environmental impacts of the following alternatives:

(1) No Action Alternative – Maintain the naval spent nuclear fuel handling capabilities of the ECF by continuing to use the current ECF infrastructure while performing corrective maintenance.
(2) Overhaul Alternative – Recapitalize the naval spent nuclear fuel handling capabilities of ECF by overhauling ECF with major refurbishment projects for the ECF infrastructure and water pools.
(3) New Facility Alternative, including the Spent Fuel Handling Recapitalization Project – Recapitalize the naval spent nuclear fuel handling capabilities of ECF by constructing and operating a new facility at one of two potential locations at NRF.

The existing ECF is required to maintain the examination capability for the foreseeable future; therefore, no D&D is planned at this time. Separate NEPA action will be taken to address these future actions, if necessary.
The Spent Fuel Handling Recapitalization Project is in the conceptual design phase; therefore, the facility design is subject to change until plans are final. Currently, the Spent Fuel Handling Recapitalization Project facility is conservatively estimated to have a footprint of approximately 239,000 square feet. This new facility will incorporate the capabilities for naval spent nuclear fuel handling that currently exist in the ECF and its support facilities. Additionally, a major portion of this new facility is required to support additional capability, which does not exist in ECF, to handle full length aircraft carrier naval spent nuclear fuel received in new M-290 shipping containers.

The project is being conducted in accordance with the NR Implementation Bulletin for DOE O 413.3B, Program and Project Management for the Acquisition of Capital Assets, and all appropriate project management requirements have been met.

5. Financial Schedule [a]

(Dollars in Thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2014	45,400	45,400	45,400
FY 2015	141,100	141,100	141,100
FY 2016	182,900	182,900	182,900
Total, Design	369,400	369,400	369,400
Construction			
FY 2017	308,200	308,200	308,200
FY 2018	226,700	226,700	226,700
FY 2019	134,900	134,900	134,900
FY 2020	132,300	132,300	132,300
FY 2021	64,300	64,300	64,300
FY 2022	50,700	50,700	50,700
Total, Construction	917,100	917,100	917,100
TEC			
FY 2014	45,400	45,400	45,400
FY 2015	141,100	141,100	141,100
FY 2016	182,900	182,900	182,900
FY 2017	308,200	308,200	308,200
FY 2018	226,700	226,700	226,700
FY 2019	134,900	134,900	134,900
FY 2020	132,300	132,300	132,300
FY 2021	64,300	64,300	64,300
FY 2022	50,700	50,700	50,700
Total, TEC	1,286,500	1,286,500	1,286,500
Other Project Cost (OPC)			
OPC except D&D			
FY 2010	6,600	6,600	6,600
FY 2011	36,100	36,100	36,100
FY 2012	25,200	25,200	25,200
FY 2013	28,600	28,600	28,600
FY 2014	24,600	24,600	24,600
FY 2015	3,900	3,900	3,900
FY 2016	2,100	2,100	2,100
FY 2017	1,800	1,800	1,800
FY 2018	3,300	3,300	3,300
FY 2019	5,100	5,100	5,100
FY 2020	7,700	7,700	7,700
FY 2021	10,700	10,700	10,700
FY 2022	9,300	9,300	9,300
Total, OPC except D&D	165,000	165,000	165,000

[a] Figures are only estimates and consistent with the high end of the cost ranges.

	(Dollars in Thousands)		
	Appropriations	Obligations	Costs
D&D	N/A	N/A	N/A
Total, D&D	N/A	N/A	N/A
OPC			
FY 2010	6,600	6,600	6,600
FY 2011	36,100	36,100	36,100
FY 2012	25,200	25,200	25.200
FY 2013	28,600	28,600	28,600
FY 2014	24,600	24,600	24,600
FY 2015	3,900	3,900	3,900
FY 2016	2,100	2,100	2,100
FY 2017	1,800	1,800	1,800
FY 2018	3,300	3,300	3,300
FY 2019	5,100	5,100	5,100
FY 2020	7,700	7,700	7,700
FY 2021	10,700	10,700	10,700
FY 2022	9,300	9,300	9,300
Total, OPC except D&D	165,000	165,000	165,000
Total Project Cost (TPC)			
FY 2010	6,600	6,600	6,600
FY 2011	36,100	36,100	36,100
FY 2012	25,200	25,200	25,200
FY 2013	28,600	28,600	28,600
FY 2014	70,000	70,000	70,000
FY 2015	145,000	145,000	145,000
FY 2016	185,000	185,000	185,000
FY 2017	310,000	310,000	310,000
FY 2018	230,000	230,000	230,000
FY 2019	140,000	140,000	140,000
FY 2020	140,000	140,000	140,000
FY 2021	75,000	75,000	75,000
FY 2022	60,000	60,000	60,000
Total, TPC	1,451,500	1,451,500	1,451,500

6. Details of Project Cost Estimate [a]

(Dollars in Thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	369,400	369,400	N/A
Contingency	0 [b]	0 [b]	N/A
Total, Design	369,400	369,400	N/A
Construction			
Site Preparation	0	0	N/A
Equipment	0	0	N/A
Other Construction	917,100	917,100	N/A
Contingency	0 [b]	0 [b]	N/A
Total, Construction	917,100	917,100	N/A
Total, TEC	1,286,500	1,286,500	N/A
Contingency, TEC	0 [b]	0 [b]	N/A
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	42,700	42,700	N/A
Conceptual Design	66,100	66,100	N/A
Start-up	56,200	56,200	N/A
Contingency	0 [b]	0 [b]	N/A
Total, OPC except D&D	165,000	165,000	N/A
D&D	0	0	N/A
Total, D&D	0	0	N/A
Total, OPC	165,000	165,000	N/A
Contingency, OPC	0 [b]	0 [b]	N/A
Total, TPC	1,451,500	1,451,500	N/A
Total, Contingency	0 [b]	0 [b]	N/A

[a] Figures are only estimates and consistent with the high end of the cost ranges.
[b] Management reserve is included in the total design and construction figures.

7. Schedule of Appropriation Requests

(Dollars in Thousands)

		Prior Years	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	Outyears	Total
FY 2014	TEC	0	45,400	141,100	182,900	308,200	226,700	134,900	247,300	1,286,500
	OPC	96,500	24,600	3,900	2,100	1,800	3,300	5,100	27,700	165,000
	TPC	96,500	70,000	145,000	185,000	310,000	230,000	140,000	275,000	1,451,500
FY 2015	TEC	0	45,400	141,100	182,900	308,200	226,700	134,900	247,300	1,286,500
	OPC	96,500	24,600	3,900	2,100	1,800	3,300	5,100	27,700	165,000
	TPC	96,500	70,000	145,000	185,000	310,000	230,000	140,000	275,000	1,451,500

8. Related Operations and Maintenance Funding Requirements

Not applicable.

9. Required D&D Information

Not applicable.

10. Acquisition Approach

The integrated M&O prime partners will plan and execute the project in accordance with requirements. Naval spent nuclear fuel handling equipment will be procured through the procurement M&O partners. An Engineering, Procurement, and Construction Management (EPCM) firm was selected as the subcontracting strategy for design and construction management of the facility and facility systems. The EPCM contract is cost plus fixed fee. Capital funding will be used to purchase long-lead materials ahead of CD-3.

13-D-905, Remote-Handled Low-Level Waste Disposal Project
Idaho National Laboratory
Project is for Design and Construction

1. Summary and Significant Changes

The most recent DOE O 413.3B approved Critical Decision (CD) is CD-1, Approve Alternative Selection and Cost Range, that was approved on July 13, 2011 with a Total Project Cost of $95 million based on the upper end of the cost range. CD-2, Approve Performance Baseline, and CD-3, Approve Start of Construction, is anticipated to be approved in the 3rd Quarter of FY 2014 in compliance with the DOE O 413.3B. The project data sheet (PDS) will be updated to reflect the performance baseline cost and schedule upon approval of CD-2. This is a non-major acquisition project with a cost range less than $100 million. Based on the conceptual design and estimate, the lower and upper bound of the cost range is between $75 million and $95 million respectively. This project is subject to the Freeze the Footprint Initiative.

The project will be jointly funded in accordance with a Memorandum of Agreement between the Department of Energy (DOE) Office of Nuclear Energy (NE) and the Office of Naval Reactors (NR).

A Federal Project Director has been assigned to this project.

This project data sheet (PDS) does not include a new start for the FY 2015 budget year.

This PDS is an update of the FY 2014 PDS.

This PDS reflects a design-build delivery method. The project will employ a combined CD-2/3 critical milestone approach regarding “Approval of the Performance Baseline and Approval to Start Construction”, with hold points established by DOE-Idaho (DOE-ID) to verify readiness prior to actual Start of Construction. The funding presented in Sections 5 and 6 represent the upper end of the cost range. The funding will be updated to reflect the performance baseline point estimate upon approval of CD-2/3.

The PDS reflects a revision to the CD-4 date to align with current plans for facility closure of the existing RH LLW Disposal Facility located at the Radioactive Waste Management Complex by the Office of Environmental Management. The performance baseline established at CD-2/3 in 3Q FY 2014 will define the project schedule against which performance will be measured.

2. Critical Decision (CD) and D&D Schedule

(fiscal quarter or date)

	CD-0	CD-1	CD-2/3[a]	CD-4[a,b]	D&D[a] Start	D&D[a] Complete
FY 2013	07/01/2009	07/13/2011	1Q FY 2013	4Q FY 2017	4Q FY 2037	4Q FY 2038
FY 2014	07/01/2009	07/13/2011	2Q FY 2014	4Q FY 2017	4Q FY 2058[c]	4Q FY 2059[c]
FY 2015	07/01/2009	07/13/2011	3Q FY 2014	4Q FY 2020	0[d]	0[d]

[a] The Critical Decision (CDs) dates for CD-2/3, CD-4 and D&D are estimates and will be updated to reflect the performance baseline upon approval of CD-2.
[b] Dates are based on plans for facility closure of the existing RH LLW Disposal Facility located at the Radioactive Waste Management Complex by the Office of Environmental Management (EM); closure costs of the existing disposal facility, are funded as part of EM activities and are not part of the project.
[c] Date change based on design for a 50 year life-expectancy. Funding requested will provide up to 20 years of disposal capacity and infrastructure with a life expectancy of 50 years to allow for expansion.
[d] CD schedule does not include future D&D of the facility that is being constructed.

CD-0 – Approve Mission Need
CD-1 – Approve Alternative Selection and Cost Range
CD-2/3– Approve Performance Baseline/Start of Execution
CD-4 – Approve Start of Operations or Project Closeout
D&D Start – Start of Demolition & Decontamination (D&D) work
D&D Complete –Completion of D&D work

3. Baseline and Validation Status

(dollars in thousands)

	TEC[a], Design	TEC[a,b] Construction	TEC, Total[a]	OPC Except D&D[a]	OPC, D&D[a, c]	OPC, Total[a]	TPC[a]
FY 2013[b]	3,820	63,440	67,260	27,740	0	27,740	95,000
FY-2014[b]	3,820	63,440	67,260	27,740	0	27,740	95,000
FY-2015[b]	3,820	63,440	67,260	27,740	0	27,740	95,000

4. Project Description, Scope, and Justification

Mission Need

The continuing mission of the Idaho National Laboratory (INL), associated ongoing and planned operations, and Naval spent fuel activities at the Naval Reactors Facility (NRF) requires continued capability to appropriately dispose of remote-handled low level waste (LLW) in support of Office of Nuclear Energy and Office of Naval Reactors mission-critical operations. On July 13, 2011, the Office of Nuclear Energy approved Critical Decision-1, selecting development of a new facility for disposal of remote-handled LLW generated at the Idaho site as the preferred alternative to meet the mission need. In accordance with NEPA (42 USC§ 4321 et seq.), a thorough analysis of a range of reasonable alternatives was subsequently performed and, after evaluating the results of the analysis, the DOE Idaho Operations Office Manager issued a Finding of No Significant Impact on December 21, 2011. A preliminary Disposal Authorization Statement, based on the Low-Level Waste Disposal Facility Federal Review Group's review of the facility's current Performance Assessment and related documentation, was received on April 2, 2012. The new facility can accommodate disposal of up to twenty years of remote-handled LLW generated at the INL, and provide capability for further expansion.

Scope and Justification – 13-D-905 Remote-Handled Low-Level Waste Disposal Project

Scope

The project will provide on-site disposal capability for ten to twenty years of remote-handled LLW generated at the Idaho National Laboratory (INL); however, facilities are being designed to allow operation for 50 years to support future expansion, if needed. Replacement capability must be available when the current waste disposal site, which has been in operation since 1952, becomes unavailable for expansion with the closure of the Radioactive Waste Management Complex (RWMC). The subsurface vaults are envisioned to be constructed of precast concrete cylinders (pipe sections) stacked on end and placed in a honeycomb-type array. Based on waste projections, for a 20 year period, approximately 900 canisters of waste will be disposed of at the facility. The facility is projected to be a Hazard Category 2 nuclear facility, subject to the requirements of DOE-STD-1189, "Integration of Safety into the Design Process." The disposal facility will be located on a suitable site within the INL boundary. Performance of the site/facility will be analyzed in accordance with requirements of DOE Order 435.1, "Radioactive Waste Management."

[a] A design-build acquisition strategy is being implemented.
[b] The baseline has been set at the high-end of the TPC range; the project baseline will be approved upon approval of CD-2/3. No construction will be performed until the project performance baseline has been validated and CD-3 conditions have been addressed and approved by the Acquisition Executive.
[c] D&D of the existing RH LLW Disposal Facility located at RWMC is part of the Waste Area Group-7 CERCLA cleanup activity being performed by the Office of Environmental Management in response to the Idaho Settlement Agreement.

Supporting infrastructure to the new facility will include a paved access road; electrical service; firewater and potable water; security fence and systems; a maintenance building; administration building; communications and emergency systems; and other operational capabilities. Transportation and handling equipment systems also will be developed for onsite shipments of activated metals and debris waste from the Advanced Test Reactor Complex and the Material and Fuels Complex.

Justification

As DOE's lead nuclear energy laboratory, INL is a multipurpose national laboratory delivering specialized science and engineering global solutions for the DOE. INL also hosts the National Nuclear Security Administration's (NNSA) Naval Reactors Facility (NRF). NRF supports the U.S. Navy's nuclear-powered fleet through research and development of materials and equipment and management of naval spent nuclear fuel. In addition to the nuclear energy mission, Environmental Management (EM) is supporting a large-scale cleanup mission at the INL. These activities include closure of the RWMC under CERCLA (42 USC 9601 et seq. 1980). Remote-handled LLW generated by INL and NRF has been disposed of at RWMC since 1952. EM has notified NE and NR that disposal at RWMC should not be assumed beyond September 30, 2020.

The continuing nuclear energy mission of INL and NRF require continued capability to dispose of remote-handled LLW. Without established, viable remote-handled LLW disposal capability, ongoing and future operations at the INL and NRF would be adversely impacted. In addition to impacting INL operations at the Advanced Test Reactor and Material and Fuels Complex, remote-handled LLW disposal capability also is critical to the NNSA's mission to "provide the United States Navy with safe, militarily effective nuclear propulsion plants and to ensure the safe and reliable operation of those plants." Spent nuclear fuel from the Navy's nuclear-powered fleet is sent to NRF for examination, processing, dry storage, and ultimate disposition. A reliable disposal path for remote-handled LLW is essential to NRF's continued receipt and processing of naval spent nuclear fuel and, therefore, national security. Based on an evaluation of on-site and off-site alternatives and completion of an Environmental Assessment in accordance with the National Environmental Policy Act [NEPA], the highest-ranked alternative for providing continued, uninterrupted remote-handled LLW disposal capability is construction of a new onsite remote-handled LLW disposal facility. The life cycle cost to construct and operate a new onsite facility and the risk to the public have been determined to be significantly lower than the offsite disposal alternatives evaluated.

Project Status

With Congressional authorization of the project provided through the Consolidated Appropriations Act of 2014, the project started in FY14. A competitive procurement has been initiated to select a design-build contractor, and will be completed pending CD-2/3 in FY14.

Risks

A detailed evaluation of project risks and mitigations has been performed (INL PLN-2541). Contingency and management reserve adequate to address project risks has been identified and will be managed in accordance with the requirements of DOE O413.3B.

Funds appropriated under this data sheet may be used to provide independent assessments related to project planning and execution.

The project is being conducted in accordance with the project management requirements in DOE O 413.3B, Program and Project Management for the Acquisition of Capital Assets, and all appropriate project management requirements have been met.

5. Financial Schedule[a]

(dollars in thousands) (Total Project Cost @ Upper Bound[b])

	Appropriations			Obligations			Costs		
	NE	NR	Total	NE	NR	Total	NE	NR	Total
Total Estimated Cost (TEC)									
Design									
FY 2014	$47	$1,463	$1,510	$47	$1,463	$1,510	$47	$1,463	$1,510
FY 2015	$940	$1,370	$2,310	$940	$1,370	$2,310	$940	$1,370	$2,310
Total Design	$987	$2,833	$3,820	$987	$2,833	$3,820	$987	$2,833	$3,820
Construction									
FY 2014	$16,351	$19,610	$35,961	$16,351	$19,610	$35,961	$3,973	$3,305	$7,278
FY 2015	$4,429	$13,050	$17,479	$4,429	$13,050	$17,479	$8,711	$21,151	$29,862
FY 2016	$5,870	$0	$5,870	$5,870	$0	$5,870	$10,855	$4,891	$15,746
FY 2017	$4,130	$0	$4,130	$4,130	$0	$4,130	$7,241	$843	$8,084
FY 2018	$0	$0	$0	$0	$0	$0	$0	$2,470	$2,470
Total Construction	$30,780	$32,660	$63,440	$30,780	$32,660	$63,440	$30,780	$32,660	$63,440
TEC									
FY 2014	$16,398	$21,073	$37,471	$16,398	$21,073	$37,471	$4,020	$4,768	$8,788
FY 2015	$5,369	$14,420	$19,789	$5,369	$14,420	$19,789	$9,651	$22,521	$32,172
FY 2016	$5,870	$0	$5,870	$5,870	$0	$5,870	$10,855	$4,891	$15,746
FY 2017	$4,130	$0	$4,130	$4,130	$0	$4,130	$7,241	$843	$8,084
FY 2018	$0	$0	$0	$0	$0	$0	$0	$2,470	$2,470
Total TEC	**$31,767**	**$35,493**	**$67,260**	**$31,767**	**$35,493**	**$67,260**	**$31,767**	**$35,493**	**$67,260**
Other Project Cost (OPC)									
OPC, except D&D									
FY 2009	$184	$0	$184	$184	$0	$184	$184	$0	$184
FY 2010	$3,706	$0	$3,706	$3,706	$0	$3,706	$3,706	$0	$3,706
FY 2011	$3,774	$0	$3,774	$3,774	$0	$3,774	$3,774	$0	$3,774
FY 2012	$3,611	$0	$3,611	$3,611	$0	$3,611	$3,611	$0	$3,611
FY 2013	$325	$1,310	$1,635	$325	$1,310	$1,635	$325	$1,310	$1,635
FY 2014	$415	$1,075	$1,490	$415	$1,075	$1,490	$415	$1,075	$1,490
FY 2015	$2,553	$570	$3,123	$2,553	$570	$3,123	$2,553	$570	$3,123
FY 2016	$2,551	$3,640	$6,191	$2,551	$3,640	$6,191	$2,300	$796	$3,096
FY 2017	$2,651	$1,375	$4,026	$2,651	$1,375	$4,026	$2,808	$1,194	$4,002
FY 2018	$0	$0	$0	$0	$0	$0	$94	$3,025	$3,119
Total OPC, except D&D	$19,770	$7,970	$27,740	$19,770	$7,970	$27,740	$19,770	$7,970	$27,740
D&D[c]	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total D&D[c]	$0	$0	$0	$0	$0	$0	$0	$0	$0

[a] Budget figures shown are only estimates and based on the high end of the cost range.
[b] Design costs are part of the design-build contract, which is funded with construction funds.
[c] Existing disposal capability at the INL is managed and operated by EM. Therefore, costs for closure of the existing disposal capability are not included as part of the Remote-Handled Low-Level Waste Disposal Project.

(dollars in thousands) (Total Project Cost @ Upper Bound[b])

	Appropriations			Obligations			Costs		
	NE	NR	Total	NE	NR	Total	NE	NR	Total
OPC									
FY 2009	$184	$0	$184	$184	$0	$184	$184	$0	$184
FY 2010	$3,706	$0	$3,706	$3,706	$0	$3,706	$3,706	$0	$3,706
FY 2011	$3,774	$0	$3,774	$3,774	$0	$3,774	$3,774	$0	$3,774
FY 2012	$3,611	$0	$3,611	$3,611	$0	$3,611	$3,611	$0	$3,611
FY 2013	$325	$1,310	$1,635	$325	$1,310	$1,635	$325	$1,310	$1,635
FY 2014	$415	$1,075	$1,490	$415	$1,075	$1,490	$415	$1,075	$1,490
FY 2015	$2,553	$570	$3,123	$2,553	$570	$3,123	$2,553	$570	$3,123
FY 2016	$2,551	$3,640	$6,191	$2,551	$3,640	$6,191	$2,300	$796	$3,096
FY 2017	$2,651	$1,375	$4,026	$2,651	$1,375	$4,026	$2,808	$1,194	$4,002
FY 2018	$0	$0	$0	$0	$0	$0	$94	$3,025	$3,119
Total OPC	**$19,770**	**$7,970**	**$27,740**	**$19,770**	**$7,970**	**$27,740**	**$19,770**	**$7,970**	**$27,740**
Total Project Cost (TPC)									
FY 2009	$184	$0	$184	$184	$0	$184	$184	$0	$184
FY 2010	$3,706	$0	$3,706	$3,706	$0	$3,706	$3,706	$0	$3,706
FY 2011	$3,774	$0	$3,774	$3,774	$0	$3,774	$3,774	$0	$3,774
FY 2012	$3,611	$0	$3,611	$3,611	$0	$3,611	$3,611	$0	$3,611
FY 2013	$325	$1,310	$1,635	$325	$1,310	$1,635	$325	$1,310	$1,635
FY 2014	$16,813	$22,148	$38,961	$16,813	$22,148	$38,961	$4,435	$5,843	$10,278
FY 2015	$7,922	$14,990	$22,912	$7,922	$14,990	$22,912	$12,204	$23,091	$35,295
FY 2016	$8,421	$3,640	$12,061	$8,421	$3,640	$12,061	$13,155	$5,687	$18,842
FY 2017	$6,781	$1,375	$8,156	$6,781	$1,375	$8,156	$10,049	$2,037	$12,086
FY 2018[da]	$0	$0	$0	$0	$0	$0	$94	$5,495	$5,589
Total TPC	**$51,537**	**$43,463**	**$95,000**	**$51,537**	**$43,463**	**$95,000**	**$51,537**	**$43,463**	**$95,000**

[a] The financial schedule presented represents anticipated costs at the high end of the cost range pending CD-2/3 approval. The CD-4 date presented in Section 2 aligns with current plans for closure of the existing disposal capacity. The performance baseline established at CD-2/3 in 3Q FY 2014 will define the project schedule against which performance will be measured. Anticipated costs (and schedule) will be adjusted to reflect the approved performance baseline at CD-2/3.

6. Details of Project Cost Estimate[a]

(dollars in thousands)

	CD-1 Upper Bound Estimate	Previous Total Estimate[b]	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	3,220	3,220	N/A
Contingency	600	600	N/A
Total, Design	3,820	3,820	N/A
Construction			
Site Preparation	NA	NA	N/A
Equipment	10,000	10,000	N/A
Construction	51,520	51,520	N/A
Contingency	1,920	1,920	N/A
Total, Construction	63,440	63,440	N/A
Total, TEC	67,260	67,260	N/A
Contingency, TEC	2,520	2,520	N/A
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	8,030	8,030	N/A
Conceptual Design	3,240	3,240	N/A
Other OPC Costs	8,490	8,490	N/A
Start-Up	3,430	3,430	N/A
Contingency	4,550	4,550	N/A
Total, OPC except D&D	27,740	27,740	N/A
D&D			
D&D	0	0	N/A
Contingency	0	0	N/A
Total, D&D	0	0	N/A
Total, OPC	27,740	27,740	N/A
Contingency, OPC	4,550	4,550	N/A
Total, TPC	95,000	95,000	N/A
Total, Contingency	7,070	7,070	N/A

[a] CD-2 approval is expected during the 3Q FY 2014. All funding numbers are only estimates and based on the high end of the cost range approved at CD-1.
[b] Previous Total Estimate is from the FY 2014 PDS.

7. Schedule of Appropriation Requests

Request		Prior Years	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Outyears	Total
FY 2013 (Initial Request)	TEC	0	15,570	39,490	12,600	0	0	0	67,260
	OPC	11,990	1,740	1,490	1,600	7,810	3,110	0	27,740
	TPC	11,990	16,910	40,980	14,200	7,810	3,110	0	95,000
FY 2014[a]	TEC	0	0	37,471	23,919	5,870	0		67,260
	OPC	11,990	1,740	1,490	1,600	7,810	3,110		27,740
	TPC	11,990	1,740	38,961	25,519	13,680	3,110	0	95,000
FY 2015	TEC	0	0	37,471	19,789	5,870	4,130		67,260
	OPC	11,275	1,635	1,490	3,123	6,191	4,026		27,740
	TPC	11,275	1,635	38,961	22,912	12,061	8,156	0	95,000

8. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy[b] (fiscal quarter or date)	4Q FY 2020
Expected Useful Life[c] (number of years)	50 years
Expected Future Start of D&D of this capital asset (fiscal quarter)	4Q FY 2070

(Related Funding requirements)

(dollars in thousands)

	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	$4,585	$5,130	$91,700	$102,600
Closure[d]	N/A	N/A	$10,900	$0
Maintenance	$490	$490	$9,800	$9,800
Total, Operations & Closure	$5,075	$5,620	$112,400	$112,400

9. Required D&D Information

Area	Acres
Area of new construction	10 acres
Area of existing facility(s) being replaced and D&D'd by this project	0 acres
Area of other D&D outside the project	97 acres
Area of additional D&D space to meet the "one-for-one" requirement taken from the banked area	0 acres

[a] CD-2/3 approval is expected during the 3Q FY 2014. All funding numbers are only estimates and based on the high end of the cost range approved at CD-1.
[b] Date is based on plans for facility closure of the existing RH LLW Disposal Facility located at the Radioactive Waste Management Complex by the Office of Environmental Management (EM).
[c] Facility is designed for a 50 year life-expectancy. Funding requested will provide up to 20 years of disposal capacity and infrastructure with a life expectancy of 50 years to allow for expansion.
[d] Closure was included in Operations in previous submission.

Name(s) and site location(s) of existing facility(s) to be replaced:

The existing Remote-handled LLW disposal vaults are located within the Subsurface Disposal Area of the Radioactive Waste Management Complex. The RWMC, including the existing remote-handled LLW disposal vaults is funded by DOE EM as part of CERCLA remediation of Waste Area Group 7, Operable Unit 13/14 and is not included in this PDS.

10. Acquisition Approach

The INL Management and Oversight (M&O) partner will competitively procure the facility design and construction of the proposed onsite remote-handled LLW disposal facility utilizing a negotiated, design-build subcontract. A competitive procurement has been initiated to select a design-build contractor, and will be completed pending CD-2/3 in FY 2014. Responses to the request for proposal will be evaluated using a "best value" selection process that considers pricing, qualifications, and functionality; conformance with established requirements; safety record; and past performance.

Additional support subcontracts (e.g., monitoring well installation) are envisioned. Services will be solicited only from qualified firms via requests for proposal. Dependent on the action, selection will be based on technical merits and price considerations as provided for in the INL operating contractor's DOE-approved procurement procedures manual.

The types of contracts used for acquisition (e.g., fixed price or fixed labor rate) will vary, dependent on the specific scope of work. Financial incentives may be used, as appropriate, to motivate contractor performance, along with competition to select suppliers. To the extent feasible, procurements will be accomplished by fixed-price contracts awarded based on "best value."

Because this project is based on proven technology and a simplistic design, the design-build delivery method is considered the best acquisition method to complete the project. This method provides continuity between the designer and constructor, reducing project risks, conflicts, schedule, and cost.

The INL M&O partner will provide project management, construction oversight, and Safety and Quality inspection during construction. In addition, the INL M&O partner will also perform the following key project activities with subcontractor support and DOE-ID oversight: preparation of documents to support CDs; preparation of engineering design documentation; preparation of NEPA documentation, including a site study and an environmental assessment; preparation and support to DOE Headquarters approval of a performance assessment and composite analysis; preparation of disposal facility waste acceptance criteria; preparation of nuclear safety documentation; preparation of requests for proposal and performance specifications; subcontractor selection and contract administration; facility design and construction management; and, operational readiness activities.

13-D-904, KS Radiological Work and Storage Building
Kesselring Site, West Milton, NY
Project is for Design and Construction

1. Summary and Significant Changes

The most recent DOE O 413.3B approved Critical Decision (CD) is CD-1, Approve Alternative Selection and Cost Range, which was approved on June 8, 2012 with a preliminary cost range of $20,500 to $21,500 [a] and a CD-4 of FY 2017.

A Federal Project Director has been assigned to this project.

This Project Data Sheet (PDS) does not include a new start for the budget year.

This PDS is an update of the FY 2014 PDS.

The FY 2013 Request included $2,000 in funding for design in FY 2013 to initiate the project; no funding was appropriated pursuant to the Consolidated and Further Continuing Appropriations Act, 2013 (Public Law 113-6).

2. Critical Decision (CD) and D&D Schedule

(Fiscal Quarter or Date)

	CD-0	CD-1	Design Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2013	4/19/2011	2Q FY2012	3Q FY2014	3Q FY2013	3Q FY2014	4Q FY2016	3Q FY2012	3Q FY2013
FY 2014	4/19/2011	6/08/2012	2Q FY2015	2Q FY2014	3Q FY2014	3Q FY2017	3Q FY2012	3Q FY2013
FY 2015	4/19/2011	6/08/2012	3Q FY2015	2Q FY2014	3Q FY2014	1Q FY 2018	10/02/2012	2Q FY2014

CD-0 – Approve Mission Need
CD-1 – Approve Alternative Selection and Cost Range
CD-2 – Approve Performance Baseline
CD-3 – Approve Start of Construction
CD-4 – Approve Start of Operations or Project Closeout
D&D Start – Start of Demolition & Decontamination (D&D) work
D&D Complete – Completion of D&D work

3. Baseline and Validation Status

(Dollars in Thousands)

	TEC, Design	TEC, Construction	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
FY 2013	2,600	17,900	20,500	725	N/A	725	21,225
FY 2014	2,600	17,900	20,500	1,000	N/A	1,000	21,500
FY 2015	2,700	18,000	20,700	1,000	N/A	1,000	21,700

4. Project Description, Scope, and Justification

Mission Need
Various buildings at the Kesselring Site provide radiological work space and storage; however, the Kesselring Site's requirements for future operations (e.g., Land-based Prototype Refueling Overhaul, other site defueling operations) will exceed the site capacity of current buildings and enclosures. The Radiological Work and Storage Building (RWSB) will provide radiological work space and a radiological storage space to meet the space demand.

[a] As a result of the Consolidated and Further Continuing Appropriations Act, 2013 (Public Law 113-6), the delay of design funds resulted in an inflation adjustment of $200 to the TPC.

Scope and Justification – 13-D-904, KS Radiological Work and Storage Building

Radiological work space is currently housed in specific facilities at the Kesselring Site. However, starting with the Land-based Prototype Refueling Overhaul, the radiological work space requirement will exceed the capacity of current buildings and enclosures. Additional space is required to provide a radiologically controlled, clean-area work environment for activities that include access to the M-140 shipping containers, tooling preparation, training, and core basket/thermal shield discharge. The RWSB is required to be a radiologically controlled area. During the previous refueling, the equipment acquired low-level radiological contamination. Re-use of the existing refueling equipment was deemed more cost effective than the acquisition of new equipment.

Additionally, radiologically controlled materials are stored in certain buildings at the Kesselring Site. However, starting with the Land-based Prototype Refueling Overhaul, the radiological storage space need will exceed the capacity of current buildings. Additional space is required to store materials such as liquid waste, solid waste, parts, tooling, and items temporarily removed from radiologically controlled areas during availabilities and overhauls.

Naval Reactors thoroughly examined alternatives to construction of a new facility, including:

- Building a smaller RWSB and purchasing new equipment.
    - Equipment costs alone greatly exceed the current plan for the RWSB.
- Construction of temporary radiological work and storage facilities.
    - Increases long-term costs to NR by creating a need for another facility.
        - RWSB will be re-used to support other site defueling operations
- Use of existing spaces
    - Insufficient space on site.
    - Dockside Work Center (1080 sq. ft.) would cost $5,800 to make ready, equivalent space in RWSB costs ~$2,900.
    - Building 21 (2400 sq. ft.) would cost $4,400 to make ready, equivalent space in RWSB costs ~$1,600.
    - Existing spaces are not centrally located and would add inefficiency to Land-based Prototype Refueling Overhaul.

The RWSB MCP will provide:

- A new facility will be constructed on an existing storage pad within range of the Kesselring Site reactor servicing crane, a required capability to support the Land-based Prototype Refueling Overhaul.
- 3,600 sq. ft. of radiological trades work space.
- 6,426 sq. ft. of radiological storage space, which includes:
    - At least 3,600 sq. ft. within reach of the reactor servicing crane.
    - At least 2,800 sq. ft. to enhance the project's efficiency through centralization of operations and the re-use of existing equipment, which acquired low-level contamination from the previous overhaul.

The project is being conducted in accordance with the NR Implementation Bulletin for DOE O 413.3, Program and Project Management for the Acquisition of Capital Assets, and all appropriate project management requirements have been met.

5. Financial Schedule

(Dollars in Thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2013	0 [a]	0	0
FY 2014	600	600	600
FY 2015	2,100	2,100	1,800
FY 2016	0	0	300
Total, Design	2,700	2,700	2,700
Construction			
FY 2015	18,000	18,000	3,400
FY 2016	0	0	11,300
FY 2017	0	0	3,300
Total, Construction	18,000	18,000	18,000
TEC			
FY 2013	0 [a]	0	0
FY 2014	600	600	600
FY 2015	20,100	20,100	5,200
FY 2016	0	0	11,600
FY 2017	0	0	3,300
Total, TEC	20,700	20,700	20,700
Other Project Cost (OPC)			
OPC except D&D			
FY 2011	200	200	0
FY 2012	0	0	200
FY 2013	100	100	100
FY 2014	100	100	100
FY 2015	100	100	100
FY 2016	400	400	400
FY 2017	100	100	100
Total, OPC except D&D	1,000	1,000	1,000
D&D	N/A	N/A	N/A
Total, D&D	N/A	N/A	N/A
OPC			
FY 2011	200	200	0
FY 2012	0	0	200
FY 2013	100	100	100
FY 2014	100	100	100
FY 2015	100	100	100
FY 2016	400	400	400
FY 2017	100	100	100
Total OPC	1,000	1,000	1,000

[a] The FY 2013 Enacted amount is $0; however $2,000 was originally requested. This funding has been adjusted for inflation and requested in FY 2015.

	(Dollars in Thousands)		
	Appropriations	Obligations	Costs
Total Project Cost (TPC)			
FY 2011	200	200	0
FY 2012	0	0	200
FY 2013	100	100	100
FY 2014	700	700	700
FY 2015	20,200	20,200	5,300
FY 2016	400	400	12,000
FY 2017	100	100	3,400
Total, TPC	21,700	21,700	21,700

6. Details of Project Cost Estimate

(Dollars in Thousands)

	Current Total Estimate	Previous Total Estimate[a]	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	2,400	2,400	N/A
Contingency	300	200	N/A
Total, Design	2,700	2,600	N/A
Construction			
Site Preparation	300	0	N/A
Equipment	1,000	0	N/A
Other Construction	14,900	16,100	N/A
Contingency	1,800	1,800	N/A
Total, Construction	18,000	17,900	N/A
Total, TEC	20,700	20,500	N/A
Contingency, TEC	2,100	2,000	N/A
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	0	0	N/A
Conceptual Design	200	200	N/A
Start-up	800	800	N/A
Contingency	0	0	N/A
Total, OPC except D&D	1,000	1,000	N/A
D&D	0	0	N/A
Total, D&D	0	0	N/A
Total, OPC	1,000	1,000	N/A
Contingency, OPC	0	0	N/A
Total, TPC	21,700	21,500	N/A
Total, Contingency	2,100	2,000	N/A

[a] Previous total estimate is from the FY 2014 PDS.

7. Schedule of Appropriation Requests

(Dollars in Thousands)

		Prior Years	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	Outyears	Total
FY 2013 (Initial Request)	TEC	2,000	600	17,900	0	0	0	0	0	20,500
	OPC	100	100	100	425	0	0	0	0	725
	TPC	100	700	18,000	425	0	0	0	0	21,225
FY 2014	TEC	0 [a]	600	17,900	0	0	0	0	0	18,500
	OPC	300	100	100	400	100	0	0	0	1,000
	TPC	300	700	18,000	400	100	0	0	0	19,500
FY 2015	TEC	0	600	20,100	0	0	0	0		20,700
	OPC	300	100	100	400	100	0	0		1,000
	TPC	300	700	20,200	400	100	0	0	0	21,700

8. Related Operations and Maintenance Funding Requirements

Start of Operation of Beneficial Occupancy (fiscal quarter or date)	1Q FY2018
Expected Useful Life (number of years)	40
Expected Future Start of D&D of this capital asset (fiscal quarter)	1Q FY2058

(Related Funding Requirements)

(Dollars in Thousands)

	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	308	N/A	12,300	N/A
Maintenance	308	N/A	12,300	N/A
Total, Operations and Maintenance	616	N/A	24,600	N/A

9. Required D&D Information

Area	Square Feet
Area of new construction	13,600
Area of existing facility(s) being replaced and D&D'ed by this project	2,531
Area of additional D&D space to meet the "one-for-one" requirement from the banked area	11,069

Name(s) and site location(s) of existing facility(s) to be replaced: Kesselring Site buildings 80C/D/E/F will be demolished and replaced with this project. The additional square footage will be offset from banked area from the demolition of Kesselring Site building 80 I/IX and Bettis Laboratory C/CA/CAM Complex.

10. Acquisition Approach

The acquisition strategy utilizes a design-build methodology. The design-build contract will be a negotiated procurement and the basis of award will be a determination of best value through a formalized selection process. The contract type will be fixed price.

[a] The FY 2013 Enacted amount is $0; however $2,000 was originally requested. This funding has been adjusted for inflation and requested in FY2015.

10-D-903, Security Upgrades, KAPL,
Kesselring Site, West Milton, NY
Project is for Design and Construction

1. Summary and Significant Changes

The most recent DOE O 413.3B approved Critical Decision (CD) is CD-3, Approve Start of Construction, which was approved on April 10, 2012, with a Total Project Cost of $24,188 and a CD-4 of 4Q FY 2016.

A Federal Project Director has been assigned to this project.

This Project Data Sheet (PDS) does not include a new start for the budget year.

This PDS is an update of the FY 2013 PDS. No funding was appropriated pursuant to Consolidated and Further Continuing Appropriations Act, 2013 (Public Law 113-6), therefore this project had to be reprofiled to an expected CD-4 date of 4Q FY 2019. There have been no significant changes to scope or risks associated with this project. The Total Project Cost has increased to $26,080 due to contract cost increases and inflation as a result of reprofiling the project across multiple fiscal years.

2. Critical Decision (CD) and D&D Schedule

(fiscal quarter or date)

	CD-0	CD-1	Design Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2010	4/22/2008	2Q FY2009	2Q FY2013	TBD	TBD	TBD	TBD	TBD
FY 2011	4/22/2008	4Q FY2009	4Q FY2012	TBD	TBD	TBD	TBD	TBD
FY 2012	4/22/2008	8/13/2010	4Q FY2012	TBD	TBD	TBD	TBD	TBD
FY 2013	4/22/2008	8/13/2010	2Q FY2012	8/01/2011	2Q FY2012	4Q FY2016	1Q FY2012	2Q FY2017
FY 2015	4/22/2008	8/13/2010	3Q FY2014	8/01/2011	4/10/2012	4Q FY2019	1/15/2013	1Q FY2014

CD-0 – Approve Mission Need
CD-1 – Approve Alternative Selection and Cost Range
CD-2 – Approve Performance Baseline
CD-3 – Approve Start of Construction
CD-4 – Approve Start of Operations or Project Closeout
D&D Start – Start of Demolition & Decontamination (D&D) work
D&D Complete – Completion of D&D work

3. Baseline and Validation Status

(Dollars in Thousands)

	TEC, PED	TEC, Construction	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
FY 2010	2,000	TBD	TBD	400	TBD	TBD	TBD
FY 2011	2,000	TBD	TBD	300	TBD	TBD	TBD
FY 2012	2,000	TBD	TBD	400	TBD	TBD	TBD
FY 2013	1,999	19,000	20,999	1,672	1,300	2,972	23,971
FY 2015	1,999	20,892	22,891	1,861	1,328	3,189	26,080

4. Project Description, Scope, and Justification

Mission Need

The objective of this project is to construct a new site entrance building and to replace and upgrade security related infrastructure at the Kesselring Site due to the advanced age and level of degradation of the currently installed security systems. The project will upgrade the security perimeter, perimeter lighting system, alarm system, and the site entrance building.

Scope and Justification - 10-D-903, Security Upgrades, KAPL

The Kesselring Site provides mission critical support to the Naval Reactors program. Effective site security is necessary in support of this mission and for the protection of employees, equipment, and national security. Security protection strategies, equipment, and facilities are intended to deter, detect assess, delay, respond to, and neutralize adversary intrusion or other malevolent acts. An up-to-date and reliable security perimeter system is a key element of these security strategies. The Kesselring Site Security Upgrades project will replace and upgrade security related infrastructure at the Kesselring Site including the Site Entrance Building and portions of the Site Perimeter Fence.

The project is being conducted in accordance with the NR Implementation Bulletin for DOE O 413.3B, Program and Project Management for the Acquisition of Capital Assets, and all appropriate project management requirements have been met.

5. Financial Schedule

	(Dollars in Thousands)		
	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2010	1,500	1,500	5
FY 2011	399	399	864
FY 2012	100	100	1,026
FY 2013	0	0	104
Total, Design	1,999	1,999	1,999
Construction			
FY 2013	92	92	0
FY 2014	0	0	92
FY 2015	7,400	7,400	2,400
FY 2016	500	500	5,200
FY 2017	12,900	12,900	4,900
FY 2018	0	0	4,900
FY 2019	0	0	3,400
Total, Construction	20,892	20,892	20,892
TEC			
FY 2010	1,500	1,500	5
FY 2011	399	399	864
FY 2012	100	100	1,026
FY 2013	92	92	104
FY 2014	0	0	92
FY 2015	7,400	7,400	2,400
FY 2016	500	500	5,200
FY 2017	12,900	12,900	4,900
FY 2018	0	0	4,900
FY 2019	0	0	3,400
Total, TEC	22,891	22,891	22,891
Other Project Cost (OPC)			
OPC except D&D			
FY 2008	300	300	300
FY 2009	0	0	0
FY 2010	100	100	100
FY 2011	0	0	0
FY 2012	200	200	200
FY 2013	0	0	0
FY 2014	0	0	0
FY 2015	0	0	0
FY 2016	200	200	200
FY 2017	361	361	361

	(Dollars in Thousands)		
	Appropriations	Obligations	Costs
FY 2018	350	350	350
FY 2019	350	350	350
Total, OPC except D&D	1,861	1,861	1,861
D&D			
FY 2012	1,000	1,000	0
FY 2013	328	328	1,000
FY 2014	0	0	0
FY 2015	0	0	0
FY 2016	0	0	0
FY 2017	0	0	0
FY 2018	0	0	0
FY 2019	0	0	328
Total, D&D	1,328	1,328	1,328
OPC			
FY 2008	300	300	300
FY 2009	0	0	0
FY 2010	100	100	100
FY 2011	0	0	0
FY 2012	1,200	1,200	200
FY 2013	328	328	1,000
FY 2014	0	0	0
FY 2015	0	0	0
FY 2016	200	200	200
FY 2017	361	361	361
FY 2018	350	350	350
FY 2019	350	350	678
Total OPC	3,189	3,189	3,189
Total Project Cost (TPC)			
FY 2008	300	300	300
FY 2009	0	0	0
FY 2010	1,600	1,600	105
FY 2011	399	399	864
FY 2012	1,300	1,300	1,226
FY 2013	420	420	1,104
FY 2014	0	0	92
FY 2015	7,400	7,400	2,400
FY 2016	700	700	5,400
FY 2017	13,261	13,261	5,261
FY 2018	350	350	5,250
FY 2019	350	350	4,078
Total, TPC	26,080	26,080	26,080

6. Details of Project Cost Estimate

(Dollars in Thousands)

	Current Total Estimate	Previous Total Estimate [a]	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	1,949	1,850	1,850
Contingency	50	149	149
Total, Design	1,999	1,999	1,999
Construction			
Site Preparation	0	0	0
Equipment	85	85	85
Other Construction	19,007	16,088	16,088
Contingency	1,800	2,827	2,827
Total, Construction	20,892	19,000	19,000
Total, TEC	22,891	20,999	20,999
Contingency, TEC	1,850	2,976	2,976
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	0	0	0
Conceptual Design	372	372	372
Start-up	765	765	765
Contingency	724	535	535
Total, OPC except D&D	1,861	1,672	1,672
D&D			
D&D	1,228	1,230	1,230
Contingency	100	70	70
Total, D&D	1,328	1,300	1,300
Total, OPC	3,189	2,972	2,972
Contingency, OPC	326	605	605
Total, TPC	26,080	23,971	23,791
Total, Contingency	2,176	3,581	3,581

[a] Previous Total Estimate is from the FY 2013 PDS.

7. Schedule of Appropriation Requests

(Dollars in Thousands)

		Prior Years	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	Outyears	Total
FY 2010	TEC	2,000	0	0	0	0	0	0	0	2,000
	OPC	400	0	0	0	0	0	0	0	400
	TPC	2,400	0	0	0	0	0	0	0	2,400
FY 2011	TEC	2,000	0	0	0	0	0	0	0	2,000
	OPC	300	0	0	0	0	0	0	0	300
	TPC	2,300	0	0	0	0	0	0	0	2,300
FY 2012	TEC	2,000	0	0	0	0	0	0	0	2,000
	OPC	400	0	0	0	0	0	0	0	400
	TPC	2,400	0	0	0	0	0	0	0	2,400
FY 2013 Performance Baseline	TEC	20,999	0	0	0	0	0	0	0	20,999
	OPC	2,172	100	300	400	0	0	0	0	2,972
	TPC	23,171	100	300	400	0	0	0	0	23,971
FY 2015[a]	TEC	2,091	0	7,400	500	12,900	0	0	0	22,891
	OPC	1,928	0	0	200	361	350	350	0	3,189
	TPC	4,019	0	7,400	700	13,261	350	350	0	26,080

8. Related Operations and Maintenance Funding Requirements

Start of Operation of Beneficial Occupancy (fiscal quarter or date)	4Q FY 2019
Expected Useful Life (number of years)	40
Expected Future Start of D&D of this capital asset (fiscal quarter)	1Q FY 2060

(Related Funding Requirements)

(Dollars in Thousands)

	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	96	N/A	3,850	4,506
Maintenance	96	N/A	3,850	4,506
Total, Operations and Maintenance	192	N/A	7,700	9,012

9. Required D&D Information

Area	Square Feet
Area of new construction	7,952
Area of existing facility(s) being replaced and D&D'ed by this project	6,282
Area of additional D&D space to meet the "one-for-one" requirement from the banked area	1,670

Name(s) and site location(s) of existing facility(s) to be replaced: The current Kesselring Site entrance buildings (Building 1 and Building 2) will be replaced with this project. The additional square footage of this project will be offset from banked area from the demolition of buildings 49/50, 67, M3, and M1 at the Kesselring Site.

[a] Full funding was requested in FY 2013 but not received pursuant to the Consolidated and Further Continuing Appropriations Act, 2013 (Public Law 113-6). Project was re-profiled.

10. Acquisition Approach

Design has been contracted via a cost plus fixed fee contract with the A/E. Separate construction contracts will be awarded for construction of the site entrance building, perimeter security upgrades, and remediation of the existing facilities. The construction contracts will be design-bid-build and fixed price contracts.

08-D-190, Expended Core Facility (ECF) M-290 Receiving/Discharge Station,
Naval Reactors Facility, Idaho
Project is for Design and Construction

1. Summary and Significant Changes

The most recent DOE O 413.3 approved Critical Decision (CD) is CD-3, Approve Start of Construction, which was approved on April 25, 2011, with a Total Project Cost of $75,200 and a CD-4 of 1Q FY 2015.

A Federal Project Director has been assigned to this project.

This Project Data Sheet (PDS) does not include a new start for the budget year.

This PDS is an update of the FY 2013 Reprogramming PDS. The FY 2013 reprogramming shifted resources for this project in FY 2013 to support other program work. The original FY 2013 request was $5,700. The reprogramming of this funding will result in $3,700 of scope removed from the project including a reduction in the length of the perimeter fencing surrounding the new facility and the removal of stone-hardening of the overpack transfer pathway, as well as the removal of $2,000 in project contingency. This reduced funding will not impact the facility's ability to accomplish its mission. The reprogramming action will result in an updated Total Project Cost of $69,618.

2. Critical Decision (CD) and D&D Schedule

(Fiscal Quarter or Date)

	CD-0	CD-1	Design Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2008	11/30/2006	4Q FY2007	2Q FY2010	TBD	TBD	TBD	N/A	N/A
FY 2009	11/30/2006	8/17/2007	2Q FY2010	TBD	TBD	TBD	N/A	N/A
FY 2010	11/30/2006	8/17/2007	2Q FY2010	3Q FY2009	1Q FY2010	2Q FY2014	N/A	N/A
FY 2011	11/30/2006	8/17/2007	3Q FY2010	1Q FY2010	1Q FY2011	3Q FY2014	N/A	N/A
FY 2012 PB	11/30/2006	8/17/2007	6/28/2010	11/30/2009	2Q FY2011	1Q FY2015	N/A	N/A
FY 2013	11/30/2006	8/17/2007	6/28/2010 [a]	11/30/2009	4/25/2011	1Q FY2015	N/A	N/A
FY 2014	11/30/2006	8/17/2007	6/28/2010 [a]	11/30/2009	4/25/2011	1Q FY2015	N/A	N/A
FY 2013 [b]	11/30/2006	8/17/2007	6/28/2010 [a]	11/30/2009	4/25/2011	1Q FY2015	N/A	N/A
FY 2015	11/30/2006	8/17/2007	6/28/2010	11/30/2009	4/25/2011	1Q FY2015	N/A	N/A

CD-0 – Approve Mission Need
CD-1 – Approve Alternative Selection and Cost Range
CD-2 – Approve Performance Baseline
CD-3 – Approve Start of Construction
CD-4 – Approve Start of Operations or Project Closeout
D&D Start – Start of Demolition & Decontamination (D&D) work
D&D Complete – Completion of D&D work

3. Baseline and Validation Status

(Dollars in Thousands)

	TEC, Design	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2008	850	TBD	TBD	298	N/A	TBD	TBD

[a] 6/28/2010 represents the date that the preliminary design for the MCP was approved; however, the approval contained several comments and actions impacting the design that required additional funds going into FY 2011.
[b] This PDS was submitted as part of the Naval Reactors' Reprogramming in FY 2013 and was an update to the FY 2014 PDS for 08-D-190.

(Dollars in Thousands)

	TEC, Design	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2009	1,045	TBD	TBD	298	N/A	TBD	TBD
FY 2010	1,045	21,500	22,545	649	N/A	TBD	23,194
FY 2011	4,081	66,864	70,945	4,241	N/A	TBD	75,186
FY 2012 PB	4,081	66,864	70,945	4,241	N/A	4,241	75,186
FY 2013	4,258	66,637	70,895	4,241	N/A	4,241	75,136
FY 2014	4,258	66,637	70,895	4,423	N/A	4,423	75,318
FY 2013[a]	4,258	60,937	65,195	4,423	N/A	4,423	69,618
FY 2015	4,258	60,937	65,195	4,423	N/A	4,423	69,618

4. Project Description, Scope, and Justification

Mission Need

The M-290 Receiving/Discharge Station is needed to provide the capability to use the M-290 transportation cask to support both naval spent nuclear fuel canister shipments to a geologic repository or interim storage facility and naval spent nuclear fuel shipments from shipyards after refueling and defueling aircraft carriers.

Scope and Justification - 08-D-190, Expended Core Facility (ECF) M-290 Receiving/Discharge Station

The M-290 shipping container system will allow direct loading of carrier naval spent nuclear fuel without temporary storage and disassembly work at the shipyard as currently required for existing smaller M-140 shipping containers. The direct loading method improves shipyard operations, supports aggressive refueling and inactivation (defueling) schedules, and mitigates potential security risks associated with holding naval spent nuclear fuel at the shipyard. The full-length carrier naval spent nuclear fuel to be shipped in the M-290 is approximately twice as long as the fuel modules typically sent to ECF. As such, ECF currently does not have facilities capable of handling the larger, heavier, M-290 shipping container. The project will also provide the capability to ship naval spent nuclear fuel from ECF to a permanent repository or interim storage facility using the M-290 shipping container.

This project will accomplish the following: 1) construct a new facility to allow the receipt and handling of M-290 shipping containers, 2) incorporate overpack storage expansion to store naval spent nuclear fuel overpacks, and 3) construct related support facilities and associated infrastructure. One key aspect of this new facility will be the capability for concurrent receipt of fuel from INTEC and receipt and handling of M-290 shipping containers.

The project is being conducted in accordance with the NR Implementation Bulletin for DOE O 413.3B, Program and Project Management for the Acquisition of Capital Assets, and all appropriate project management requirements have been met.

[a] This PDS was submitted as part of the Naval Reactors' Reprogramming in FY 2013 and was an update to the FY 2014 PDS for 08-D-190.

5. Financial Schedule

	(Dollars in Thousands)		
	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2008	545	545	436
FY 2009	300	300	95
FY 2010	3,236	3,236	3,507
FY 2011	177	177	220
Total, Design	4,258	4,258	4,258
Construction			
FY 2010	6,264	6,264	212
FY 2011	24,773	24,773	8,537
FY 2012	27,800	27,800	18,850
FY 2013	0 [a]	0	23,100
FY 2014	1,700	1,700	9,200
FY 2015	400	400	1,038
Total, Construction	60,937	60,937	60,937
TEC			
FY 2008	545	545	436
FY 2009	300	300	95
FY 2010	9,500	9,500	3,719
FY 2011	24,950	24,950	8,757
FY 2012	27,800	27,800	18,850
FY 2013	0[a]	0	23,100
FY 2014	1,700	1,700	9,200
FY 2015	400	400	1,038
Total, TEC	65,195	65,195	65,195
Other Project Cost (OPC)			
OPC except D&D			
FY 2007	144	144	144
FY 2008	418	418	418
FY 2009	1,999	1,999	1,999
FY 2010	107	107	107
FY 2011	580	580	580
FY 2012	118	118	118
FY 2013	297	297	297
FY 2014	260	260	260

[a] The FY 2013 Enacted TEC amount, net of sequestration, was $25,589. The amount in the FY 2013 budget request was $5,700. After an FY 2013 reprogramming, the applied funding was $0.

	(Dollars in Thousands)		
	Appropriations	Obligations	Costs
FY 2015	500	500	500
Total, OPC except D&D	4,423	4,423	4,423
D&D	N/A	N/A	N/A
Total, D&D	N/A	N/A	N/A
OPC			
FY 2007	144	144	144
FY 2008	418	418	418
FY 2009	1,999	1,999	1,999
FY 2010	107	107	107
FY 2011	580	580	580
FY 2012	118	118	118
FY 2013	297	297	297
FY 2014	260	260	260
FY 2015	500	500	500
Total, OPC	4,423	4,423	4,423
Total Project Cost (TPC)			
FY 2007	144	144	144
FY 2008	963	963	854
FY 2009	2,299	2,299	2,094
FY 2010	9,607	9,607	3,826
FY 2011	25,530	25,530	9,337
FY 2012	27,918	27,918	18,968
FY 2013	297	297	23,397
FY 2014	1,960	1,960	9,460
FY 2015	900	900	1,538
Total, TPC	69,618	69,618	69,618

6. Details of Project Cost Estimate

(Dollars in Thousands)

	Current Total Estimate	Previous Total Estimate[a]	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	4,258	4,258	3,770
Contingency	0	0	311
Total, Design	4,258	4,258	4,081
Construction			
Site Preparation	0	0	0
Equipment	10,053	10,053	9,901
Other Construction	48,778	50,307	47,407
Contingency	2,106	6,277	9,556
Total, Construction	60,937	66,637	66,864
Total, TEC	65,195	70,895	70,945
Contingency, TEC	2,106	6, 277	9,867
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	655	655	655
Conceptual Design	1,310	1,310	1,310
Start-up	2,458	2,458	2,276
Contingency	0	0	0
Total, OPC except D&D	4,423	4,423	4,241
D&D			
D&D	N/A	N/A	N/A
Total, D&D	N/A	N/A	N/A
Total, OPC	4,423	4,423	4,241
Contingency, OPC	0	0	0
Total, TPC	69,618	75,318	75,186
Total, Contingency	2,106	6,277	9,867

[a] Previous Total Estimate is from the FY2014 PDS.

7. Schedule of Appropriation Requests

(Dollars in Thousands)

		Prior Years	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	Outyears	Total
FY 2009	TEC	1,045	0	0	0	0	0	0	0	1,045
	OPC	298	0	0	0	0	0	0	0	298
	TPC	1,343	0	0	0	0	0	0	0	1,343
FY 2010	TEC	22,545	0	0	0	0	0	0	0	22,545
	OPC	469	180	0	0	0	0	0	0	649
	TPC	23,014	180	0	0	0	0	0	0	23,194
FY 2011	TEC	68,845	1,700	400	0	0	0	0	0	70,945
	OPC	3,481	260	500	0	0	0	0	0	4,241
	TPC	72,326	1,960	900	0	0	0	0	0	75,186
FY 2012 Performance Baseline	TEC	68,845	1,700	400	0	0	0	0	0	70,945
	OPC	3,481	260	500	0	0	0	0	0	4,241
	TPC	72,326	1,960	900	0	0	0	0	0	75,186
FY 2013	TEC	68,795	1,700	400	0	0	0	0	0	70,895
	OPC	3,481	260	500	0	0	0	0	0	4,241
	TPC	72,276	1,960	900	0	0	0	0	0	75,136
FY 2014	TEC	68,795	1,700	400	0	0	0	0	0	70,895
	OPC	3,663	260	500	0	0	0	0	0	4,423
	TPC	72,458	1,960	900	0	0	0	0	0	75,318
FY 2015	TEC	63,095	1,700	400	0	0	0	0	0	65,195
	OPC	3,663	260	500	0	0	0	0	0	4,423
	TPC	66,758	1,960	900	0	0	0	0	0	69,618

8. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	1Q FY 2015
Expected Useful Life (number of years)	40
Expected Future Start of D&D of this capital asset (fiscal quarter)	2Q FY 2055

(Related Funding Requirements)

(Dollars in Thousands)

	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	350	350	21,605	21,605
Maintenance	857	857	52,902	52,902
Total, Operations and Maintenance	1,207	1,207	74,507	74,507

9. Required D&D Information

Area	Square Feet
Area of new construction	62,556
Area of existing facility(s) being replaced and D&D'ed by this project	N/A
Area of additional D&D space to meet the "one-for-one" requirement from the banked area	N/A

Name(s) and site location(s) of existing facility(s) to be replaced: No offsetting D&D will be identified for this project. The Naval Reactors Facility square footage will expand to meet mission-critical work in support of spent fuel processing due to insufficient excess facilities to support planned construction.

10. Acquisition Approach

The Program's A/E subcontractor performed construction design to support development of a construction solicitation package. The construction contract is designated as a fixed-price contract for procurement and construction and was awarded on the basis of competitive bidding.

Naval Reactors	FY 2013 Current	FY 2014 Enacted	FY 2015 Request
Bettis Atomic Power Laboratory			
Naval Reactors Program			
Naval Reactors Program	365,000	396,334	565,500
Total, Bettis Atomic Power Laboratory	**365,000**	**396,334**	**565,500**
Idaho National Laboratory			
Naval Reactors Program			
Naval Reactors Program	130,600	154,412	166,191
Total, Idaho National Laboratory	**130,600**	**154,412**	**166,191**
Knolls Atomic Power Laboratory			
Naval Reactors Program			
Naval Reactors Program	384,492	438,607	523,213
Total, Knolls Atomic Power Laboratory	**384,492**	**438,607**	**523,213**
Naval Research Laboratory			
Naval Reactors Program			
Naval Reactors Program	2,486	0	0
Program Direction			
Program Direction	18,510	18,515	20,100
Total, Naval Research Laboratory	**20,996**	**18,515**	**20,100**
Washington Headquarters			
Naval Reactors Program			
Naval Reactors Program	68,328	76,418	75,596
Program Direction			
Program Direction	24,702	24,697	26,500
Total, Washington Headquarters	**93,030**	**101,115**	**102,096**
Total, Naval Reactors	**994,118**	**1,108,983**	**1,377,100**

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 the House of Representatives and the Senate 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 the House of Representatives and the Senate 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 the House of Representatives and the Senate 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 “Final Bill” column in the “Department of Energy” table included under the heading “Title III—Department of Energy” in the explanatory statement described in section 4 (in the matter preceding division A of this consolidated Act).

(e) The amounts made available by this title may be reprogrammed for any program, project, or activity, and the Department shall notify the Committees on Appropriations of the House of Representatives and the Senate at least 30 days prior to the use of any proposed reprogramming which 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 the House of Representatives and the Senate 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.**]**

SEC. **[**302**]***301*. 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. **[**303**]***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. 414) during fiscal year **[**2014**]** *2015* until the enactment of the Intelligence Authorization Act for fiscal year **[**2014**]** *2015*.

SEC. **[**304**]***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 Health, Safety, and Security to ensure the project is in compliance with nuclear safety requirements.

SEC. **[**305**]***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. Section 15(g) of Public Law 85–536 (15 U.S.C. 644), as amended, is further amended by striking paragraph (3).

[SEC. 306. (a) Any determination (including a determination made prior to the date of enactment of this Act) by the Secretary pursuant to section 3112(d)(2)(B) of the USEC Privatization Act (110 Stat. 1321–335), as amended, shall be valid for not more than 2 calendar years subsequent to such determination.

(b) Not less than 30 days prior to the provision of uranium in any form the Secretary shall notify the House and Senate Committees on Appropriations of the following:

(1) the amount of uranium to be provided;

(2) an estimate by the Secretary of the gross fair market value of the uranium on the expected date of the provision of the uranium;

(3) the expected date of the provision of the uranium;

(4) the recipient of the uranium; and

(5) the value the Secretary expects to receive in exchange for the uranium, including any adjustments to the gross fair market value of the uranium.**]**

[SEC. 307. Section 20320 of the Continuing Appropriations Resolution, 2007, Public Law 109–289, division B, as amended by the Revised Continuing Appropriations Resolution, 2007, Public Law 110–5, is amended by striking in subsection (c) “an annual review” after “conduct” and inserting in lieu thereof “a review every three years”.**]**

[SEC. 308. None of the funds made available by this or any subsequent Act for fiscal year 2014 or any fiscal year hereafter may be used to pay the salaries of Department of Energy employees to carry out the amendments made by section 407 of division A of the American Recovery and Reinvestment Act of 2009.**]**

SEC. **[**309**]***306*. Notwithstanding section 307 of Public Law 111–85, of the funds made available by the Department of Energy for activities at Government-owned, contractor-operated laboratories funded in this or any subsequent Energy and Water Development Appropriations Act for any fiscal year, the Secretary may authorize a specific amount, not to exceed 6 percent of such funds, to be used by such laboratories for laboratory directed research and development.

[SEC. 310. Notwithstanding section 301(c) of this Act, none of the funds made available under the heading “Department of Energy—Energy Programs—Science” may be used for a multiyear contract, grant, cooperative agreement, or Other Transaction Agreement of $1,000,000 or less unless the contract, grant, cooperative agreement, or Other Transaction Agreement is funded for the full period of performance as anticipated at the time of award.**]**

[SEC. 311. (a) Not later than June 30, 2014, the Secretary shall submit to the Committees on Appropriations of the House of Representatives and the Senate a tritium and enriched uranium management plan that provides—

(1) an assessment of the national security demand for tritium and low and highly enriched uranium through 2060;

(2) a description of the Department of Energy's plan to provide adequate amounts of tritium and enriched uranium for national security purposes through 2060; and

(3) an analysis of planned and alternative technologies which are available to meet the supply needs for tritium and

enriched uranium for national security purposes, including weapons dismantlement and down-blending.
(b) The analysis provided by (a)(3) shall include a detailed estimate of the nearand long-term costs to the Department of Energy should the Tennessee Valley Authority no longer be a viable tritium supplier.**]**

[SEC. 312. The Secretary of Energy shall submit to the congressional defense committees (as defined in U.S.C. 101(a)(16)), a report on each major warhead refurbishment program that reaches the Phase 6.3 milestone, and not later than April 1, 2014 for the B61–12 life extension program, that provides an analysis of alternatives which includes—

(1) a full description of alternatives considered prior to the award of Phase 6.3;
(2) a comparison of the costs and benefits of each of those alternatives, to include an analysis of trade-offs among cost, schedule, and performance objectives against each alternative considered;
(3) identification of the cost and risk of critical technology elements associated with each alternative, including technology maturity, integration risk, manufacturing feasibility, and demonstration needs;
(4) identification of the cost and risk of additional capital asset and infrastructure capabilities required to support production and certification of each alternative;
(5) a comparative analysis of the risks, costs, and scheduling needs for any military requirement intended to enhance warhead safety, security, or maintainability, including any requirement to consolidate and/or integrate warhead systems or mods as compared to at least one other feasible refurbishment alternative the Nuclear Weapons Council considers appropriate; and
(6) a life-cycle cost estimate for the alternative selected that details the overall cost, scope, and schedule planning assumptions. For the B61–12 life extension program, the life cycle cost estimate shall include an analysis of reduced life cycle costs for Option 3b, including cost savings from consolidating the different B61 variants.**]**

[SEC. 313. (a) IN GENERAL.—Subject to subsections (b) through (d), the Secretary may appoint, without regard to the provisions of chapter 33 of title 5, United States Code, governing appointments in the competitive service, exceptionally well qualified individuals to scientific, engineering, or other critical technical positions.

(b) LIMITATIONS.—
(1) NUMBER OF POSITIONS.—The number of critical positions authorized by subsection (a) may not exceed 120 at any one time in the Department.
(2) TERM.—The term of an appointment under subsection (a) may not exceed 4 years.
(3) PRIOR EMPLOYMENT.—An individual appointed under subsection (a) shall not have been a Department employee during the 2-year period ending on the date of appointment.
(4) PAY.—
(A) IN GENERAL.—The Secretary shall have the authority to fix the basic pay of an individual appointed under subsection (a) at a rate to be determined by the Secretary up to level I of the Executive Schedule without regard to the civil service laws.
(B) TOTAL ANNUAL COMPENSATION.—The total annual compensation for any individual appointed under subsection (a) may not exceed the highest total annual compensation payable at the rate determined under section 104 of title 3, United States Code.
(5) ADVERSE ACTIONS.—An individual appointed under subsection
(a) may not be considered to be an employee for purposes of subchapter II of chapter 75 of title 5, United States Code.
(c) REQUIREMENTS.—
(1) IN GENERAL.—The Secretary shall ensure that—
(A) the exercise of the authority granted under subsection (a) is consistent with the merit principles of section 2301 of title 5, United States Code; and
(B) the Department notifies diverse professional associations and institutions of higher education, including those serving the interests of women and racial or ethnic minorities that are underrepresented in scientific, engineering, and mathematical fields, of position openings as appropriate.
(2) REPORT.—Not later than 2 years after the date of enactment of this Act, the Secretary and the Director of the Office of Personnel Management shall submit to Congress a report on the use of the authority provided under this section that includes, at a minimum, a description or analysis of—
(A) the ability to attract exceptionally well qualified scientists, engineers, and technical personnel;
(B) the amount of total compensation paid each employee hired under the authority each calendar year; and
(C) whether additional safeguards or measures are necessary to carry out the authority and, if so, what action, if any, has been taken to implement the safeguards or measures.
(d) TERMINATION OF EFFECTIVENESS.—The authority provided by this section terminates effective on the date that is 4 years after the date of enactment of this Act.**]**

[SEC. 314. Section 804 of Public Law 110–140 (42 U.S.C. 17283) is hereby repealed.]

[SEC. 315. Section 205 of Public Law 95–91 (42 U.S.C. 7135), as amended, is hereby further amended:
(1) in paragraph (i)(1) by striking “once every two years” and inserting “once every four years”; and
(2) in paragraph (k)(1) by striking “once every three years” and inserting “once every four years”.]

[SEC. 316. Notwithstanding any other provision of law, the Department may use funds appropriated by this title to carry out a study regarding the conversion to contractor performance of any function performed by Federal employees at the New Brunswick Laboratory, pursuant to Office of Management and Budget Circular A-76 or any other administrative regulation, directive, or policy.]

[SEC. 317. Of the amounts appropriated for non-defense programs in this title, $7,000,000 are hereby reduced to reflect savings from limiting foreign travel for contractors working for the Department of Energy, consistent with similar savings achieved for Federal employees. The Department shall allocate the reduction among the non-security appropriations made in this title.]

[SEC. 318. Section 15(g) of Public Law 85–536 (15 U.S.C. 644), as amended, is hereby further amended by inserting the following at the end: “(3) First tier subcontracts that are awarded by Management and Operating contractors sponsored by the Department of Energy to small business concerns, small businesses concerns owned and controlled by service disabled veterans, qualified HUBZone small business concerns, small business concerns owned and controlled by socially and economically disadvantaged individuals, and small business concerns owned and controlled by women, shall be considered toward the annually established agency and Government-wide goals for procurement contracts awarded.”.]

[SEC. 319. (a) ESTABLISHMENT.—The Secretary shall establish an independent commission to be known as the “Commission to Review the Effectiveness of the National Energy Laboratories.” The National Energy Laboratories refers to all Department of Energy and National Nuclear Security Administration national laboratories.

(b) MEMBERS.—

(1) The Commission shall be composed of nine members who shall be appointed by the Secretary of Energy not later than May 1, 2014, from among persons nominated by the President's Council of Advisors on Science and Technology.

(2) The President's Council of Advisors on Science and Technology shall, not later than March 15, 2014, nominate not less than 18 persons for appointment to the Commission from among persons who meet qualification described in paragraph (3).

(3) Each person nominated for appointment to the Commission shall—

(A) be eminent in a field of science or engineering; and/or

(B) have expertise in managing scientific facilities; and/or

(C) have expertise in cost and/or program analysis; and

(D) have an established record of distinguished service.

(4) The membership of the Commission shall be representative of the broad range of scientific, engineering, financial, and managerial disciplines related to activities under this title.

(5) No person shall be nominated for appointment to the Board who is an employee of—

(A) the Department of Energy;

(B) a national laboratory or site under contract with the Department of Energy;

(C) a managing entity or parent company for a national laboratory or site under contract with the Department of Energy; or

(D) an entity performing scientific and engineering activities under contract with the Department of Energy.

(c) COMMISSION REVIEW AND RECOMMENDATIONS.—

(1) The Commission shall, by no later than February 1, 2015, transmit to the Secretary of Energy and the Committees on Appropriations of the House of Representatives and the Senate a report containing the Commission's findings and conclusions.

(2) The Commission shall address whether the Department of Energy's national laboratories—

(A) are properly aligned with the Department's strategic priorities; (B) have clear, well understood, and properly balanced missions that are not unnecessarily redundant and duplicative;

(C) have unique capabilities that have sufficiently evolved to meet current and future energy and national security challenges;

(D) are appropriately sized to meet the Department's energy and national security missions; and

(E) are appropriately supporting other Federal agencies and the extent to which it benefits DOE missions.

(3) The Commission shall also determine whether there are opportunities to more effectively and efficiently use the capabilities of the national laboratories, including consolidation and realignment, reducing overhead costs, reevaluating governance models using industrial and academic bench marks for comparison, and assessing the impact of DOE's oversight and management approach. In its evaluation, the Commission should also consider the cost and effectiveness of using other research, development, and technology centers and universities as an alternative to meeting DOE's energy and national security goals.

(4) The Commission shall analyze the effectiveness of the use of laboratory directed research and development (LDRD) to meet the Department of Energy's science, energy, and national security goals. The Commission shall further evaluate the effectiveness of the Department's oversight approach to ensure LDRD-funded projects are compliant with statutory requirements and congressional direction, including requirements that LDRD projects be distinct from projects directly funded by appropriations and that LDRD projects derived from the Department's national security programs support the national security mission of the Department of Energy. Finally, the Commission shall quantify the extent to which LDRD funding supports recruiting and retention of qualified staff.

(5) The Commission's charge may be modified or expanded upon approval of the Committees on Appropriations of the House of Representatives and the Senate.

(d) RESPONSE BY THE SECRETARY OF ENERGY.—

(1) The Secretary of Energy shall, by no later than April 1, 2015, transmit to Committees on Appropriations of the House of Representatives and the Senate a report containing the Secretary's approval or disapproval of the Commission's recommendations and an implementation plan for approved recommendations.**]**

[SEC. 320. The Committees on Appropriations of the House of Representatives and the Senate shall receive a 30-day advance notification with a detailed explanation of any waiver or adjustment made by the National Nuclear Security Administration's Fee Determining Official to at-risk award fees for Management and Operating contractors that result in award term extensions.**]**

[SEC. 321. To further the research, development, and demonstration of national nuclear security-related enrichment technologies, the Secretary of Energy may transfer up to $56,650,000 of funding made available in this title under the heading “National Nuclear Security Administration” to “National Nuclear Security Administration, Weapons Activities” not earlier than 30 days after the Secretary provides to the Committees on Appropriations of the House of Representatives and the Senate a cost-benefit analysis of available and prospective domestic enrichment technologies for national security needs, the scope, schedule, and cost of his preferred option, and after congressional notification and approval of the Committees on Appropriations of the House of Representatives and the Senate.**]**

[SEC. 322. None of the funds made available in this Act may be used—

(1) to implement or enforce section 430.32(x) of title 10, Code of Federal Regulations; or

(2) to implement or enforce the standards established by the tables contained in section 325(i)(1)(B) of the Energy Policy and Conservation Act (42 U.S.C. 6295(i)(1)(B)) with respect to BPAR incandescent reflector lamps, BR incandescent reflector lamps, and ER incandescent reflector lamps.**]** *(Energy and Water Development and Related Agencies Appropriations Act, 2014.)*

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. None of the funds made available by this Act may be used to enter into a contract, memorandum of understanding, or cooperative agreement with, make a grant to, or provide a loan or loan guarantee to any corporation that was convicted of a felony criminal violation under any Federal law within the preceding 24 months, where the awarding agency is aware of the conviction, unless **[**the**]***a Federal* agency has considered suspension or debarment of the corporation and **[**has**]** made a determination that this further action is not necessary to protect the interests of the Government.

SEC. 503. None of the funds made available by this Act may be used to enter into a contract, memorandum of understanding, or cooperative agreement with, make a grant to, or provide a loan or loan guarantee to, any corporation that has any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability, where the awarding agency is aware of the unpaid tax liability, unless **[**the**]***a Federal* agency has considered suspension or debarment of the corporation and **[**has**]** made a determination that this further action is not necessary to protect the interests of the Government.

[SEC. 504. (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 explanatory statement described in section 4 (in the matter preceding division A of this consolidated 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 explanatory statement described in section 4 (in the matter preceding division A of this consolidated 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 the House of Representatives and the Senate 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. **[**505**]***504*. 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”).