DOE/CF-0071
Volume 1

Department of Energy
FY 2013 Congressional Budget Request

National Nuclear Security Administration

Office of the Administrator
Weapons Activities
Defense Nuclear Nonproliferation
Naval Reactors

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The Department of Energy's Congressional Budget justification is available on the Office of Chief Financial Officer, Office of Budget homepage at http://www.cfo.doe.gov/crorg/cf30.htm.

DEPARTMENT OF ENERGY
Appropriation Account Summary
(dollars in thousands - OMB Scoring)

	FY 2011 Current	FY 2012 Enacted [1]	FY 2013 Request	FY 2013 vs. FY 2012	
				$	%
Energy And Water Development, And Related Agencies Appropriation Summary					
Energy Programs					
Energy Efficiency and Renewable Energy	1,771,721	1,809,638	2,337,000	+527,362	+29.1%
Electricity Delivery and Energy Reliability	138,170	139,103	143,015	+3,912	+2.8%
Nuclear Energy	717,817	765,391	770,445	+5,054	+0.7%
Fossil Energy Programs					
Clean Coal Technolgy	-16,500	0	0	0	0
Fossil Energy Research and Development	434,052	346,703	420,575	+73,872	+21.3%
Naval Petroleum and Oil Shale Reserves	20,854	14,909	14,909	0	N/A
Elk Hills School Lands Fund	0	0	15,580	+15,580	+100.0%
Strategic Petroleum Reserve	123,141	192,704	195,609	+2,905	+1.5%
Northeast Home Heating Oil Reserve	10,978	10,119	4,119	-6,000	-59.3%
Subtotal, Fossil Energy Programs	***572,525***	***564,435***	***650,792***	**+86,357**	**+15.3%**
Uranium Enrichment D&D Fund	497,084	472,180	442,493	-29,687	-6.3%
Energy Information Administration	95,009	105,000	116,365	+11,365	+10.8%
Non-Defense Environmental Cleanup	225,106	235,306	198,506	-36,800	-15.6%
Science	4,897,283	4,873,634	4,992,052	+118,418	+2.4%
Advanced Research Projects Agency-Energy	179,640	275,000	350,000	+75,000	+27.3%
Nuclear Waste Disposal	-2,800	0	0	0	0
Departmental Administration	48,894	126,000	122,595	-3,405	-2.7%
Inspector General	42,764	42,000	43,468	+1,468	+3.5%
Innovative Technology Loan Guarantee Program	169,660	0	0	0	0
Advanced Technology Vehicles Manufacturing Loan	9,978	6,000	9,000	+3,000	+50.0%
Total, Energy Programs	***9,362,851***	***9,413,687***	***10,175,731***	**+762,044**	**+8.1%**
Atomic Energy Defense Activities					
National Nuclear Security Administration:					
Weapons Activities	6,865,775	7,214,120	7,577,341	363,221	+5.0%
Defense Nuclear Nonproliferation	2,281,371	2,295,880	2,458,631	162,751	+7.1%
Naval Reactors	985,526	1,080,000	1,088,635	8,635	+0.8%
Office of the Administrator	393,293	410,000	411,279	1,279	+0.3%
Total, National Nuclear Security Administration	***10,525,965***	***11,000,000***	***11,535,886***	**+535,886**	**+4.9%**
Environmental and Other Defense Activities					
Defense Environmental Cleanup	4,979,165	5,002,950	5,472,001	+469,051	+9.4%
Other Defense Activities	795,670	823,364	735,702	-87,662	-10.6%
Total, Environmental & Other Defense Activities	***5,774,835***	***5,826,314***	***6,207,703***	**+381,389**	**+6.5%**
Total, Atomic Energy Defense Activities	***16,300,800***	***16,826,314***	***17,743,589***	**+917,275**	**+5.5%**
Power Marketing Administration					
Southwestern Power Administration	13,050	11,892	11,892	0	0
Western Area Power Administration	109,006	95,968	96,130	+162	+0.2%
Falcon & Amistad Operating & Maintenance Fund	220	220	220	0	0
Colorado River Basins	-23,000	-23,000	-23,000	0	0
Total, Power Marketing Administrations	***99,276***	***85,080***	***85,242***	**+162**	**+0.2%**
Subtotal, Energy And Water Development and Related Agencies	***25,762,927***	***26,325,081***	***28,004,562***	**+1,679,481**	**+6.4%**
Uranium Enrichment D&D Fund Discretionary Payments	-33,633	0	-463,000	-463,000	N/A
Excess Fees and Recoveries, FERC	-36,461	-25,534	-25,823	-289	-1.1%
Rescission of Balances	0	0	-360,667	-360,667	N/A
Total, Discretionary Funding by Appropriation	**25,692,833**	**26,299,547**	**27,155,072**	**+855,525**	**+3.2%**

[1] The FY 2012 Enacted reflects a rescission of $73,300 associated with savings from the contractor pay freeze; $600M ($500M Strategic Petroleum Reserve, $100M Northeast Home Heating Oil) was rebased as mandatory after enactment.

Overview
Appropriation Summary [a] [b]

	(dollars in thousands)						
	FY 2011 Current	FY 2012 Enacted	FY 2013 Request	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request
Office of the Administrator							
Program Direction	398,993	410,000	411,279	418,742	426,599	434,848	444,276
Rescission of Prior Year Balances	-5,700	0	0	0	0	0	0
Total, Office of the Administrator	393,293	410,000	411,279	418,742	426,599	434,848	444,276
Weapons Activities Appropriation							
Defense Programs							
Directed Stockpile Work	1,905,078	1,873,694	2,088,274				
Science Campaign	366,167	332,958	350,104				
Engineering Campaign	142,010	142,636	150,571				
Inertial Confinement Fusion Ignition and High Yield Campaign	478,105	474,812	460,000				
Advanced Simulation and Computing Campaign	613,620	618,076	600,000				
Readiness Campaign	91,695	128,406	130,095				
Readiness in Technical Base and Facilities	1,842,519	2,004,785	2,239,828				
Secure Transportation Asset	251,806	242,802	219,361				
Total, Defense Programs	5,691,000	5,818,169	6,238,233				
Nuclear Counterterrorism Incident Response	232,503	220,969	247,552				
Facilities and Infrastructure Recapitalization Program	93,574	96,120	0				
Site Stewardship	104,727	78,581	90,001				
Safeguards and Security							
Defense Nuclear Security	717,722	695,679	0				
Cyber Security	124,231	126,370	0				
Subtotal, Safeguards and Security	841,953	822,049	0				
Defense Nuclear Security	0	0	643,285				
NNSA CIO Activities	0	0	155,022				
Science, Technology and Engineering Capability	19,794	0	0				
National Security Applications	0	10,000	18,248				
Legacy Contractor Pensions	0	168,232	185,000				
Use of Prior Year Balances	-67,776	0	0				
Rescission of Prior Year Balances	-50,000	0	0				
Total, Weapons Activities	6,865,775	7,214,120	7,577,341	7,613,033	7,755,866	7,905,841	8,077,242
Defense Nuclear Nonproliferation							
Nonproliferation and Verification Research and Development	355,407	354,150	548,186	412,622	420,344	428,417	437,719
Nonproliferation and International Security	147,494	153,594	150,119	156,363	167,070	173,718	177,490
International Nuclear Materials Protection and Cooperation	578,633	569,927	311,000	282,628	288,026	293,870	300,171
Fissile Materials Disposition	802,198	685,386	921,305	950,000	960,000	975,000	996,170
Global Threat Reduction Initiative	444,689	498,000	466,021	485,775	494,866	504,371	515,322
Legacy Contractor Pensions	0	55,823	62,000	63,138	64,320	65,555	66,978
Use of Prior Year Balances	-2,050	0	0	0	0	0	0
Rescission of Prior Year Balances	-45,000	-21,000	0	0	0	0	0
Total, Defense Nuclear Nonproliferation	2,281,371	2,295,880	2,458,631	2,350,526	2,394,626	2,440,931	2,493,850
Naval Reactors							
Naval Reactors	986,526	1,080,000	1,088,635	1,108,391	1,129,186	1,151,021	1,175,975
Rescission of Prior Year Balances	-1,000	0	0	0	0	0	0
Total, Naval Reactors	985,526	1,080,000	1,088,635	1,108,391	1,129,186	1,151,021	1,175,975
Total, NNSA	10,525,965	11,000,000	11,535,886	11,490,692	11,706,277	11,932,641	12,191,343

[a] The annual totals include an allocation to NNSA from the Department of Defense. The amounts included are $677,076 in FY 2014; $712,344 in FY 2015; $766,924 in FY 2016; and $781,204 in FY 2017.

[b] FY 2012 Enacted reflects a rescission of $27,300 associated with savings from the contractor pay freeze. Of the $27,300, $19,877 was rescinded from Weapons Activities and $7,423 was rescinded from Defense Nuclear Nonproliferation.

NNSA Future-Years Nuclear Security Program[a]

(Dollars in Thousands)

	FY 2013 Request	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request
NNSA					
Office of the Administrator	411,279	418,742	426,599	434,848	444,276
Weapons Activities	7,577,341	7,613,033	7,755,866	7,905,841	8,077,242
Defense Nuclear Nonproliferation	2,458,631	2,350,526	2,394,626	2,440,931	2,493,850
Naval Reactors	1,088,635	1,108,391	1,129,186	1,151,021	1,175,975
Total, NNSA	**11,535,886**	**11,490,692**	**11,706,277**	**11,932,641**	**12,191,343**

[a] The annual totals include an allocation to NNSA from the Department of Defense. The amounts included are $677,076 in FY 2014; $712,344 in FY 2015; $766,924 in FY 2016; and $781,204 in FY 2017.

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
Consolidated Appropriations Act, 2012 (P.L. 112-74)
National Defense Authorization Act for FY 2012 (P.L. 112-81)

The President's FY 2013 Request for NNSA is $11.5 million, a 4.9 percent increase above the FY 2012 enacted level of $11.0 billion. The Weapons Activities account increases to $7.6 billion in FY 2013, a 5.0 percent increase from FY 2012 enacted levels. The President's Request also seeks $2.5 billion in FY 2013 in Defense Nuclear Nonproliferation, a 7.1 percent increase over FY 2012 enacted levels. The President's Requests for Naval Reactors is $1.1 billion and the Office of the Administrator is $411 million, reflecting 0.8 percent and 0.3 percent increases, respectively, above the FY 2012 enacted levels.

The FY 2013 NNSA budget justification also contains information for five years at the appropriation level, and detailed five year profiles for the Defense Nuclear Nonproliferation and Office of Administrator accounts. The FY 2013-2017 Future Years Nuclear Security Program (FYNSP) projects $58.9 billion for NNSA programs through 2017. The President's FY 2013 Request represents a significant increase in funding, about $536 million, relative to the FY 2012 enacted levels to modernize the U.S. nuclear stockpile, execute an aggressive international nuclear nonproliferation agenda, and support U.S. Navy requirements, while also recognizing that NNSA must continue to seek efficiencies in the way we operate and ensure that we get the most out of our infrastructure investments. The outyear numbers for Weapons Activities, Naval Reactors' OHIO Replacement Development, and Naval Reactors' S8G Prototype Refueling do not reflect programmatic requirements. Rather, they are an extrapolation of the FY 2013 request based on rates of inflation in the Budget Control Act of 2011. The Administration will develop outyear funding levels based on actual programmatic requirements at a later date.

Office Overview and Accomplishments

The NNSA has specialized programs that support the President's nuclear strategy, including those identified in the President's New Global Military Strategy released in January 2012, the New START agreement signed in 2010, the Nuclear Posture Review (NPR) report issued in 2010, and the commitments made at Prague in 2009.

More specifically, the NNSA implements programs for three major national security endeavors: (1) leveraging science to maintain a safe, secure and effective arsenal of nuclear weapons and capabilities to deter any adversary and guarantee that defense to our allies; (2) accelerating and expanding our efforts here in the homeland and around the world to reduce the global threat posed by nuclear weapons, nuclear proliferation and unsecured or excess nuclear materials; and (3) providing safe and effective nuclear propulsion for the U.S. Navy.

The NNSA's first programmatic priority is to fund activities that contribute to the President's stated policy of maintaining strategic deterrence and stability at reduced nuclear force levels and of sustaining a safe, secure, and effective nuclear arsenal without testing. Examples of these activities funded in the FY 2013 President's Budget include: Directed Stockpile Work (DSW), Campaigns, Uranium Processing Facility (UPF) construction, and High Explosive Pressing Facility (HEPF) construction, and testing and operations at the Nevada National Security Site (NNSS). Second, as a result of fundamental changes in the international security environment and the President's focus on preventing nuclear proliferation and nuclear terrorism, NNSA is fully

funding that portion of Defense Nuclear Nonproliferation's (DNN) budget request that is focused on securing all vulnerable nuclear material within four years and on reducing the role of U.S. nuclear weapons in U.S. national security strategy. Third, in order to strengthen regional deterrence and reassure U.S. allies and partners, the NNSA has fully funded programs supporting the development of the next generation ballistic missile submarine reactor.

The FY 2013 Request will build upon the FY 2011 accomplishments and those planned in FY 2012.

- Under the terms of the New Strategic Arms Reduction Treaty (New START) with Russia the President signed in 2010, the maximum number of deployed strategic nuclear weapons will be reduced from 2,200 to 1,550 by both the U.S. and Russia. These actions will strengthen the foundation of trust and help to build on cooperative international nonproliferation efforts.

- NNSA physically dismantles weapons to meet the U.S. obligations under New START and is on schedule to dismantle all weapons retired prior to 2009 by 2022.

- As long as nuclear weapons remain in existence, the U.S. will maintain a safe, secure, and effective arsenal. To that end, the request funds our Stockpile Stewardship and Management Program, including high priority Life Extension Programs (LEPs) for the B61 and W76 warheads, as well to continue studies on the W78/W88.

- The request funds critical infrastructure modernization efforts, including the UPF, and commits NNSA to optimizing the use of existing facilities to accomplish its missions and provide the capabilities needed to sustain the nuclear security enterprise now and in the future.

This budget request also represents the fourth year of the President's pledge in Prague of securing vulnerable nuclear materials. With this request, the United States will ensure this goal is completed by December 2013. By the end of 2013, NNSA will have led the effort to remove or dispose of 4,353 kilograms of vulnerable nuclear material (highly enriched uranium (HEU) and plutonium) in foreign countries and complete security upgrades on 229 buildings containing weapons-usable nuclear material in the former Soviet Union (FSU).

- As of the end of FY 2011, NNSA's Global Threat Reduction Initiative (GTRI) removed 3,125 kgs of vulnerable nuclear material (HEU/Pu) to secure locations, provided security upgrades to global nuclear and radiological facilities, and converted research reactors to use non-weapons-usable fuel. Through FY 2012, GTRI will have converted or verified as shutdown 81 research reactors, removed 3,455 kilograms of vulnerable nuclear material, and secured an estimated 1,355 buildings containing high priority nuclear or radiological materials.

- As of the end of FY 2011, NNSA's International Nuclear Material Protection and Cooperation (INMP&C) program had secured 218 buildings containing weapons-usable nuclear material to reduce the threat of nuclear terrorism. Through FY 2012 INMP&C will have completed nuclear security upgrades at 221 buildings containing weapons-usable nuclear material in the FSU. The SLD program will also have completed deployment of 20 Mobile Detection Systems (MDS) in 10 countries by the end of FY 2012.

- NNSA's Office of Nonproliferation and International Nuclear Security (NIS) led the international effort to finalize the fifth revision of the IAEA's Nuclear Security Recommendations on Physical Protection of Nuclear Material and Nuclear Facilities (INFCIRC/225), which was published in January 2011. Since the Prague speech, NIS has provided physical protection training to over 1,200 officials from 85 countries, conducted security assessments at 33 facilities in 12 countries to ensure the security of U.S.-obligated nuclear materials, and engaged 6 critical partner countries in 16 collaborative nuclear security projects.

Naval Reactors continues to support the VIRGINIA-class submarine construction program, including commissioning of the fourth Block II VIRGINIA-class submarine SSN 781 (USS CALIFORNIA) in late 2011; SSN 782 (USS MISSISSIPPI) keel laid down for expected delivery in mid-2012; and SSN 783 (USS MINNESOTA) keel laid down in 2011 for expected delivery in mid-2013.

Alignment to Strategic Plan

The NNSA FY 2013 Request is aligned with the Department's May 2011 Strategic Plan, as identified on the graph and table later in this chapter. The FY 2011 Strategic Plan is based on the President's nuclear security agenda and outlines five strategic goals: (1) Reduce Nuclear Dangers; (2) Manage the Nuclear Weapons

Stockpile and Advance Naval Nuclear Propulsion; (3) Modernize the NNSA Infrastructure; (4) Strengthen the Science, Technology, and Engineering Base, and (5) Drive an Integrated and Effective Enterprise. The NNSA Strategic Plan is aligned with the DOE Strategic Plan, including a variety of sub-goals identified in the table.

Explanation of Changes

Weapons Activities Appropriation

The Weapons Activities appropriation maintains a nuclear security enterprise of people, programs, and infrastructure that provide specialized scientific, technical, and engineering capabilities for stewardship of the nuclear weapons stockpile and to support U.S. leadership in science and technology. Programs funded by the Weapons Activities appropriation benefit the nation by sustaining both the nuclear weapons stockpile and a nuclear security enterprise that promotes world-class science, technology, and engineering capabilities on a broad array of national nuclear security priorities.

The request for this appropriation is $7.6 billion, a 5.0 percent increase from the FY 2012 enacted level. This level of funding is needed to support the President's nuclear security agenda, including extending the life of U.S. nuclear arsenal; dismantling weapons consistent with U.S. policy objectives; and ensuring the safety, security, and effectiveness of nuclear weapons without the use of underground testing. For FY 2013, the Directed Stockpile Work is increased by $214.6 million (11.5 percent), primarily to reflect efforts to modernize the stockpile, such as the B61 Life Extension Program (LEP) and W88 Arming, Fuzing, and Firing (AF&F) activities. The Readiness in Technical Base and Facilities (RTBF) Request is $235 million (11.7 percent) higher than the FY 2012 enacted level to support both on-going programs and modernizing the nuclear security enterprise, and accelerating construction of the UPF. There is also funding in RTBF for the Capability Based Facilities and Infrastructure (CBFI) initiative, a facility investment strategy that provides targeted, incremental investments for life-extension of enduring facilities and infrastructure required to support validated Directed Stockpile Work (DSW) and Campaign program requirements. Finally, the Nuclear Counterterrorism Incident Response program is increasing by $27 million (12.0 percent), in part to provide increases for additional render safe capabilities, nuclear threat device assessments, international outreach, and modeling. The RTBF increases are partially offset by deferring the Chemistry and Metallurgy Research Replacement Nuclear Facility (CMRR-NF) for at least five years. Construction has not begun on the nuclear facility. NNSA has determined, in consultation with the national laboratories, that the existing infrastructure in the nuclear complex has the inherent capacity to provide adequate support for these missions. Studies are ongoing to determine long-term requirements. NNSA will modify existing facilities, and relocate some nuclear materials. As a result of this decision, the estimated cost avoidance from 2013 to 2017 totals approximately $1.8 billion.

Some of the other decreases include ending the Facilities and Infrastructure Recapitalization Program (FIRP), a $96 million reduction from FY 2012 levels to reflect the conclusion of FIRP in FY 2012. Defense Nuclear Security is reduced by $52 million (7.5 percent) to reflect the transition of LLNL from a Category I to a Category III special nuclear material site, and a 5 percent overall reduction to Protective Forces at Category I sites. Finally, Secure Transportation Asset is decreased by $23 million (9.7 percent) to reflect the finalization of the aviation fleet upgrades and cost savings resulting from the fleet upgrades and pilot federalization.

Defense Nuclear Nonproliferation Appropriation

DNN is responsible for implementing key U.S. Government nuclear security, nonproliferation, and arms control activities. These critical national security missions include: securing vulnerable nuclear and radiological material at facilities throughout the world; removing plutonium and highly enriched uranium from partner countries; eliminating U.S. nuclear material declared surplus to defense needs; negotiating and providing the technical capability to verify arms control treaties and agreements; strengthening other countries' capacities to implement nonproliferation obligations; and enhancing other nations' capabilities to deter and detect illicit movement of nuclear and radiological materials.

The request for this appropriation is $2.5 billion, a 7.1 percent increase from the FY 2012 enacted levels. This budget will support the President's commitment to lead an international effort to secure all vulnerable nuclear materials around the world by the end of 2013. The Fissile Materials Disposition program reflects the largest increase – a $236 million, or 34 percent increase relative to FY 2012 levels – primarily to support the beginning of cold start-up activities at the Mixed Oxide (MOX) Fuel Fabrication Facility, the initiation of activities required to convert depleted uranium required for MOX operations, and qualification of alternative MOX fuel designs by multiple vendors. The Nonproliferation and Verification Research and Development program increases to reflect a one-time addition of $150 million to

support domestic uranium enrichment research, development and demonstration (RD&D), as well as increases the base nuclear detonation detection subprogram to permit the production of satellite sensors for nuclear detonation detection at a rate needed to sustain replenishment of current capability - as required. The GTRI efforts are slowed consistent with the four-year plan. Funding was requested in FY 2012 for long lead-time efforts that will support removals that occur in early FY 2013 to meet the four-year deadline of December 31, 2013. Within GTRI an increase in funding is provided to conversion efforts for the establishment of a reliable domestic production capability for the critical medical isotope Mo-99 without the use of HEU. INMP&C is also reduced to reflect the planned FY 2012 completion of a variety of projects; ongoing maintenance and sustainability support to the Russian Ministry of Defense; cessation of two projects that will be transitioned to Russian responsibility; reduced support for equipment sustainability by the transportation security project and protective force project teams; and the completion of installation of detection equipment at a cumulative 486 Second Line of Defense (SLD) sites, including 45 Megaports. SLD FY 2013 funding represents a near-term transition to mobile detection deployment and sustainability activities while DNN further evaluates the longer-term strategy for both the Core and Megaports programs.

Naval Reactors Appropriation

Naval Reactors (NR) is responsible for all naval 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 combatants) and fulfills the Navy's requirements for new nuclear propulsion plants that meet current and future national defense requirements.

The President's Budget request for NR is $1.1 billion, an increase of 0.8 percent over the FY 2012 enacted level. NR's request supports the core objective of ensuring the safe and reliable operation of the Nation's nuclear fleet and includes continued execution of the OHIO-class Ballistic Missile Submarine Replacement project, Land-based Prototype Refueling Overhaul, and the recapitalization of NR's spent fuel handling infrastructure.

Specific goals in FY 2013 include OHIO-class Replacement reactor design maturity to support long-lead procurements for ship construction beginning in 2021, refueling overhaul of the land-based prototype by 2021 (located at the Kesselring site in New York), and evaluation of alternatives to facilitate progress of the Spent Fuel Handling Recapitalization Project.

Office of the Administrator Appropriation

The mission of Office of the Administrator (OA) is to create a well-managed, inclusive, responsive, and accountable organization through the strategic management of human capital and acquisitions and integration of budget and performance data. The Office of the Administrator provides the funding for Federal personnel and resources necessary to plan, manage, oversee the operation of the NNSA.

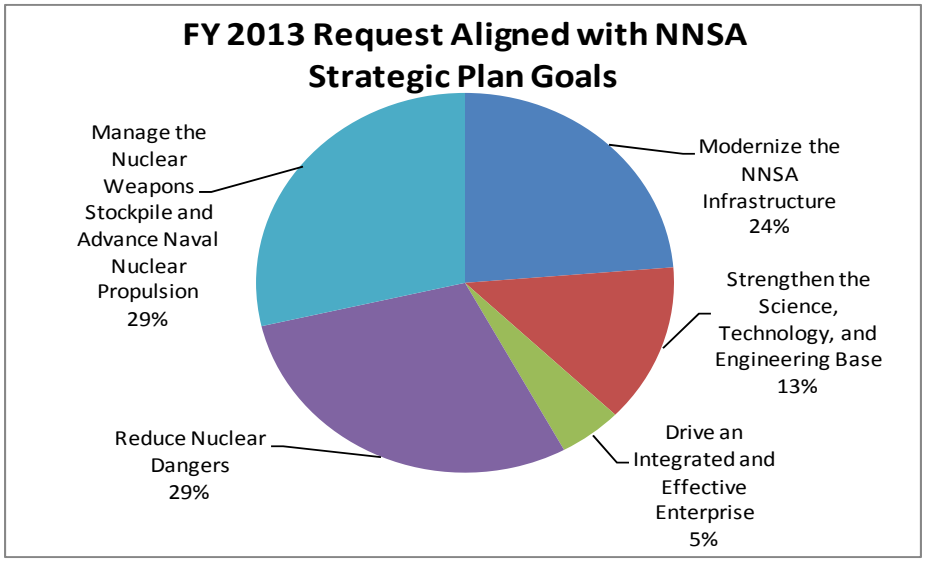
The FY 2013 request is $411.3 million, essentially the same as the FY 2012 enacted level of $410.0 million. The FY 2013 Request provides for a NNSA Federal staff level of 1,922 Full-Time Equivalents (FTEs), a slight decrease from the projected FY 2012 level of 1,928 FTEs. In addition, the five-year funding projection assumes a steady Federal staffing level of 1,922 through FY 2017 in support of NNSA's program goals. The 2013 request reflects the functional transfer of Federal Unclassified Information Technology to NNSA programs in FY 2013 (comparable to the $23.0 million in the OA FY 2012 enacted). In addition, the Massie Chairs of Excellence Historically Black Colleges and Universities (HBCU) program ($4.7M) and the shared Working Capital Fund (WCF) business lines for Telecommunications and Networking ($1.0M) will no longer be requested in the Office of the Administrator account but with WA and NN Program funds, consistent with how these two programs were funded in FY 2012.

Minority Serving Institution Partnerships Program

The Minority Serving Institution Partnerships Program (MSIPP-NNSA) aligns MSI investments with the NNSA mission in order to develop the needed skills and talent for NNSA's enduring technical workforce at the laboratories and production plants, and to enhance the research and education at under-represented colleges and universities.

NNSA previously supported MSI efforts, including Historically Black Colleges and Universities (HCBUs), through the Office of the Administrator, Weapons Activities, Defense Nuclear Nonproliferation, and Naval Reactors appropriations. FY 2013 will initiate the transition from the existing set of minority serving institution projects to the MSIPP, although the appropriations will still be requested in WA, DNN, and NR. The FY 2013 Request is $14.7 million.

The goals of the MSIPP are as follows: 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 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 sites; and 5) Increase the number of MSI graduates/Postdocs hired into DOE's technical and scientific workforce. Finally, NNSA is committed to participating in the Department's pilot laboratory research internship project for the STEM education program authorized by section 101 of the America COMPETES Reauthorization Act of 2010.



NNSA Funding Levels, by Elements of the DOE and NNSA Strategic Plan

	By Dollar Amount ($ billions)			By Percent of Total Budget (%)		
	2011 Current	*2012 Enacted*	*2013 Request*	*2011 Current*	*2012 Enacted*	*2013 Request*
Total	**10.5**	**11.0**	**11.5**	**100.0**	**100.0**	**100.0**
Reduce Nuclear Dangers	3.3	3.2	3.4	30.9	29.3	29.2
Material and Security and Protection (INMP&C; GTRI)	1.0	1.1	0.8	9.7	9.7	6.7
Fissile Materials Disposition (FMD)	0.8	0.7	0.9	7.6	6.2	8.0
Nonproliferation Regime and Enterprise Support (NIS; DNN Legacy Pensions)	0.1	0.2	0.2	1.4	1.9	1.8
Closing Nonproliferation Technology Gaps (R&D)	0.4	0.4	0.5	3.4	3.2	4.8
Security and Nuclear CounterTerrorism (NCTIR, DNS, NSA)	1.0	0.9	0.9	9.2	8.4	7.9
DNN Rescission of Prior Year Balances	(0.0)	(0.0)	-	(0.4)	(0.2)	-
Manage the Nuclear Weapons Stockpile and Advance Naval Nuclear Propulsion	3.0	3.1	3.3	28.3	28.0	28.7
Stockpile Support (DSW/Readiness)	2.0	2.0	2.2	19.0	18.2	19.2
Naval Reactors (incl. PY rescissions)	1.0	1.1	1.1	9.4	9.8	9.4
Modernize the NNSA Infrastructure	2.3	2.6	2.7	21.8	23.6	23.7
Infrastructure and Enterprise Support (RTBF, FIRP, STA, Site Stewardship, WA Legacy Pensions)	2.3	2.6	2.7	21.8	23.6	23.7
Strengthen the Science, Technology, and Engineering Base	1.6	1.6	1.6	15.2	14.3	13.5
Campaigns (Science, Engineering, ICF, ASC)	1.6	1.6	1.6	15.2	14.3	13.5
Drive an Integrated and Effective Enterprise	0.5	0.5	0.6	4.9	4.9	4.9
Office of the Administrator (incl. PY rescissions)	0.4	0.4	0.4	3.7	3.7	3.6
NNSA/CIO, Cyber Security	0.1	0.1	0.2	1.2	1.1	1.3
PY Rescissions of WA Balances	(0.1)	-	-	(1.1)	-	-

Note: WA and DNN pensions available as separate line item FY 2012 - FY 2013 ; not FY 2011

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 2012 and FY 2013.

(In Whole Dollars)

Project Title	Project Description	Type (i.e. GPP/IGPP)	Program (i.e. RTBF, DSW)	TEC	FY 2012 Funding	FY 2013 Funding	FY 2012 Deliverable	FY 2013 Deliverable
Outdoor Range Upgrades, LANL	The purpose of this project is to upgrade the Outdoor Range at TA-72 to meet mandated training requirements for SOC personnel. Currently the range cannot be responsibly utilized to meet these requirements for firing certain weapons. Upgrades include firing line enhancements, brass recycling catchment/containment upgrades, additional engineered controls to limit fire to intended impact area, and upgrade to electrical supply.	GPP	DNS	5,000,000	5,000,000	0	Start of Design	Construction Completion
Security Services Building, LANL	The purpose of this project is to consolidate security personnel into a modern facility from 7 temporary transportable buildings that have reached the end of their life cycle and are expensive to maintain. This project will enhance work efficiencies and reduce risk, while increasing the sustainability of the site assets.	GPP	DNS	8,500,000	0	500,000	N/A	Start of Design
Zone 4 Fixed Camera Project, PX	Replace existing cameras in the Zone 4 PIDAS with digital capable cameras. Install new fiber optic cable.	GPP	DNS	7,000,000	5,300,000	0	Project Completion	N/A
Knolls Site Steam Distribution System Upgrade, Knolls	The project includes the replacement of the west and south distribution branches of the steam distribution loop at the Knolls Laboratory. The existing steam distribution system is unreliable, difficult to maintain, and portions of the system are at the end of their useful service life, which can impact site operations. The project will install a new distribution main loop that will eliminate significant deficiencies in the current system and improve reliability. The new loop steam distribution system will be located outside of buildings and tunnels with easier access and ability to isolate portions for service and conduct repairs when necessary. Necessary improvements to steam and condensate mains will be included in the scope of this project.	GPP	Naval Reactors	5,800,000	N/A	600,000	N/A	AE Design and establishment of a Performance Baseline

Miscellaneous minor new construction projects, of a general nature, for which the total estimated cost, may not exceed the congressionally established limit. GPPs are necessary to adapt facilities to new or improved production techniques, to effect economies of operations, and to reduce or eliminate health, fire and security problems. These projects provide for design and/or construction, additions, improvements to land, buildings, replacements or additions to roads and general area improvements.

(Dollars in Thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
General Plant Projects			
Kansas City Plant	0	0	0
Sandia National Laboratories	25,418	56,485	50,850
Los Alamos National Laboratory	38,804	17,979	11,000
Lawrence Livermore National Laboratory	1,257	0	0
Pantex Plant	16	2	0
Savannah River Site	8,570	7,190	13,000
Y-12 National Security Complex	31,133	11,740	11,272
Nevada National Security Site	11,900	0	8,100
Bettis Atomic Power Laboratory	10,300	1,800	0
Knolls Atomic Power Laboratory	15,800	987	0
Total Site GPP	**143,198**	**96,183**	**94,222**

Out-Year General Plant Projects

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request
General Plant Projects				
Kansas City Plant	0	0	0	0
Sandia National Laboratories	49,750	17,450	22,201	12,050
Los Alamos National Laboratory	19,200	9,520	11,270	21,900
Lawrence Livermore National Laboratory	0	0	0	0
Pantex Plant	0	0	0	0
Savannah River Site	26,800	23,700	25,500	11,500
Y-12 National Security Complex	2,800	3,000	3,400	3,300
Nevada National Security Site	8,400	13,500	13,900	10,000
Bettis Atomic Power Laboratory	311	306	309	320
Knolls Atomic Power Laboratory	156	153	154	160
Total Site, GPP	**107,417**	**67,629**	**76,734**	**59,230**

Institutional General Plant Projects (IGPP)

IGPPs are construction projects that are less than $10 million and cannot be allocated to a specific program. The IGPPs fulfill multi-programmatic and/or inter-disciplinary needs and are funded through site overhead. The IGPPs also provide for minor new construction of a general institutional nature at multi-program sites, funded out of Management and Operating Contractor indirect funds. The IGPPs benefit multi-program users (e.g., NNSA and Office of Science) at a site. The following are planned IGPP funding projections:

(Dollars in Thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Institutional General Plant Projects			
Kansas City Plant	0	0	0
Sandia National Laboratories	3,954	8,784	1,700
Los Alamos National Laboratory	24,472	42,700	23,210
Lawrence Livermore National Laboratory	1,100	9,100	250
Pantex Plant	0	0	0
Savannah River Site	0	0	0
Y-12 National Security Complex	0	0	0
Nevada National Security Site	400	1,760	2,000
Bettis Atomic Power Laboratory	0	0	0
Knolls Atomic Power Laboratory	0	0	0
Total Site, Institutional General Plant Projects	**29,926**	**62,344**	**27,160**

The three NNSA laboratories, SNL, LANL and LLNL, are funding general institutional projects that support multiple programs.

Out-Year Institutional General Plant Projects

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request
Institutional General Plant Projects				
Kansas City Plant	0	0	0	0
Sandia National Laboratories	5,460	12,000	9,500	9,500
Los Alamos National Laboratory	18,650	35,700	17,000	13,000
Lawrence Livermore National Laboratory	0	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, Institutional General Plant Projects	**24,110**	**47,700**	**26,500**	**22,500**

Other Indirect Cost Projections

Facilities Maintenance and Repair

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

Indirect-Funded Costs for Maintenance and Repair

(Dollars in Thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Indirect-Funded Maintenance and Repair			
Kansas City Plant	0	0	0
Sandia National Laboratories	111,569	112,618	113,847
Los Alamos National Laboratory	171,114	188,149	194,213
Lawrence Livermore National Laboratory	87,504	90,819	92,635
Pantex Plant	0	0	0
Savannah River Site	1,972	2,037	2,105
Y-12 National Security Complex	28,000	28,532	29,074
Nevada National Security Site	1,000	1,000	1,000
Bettis Atomic Power Laboratory	6,255	6,349	6,357
Knolls Atomic Power Laboratory	14,235	18,661	15,829
Total, Indirect-Funded Maintenance and Repair	**421,649**	**448,165**	**455,060**

Out-Year Indirect-Funded Costs for Maintenance and Repair

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request
Indirect-Funded Maintenance and Repair				
Kansas City Plant	0	0	0	0
Sandia National Laboratories	114,922	116,009	117,277	118,390
Los Alamos National Laboratory	201,524	205,318	208,052	213,636
Lawrence Livermore National Laboratory	94,488	96,377	98,305	100,271
Pantex Plant	0	0	0	0
Savannah River Site	2,175	2,246	2,320	2,397
Y-12 National Security Complex	29,627	30,189	30,763	31,348
Nevada National Security Site	1,000	1,000	1,000	1,000
Bettis Atomic Power Laboratory	6,642	6,777	6,782	6,654
Knolls Atomic Power Laboratory	15,588	15,399	18,435	13,915
Total, Indirect-Funded Maintenance and Repair	**465,966**	**473,315**	**482,934**	**487,611**

Direct-Funded Costs for Maintenance and Repair

(Dollars in Thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Direct-Funded Maintenance and Repair			
Kansas City Plant	31,136	27,990	26,552
Sandia National Laboratories	4,527	4,579	4,632
Los Alamos National Laboratory	193,676	416,345	344,675
Lawrence Livermore National Laboratory	12,214	11,454	2,095
Pantex Plant	89,817	95,174	80,168
Savannah River Site	29,175	33,600	35,226
Y-12 National Security Complex	42,700	41,134	29,178
Nevada National Security Site	26,266	24,019	18,624
Bettis Atomic Power Laboratory	18,739	18,344	20,385
Knolls Atomic Power Laboratory	8,358	7,567	7,657
Total, Direct-Funded Maintenance and Repair	**456,608**	**680,206**	**569,192**

Out-Year Direct-Funded Costs for Maintenance and Repair

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request
Direct-Funded Maintenance and Repair				
Kansas City Plant	19,240	12,115	7,315	7,388
Sandia National Laboratories	4,685	4,739	4,793	4,848
Los Alamos National Laboratory	344,111	341,624	271,903	283,502
Lawrence Livermore National Laboratory	2,137	2,180	2,224	2,268
Pantex Plant	78,885	80,226	80,146	72,749
Savannah River Site	32,959	30,793	35,872	38,486
Y-12 National Security Complex	29,732	30,297	30,873	31,459
Nevada National Security Site	18,978	19,338	19,706	20,080
Bettis Atomic Power Laboratory	17,571	16,238	18,342	15,162
Knolls Atomic Power Laboratory	7,813	8,199	8,437	7,996
Total, Direct-Funded Maintenance and Repair	**556,111**	**545,749**	**479,611**	**483,938**

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

(Dollars in Thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Defense Nuclear Nonproliferation			
SBIR/STTR [Non-Add]	[5,579]	[6,245]	[11,727]
Total, Defense Nuclear Nonproliferation SBIR/STTR [Non-Add]	**[5,579]**	**[6,245]**	**[11,727]**

Site Estimates

(Dollars in Thousands)

Site	FY 2011 Actual	FY 2012 Enacted	FY 2013				
			OA	WA	NN	NR	Total
ABQ	568,463	764,581	0	324,211	127,509	0	451,720
Ames	200	300	0	0	0	0	0
ANL	107,141	113,459	0	2,280	99,322	0	101,602
BAPL	475,070	456,100	0	0	0	464,000	464,000
BNL	19,094	39,168	0	2,019	43,447	0	45,466
CH	3,260	2,000	0	0	0	0	0
GA	23,700	23,300	0	0	0	0	0
HQ	425,771	705,217	283,111	626,238	239,982	25,849	1,175,180
ID	1,364	1,400	0	1,384	0	0	1,384
INL	221,410	236,849	0	6,312	110,592	79,090	195,994
KAPL	388,595	478,178	0	0	0	498,700	498,700
KCP	503,769	500,190	0	521,085	1,686	0	522,771
KSO	6,790	6,849	7,468	0	0	0	7,468
LANL	1,889,240	1,637,845	0	1,307,895	218,810	0	1,526,705
LASO	19,036	19,157	19,416	0	0	0	19,416
LBNL	5,838	6,669	0	0	7,322	0	7,322
LLNL	1,186,313	1,183,193	0	987,514	91,881	0	1,079,395
LSO	19,407	19,822	20,208	0	0	0	20,208
NBL	1,091	1,138	0	244	885	0	1,129
NETL	5,113	1,646	0	4,010	0	0	4,010
NNSS	319,721	302,194	0	262,051	55,876	0	317,927
NRL	7,969	5,000	0	5,000	0	0	5,000
NRLFO	18,179	18,920	0	0	0	20,996	20,996
NVSO	100,326	98,704	18,475	75,264	0	0	93,739
OR	40	0	0	0	0	0	0
ORISE	15,506	16,898	0	17,130	460	0	17,590
ORNL	243,442	212,780	0	1,557	152,897	0	154,454
OSTI	508	507	0	362	5	0	367
PNNL	242,694	272,709	0	11,953	196,162	0	208,115
PSO	13,970	14,331	14,674	0	0	0	14,674
PX	576,727	622,871	0	586,565	4,009	0	590,574
RL	1,528	1,630	0	1,503	0	0	1,503
RSL	4,742	4,784	0	0	3,322	0	3,322
SNL	1,247,168	1,289,747	0	1,435,281	181,666	0	1,616,947
SR	70,035	96,641	0	0	334,650	0	334,650
SR/MOX	496,788	430,172	0	0	383,802	0	383,802
SR/WGI	9,200	0	0	0	0	0	0
SRO	0	0	0	1,108	0	0	1,108
SRS	460,679	296,768	0	226,288	141,409	0	367,697
SRSO	4,967	5,214	5,723	0	0	0	5,723
SSO	22,360	26,062	26,446	0	0	0	26,446
UR/LLE	62,785	62,083	0	60,250	0	0	60,250
Y-12	888,031	1,028,523	0	1,109,837	62,697	0	1,172,534
YSO	19,461	17,401	15,758	0	240	0	15,998
PYBal	-171,526	-21,000	0	0	0	0	0
Grand Total	10,525,965	11,000,000	411,279	7,577,341	2,458,631	1,088,635	11,535,886

Office of the Administrator

Office of the Administrator

Office of the Administrator
Proposed Appropriation Language

For necessary expenses of the Office of the Administrator in the National Nuclear Security Administration, including official reception and representation expenses not to exceed $12,000, $411,279,000, to remain available until September 30, 2014.

Explanation of Change

The FY 2013 Request provides support for 1,922 full time equivalents for NNSA federal staff. The budget reflects several major changes including, the functional transfer of Federal Unclassified Information Technology to Weapons Activities and the transfer of overseas office support to the Working Capital Fund. In addition, the Massie Chairs of Excellence Historically Black Colleges and Universities (HBCU) program will no longer be requested within the Office of the Administrator account but with Program funds as part of the Minority Serving Institutions Partnership Program (MSIPP).

Office of the Administrator

Overview
Appropriation Summary by Program

(Dollars in Thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Office of the Administrator			
NNSA Program Direction			
Salaries and Benefits	282,967	301,995	304,474
Travel	16,536	15,500	15,500
Support Services	22,445	20,500	20,500
Other Related Expenses	77,045	72,005	70,805
Subtotal, Office of the Administrator	**398,993**	**410,000**	**411,279**
Rescission of Prior Year Balances	-5,700	0	0
Total, Office of the Administrator	**393,293**	**410,000**	**411,279**

Note: Salaries and Benefits funding for FY 2011 was augmented with $21,440,000 of unobligated, prior-year balances.

Outyear Appropriation Summary by Program

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request
Office of the Administrator				
NNSA Program Direction				
Salaries and Benefits	311,937	319,794	328,043	337,471
Travel	15,500	15,500	15,500	15,500
Support Services	20,500	20,500	20,500	20,500
Other Related Expenses	70,805	70,805	70,805	70,805
Total, Office of the Administrator	**418,742**	**426,599**	**434,848**	**444,276**

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
Consolidated Appropriations Act, 2012 (P.L. 112-74)
National Defense Authorization Act for FY 2012 (P.L. 112-81)

Overview

The mission of Office of the Administrator is to create a well-managed, inclusive, responsive, and accountable organization through the strategic management of human capital and acquisitions and integration of budget and performance data.

The Office of the Administrator provides the Federal personnel and resources necessary to plan, manage, and oversee the operation of the National Nuclear Security Administration (NNSA). The Nation benefits from having a highly educated and skilled cadre of Federal managers overseeing the operations of the national security mission activities and performing many specialized duties including leading Emergency Response teams, nuclear nonproliferation coordination, safeguards and security oversight, strategic coordination of counterterrorism and counter-proliferation initiatives, and mission support areas, to include procurement, financial management, human capital management and safety and health.

Program Accomplishments and Milestones

The Office of the Administrator account contributes to the NNSA's success by providing the Federal personnel and resources necessary to plan, manage, and oversee the operation of the programs designed to meet NNSA's planned objectives and milestones.

The Office of the Administrator account continues to identify efficiencies 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 2011-FY 2017 budgets.

In addition, the Office of the Administrator has a performance target in support of the overall efficient operation of the NNSA. It is to maintain the Office of the Administrator Federal administrative costs as a percentage of total Weapons Activities and Defense Nuclear Nonproliferation program costs at less than 6%.

Program Planning and Management

In FYs 2011-12 the Office of the Administrator account is funding a study of NNSA's workforce planning and organizational structure. This will assist NNSA in organizing and staffing optimally, including the proper skill mix, to meet future mission requirements. The plan is to have a final workforce management system in place by December 2012.

Major Outyear Priorities and Assumptions

The five year funding plan assumes a steady Federal staffing level of 1,922 Full-Time Equivalents (FTEs) in support of NNSA's program goals pending the outcome of the study.

Alignment to Strategic Plan

The Office of the Administrator contributes to the Department's May 2011 Strategic Plan by providing the Federal personnel and resources necessary to plan, manage, and oversee the operation of the NNSA's programs designed to meet the objectives outlined in the plan.

The three NNSA goals in the Strategic Plan that are supported by the Office of the Administrator account are: 3A: Support the U.S. Nuclear Stockpile and Future Military Needs; 3B: Reduce Global Nuclear Dangers; and 3C: Apply Our Capabilities for Other Critical National Security Missions.

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

The NNSA Office of the Administrator appropriation projected contribution to the DOE Working Capital Fund for FY 2013 is $44,912,000.

The Department is working to achieve economies of scale through an enhanced Working Capital Fund. The WCF increase covers certain shared enterprise activities including enhanced cyber security architecture, employee health and testing services, and consolidated training and recruitment initiatives.

Major Programmatic Shifts or Changes

The Massie Chairs of Excellence Historically Black Colleges and Universities (HBCU) program will no longer be requested within the Office of the Administrator account but with Program funds as part of the Minority Serving Institutions Partnership Program (MSIPP). FY 2013 will initiate the transition from the existing set of minority serving institution projects to the MSIPP, although the appropriations will still be requested in WA, DNN, and NR. The Massie Chairs program total is $4,677,000 of which Weapons Activities (WA) will provide $3,508,000 and Defense Nuclear Nonproliferation (DNN) will provide $1,169,000.

The shared Working Capital Fund (WCF) business lines for Telecommunications and Networking will no longer be requested in the Office of the Administrator account. These services will instead be funded by NNSA programs, which is consistent with charging the entire complex for connectivity thru DOEnet. This transfers the following WCF charges to NNSA programs: Connectivity for DOE Headquarters through local and wide area networks; access to and cyber security for the internet and web, e-mail, and other applications for processing and sharing information; Interface services and communications links to the field and other government agencies. The total funding amount is $1,000,000. WA will fund $740,000, and DNN will fund $260,000.

Also, within the Office of the Administrator account there is a the net transfer of Salaries and Benefits (-$5,144,000) and Other Related Expenses (-$5,876,000) within the account for overseas office support, including Federal salaries and benefits and Foreign Service Nationals, to the Office of the Administrator's share of the Working Capital Fund (+$11,020,000).

In addition, beginning in FY 2013, the NNSA request includes the internal transfer of Federal Unclassified Information Technology from the Office of the Administrator to Weapons Activities, NNSA Chief Information Officer (CIO) Activities (-$23,004,000) to consolidate all information management activities.

Office of the Administrator Funding Profile by Category

(dollars in thousands/FTEs)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Headquarters			
Salaries and Benefits	183,507	198,408	198,565
Travel	14,186	13,241	13,241
Support Services	17,371	15,928	15,928
Other Related Expenses	63,468	57,547	55,377
Total, Headquarters	278,532	285,124	283,111
Total, Full Time Equivalents	1,319	1,294	1,290
Livermore Site Office			
Salaries and Benefits	16,652	17,006	17,387
Travel	320	274	274
Support Services	1,176	951	951
Other Related Expenses	1,259	1,591	1,596
Total, Livermore Site Office	19,407	19,822	20,208
Total, Full Time Equivalents	96	97	97
Los Alamos Site Office			
Salaries and Benefits	17,675	17,916	18,318
Travel	232	264	264
Support Services	349	328	328
Other Related Expenses	480	499	506
Total, Los Alamos Site Office	18,736	19,007	19,416
Total, Full Time Equivalents	107	108	108
Sandia Site Office			
Salaries and Benefits	13,166	16,896	17,275
Travel	486	456	456
Support Services	699	713	713
Other Related Expenses	8,009	7,997	8,002
Total, Sandia Site Office	22,360	26,062	26,446
Total, Full Time Equivalents	82	102	102

(dollars in thousands/FTEs)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Nevada Site Office			
Salaries and Benefits	16,237	15,124	15,463
Travel	328	281	281
Support Services	1,153	1,075	1,075
Other Related Expenses	1,543	1,650	1,656
Total, Nevada Site Office	19,261	18,130	18,475
Total, Full Time Equivalents	95	91	90
Pantex Site Office			
Salaries and Benefits	12,499	12,908	13,197
Travel	210	235	235
Support Services	460	355	355
Other Related Expenses	801	833	887
Total, Pantex Site Office	13,970	14,331	14,674
Total, Full Time Equivalents	79	81	80
Y-12 Site Office			
Salaries and Benefits	12,627	13,067	13,360
Travel	349	313	313
Support Services	776	730	730
Other Related Expenses	1,218	1,351	1,355
Total, Y-12 Site Office	14,970	15,461	15,758
Total, Full Time Equivalents	78	82	82
Kansas City Site Office			
Salaries and Benefits	6,002	5,907	6,039
Travel	225	218	218
Support Services	341	281	281
Other Related Expenses	222	443	930
Total, Kansas City Site Office	6,790	6,849	7,468
Total, Full Time Equivalents	42	41	41
Savannah River Site Office			
Salaries and Benefits	4,602	4,763	4,870
Travel	200	218	218
Support Services	120	139	139
Other Related Expenses	45	94	496
Total, Savannah River Site Office	4,967	5,214	5,723
Total, Full Time Equivalents	30	32	32

(dollars in thousands/FTEs)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Office of the Administrator			
Salaries and Benefits	282,967	301,995	304,474
Travel	16,536	15,500	15,500
Support Services	22,445	20,500	20,500
Other Related Expenses	77,045	72,005	70,805
Subtotal, Office of the Administrator	398,993	410,000	411,279
Rescission of Prior Year Balances	-5,700		
Total, Office of the Administrator	393,293	410,000	411,279
Total, FTEs	1,928	1,928	1,922

NOTE: FY 2011 is understated by $21,440,000 for the one-time use of prior year balances in Salaries and Benefits.

Explanation of Funding and/or Program Changes

	(Dollars in Thousands)		
	FY 2012 Enacted	FY 2013 Request	FY 2013 vs. FY 2012
Office of the Administrator			
Salaries and Benefits	**301,995**	**304,474**	**+2,479**
Provides support for an NNSA Federal staff level of 1,922 Full-Time Equivalents. Reflects the transfer of Federal Salary and Benefits to the Working Capital Fund for overseas office support, including payroll for Foreign Service Nationals; offset by +0.5% calendar year 2013 pay raise and other payroll escalation (benefits, performance pay increases).			
Travel	**15,500**	**15,500**	**0**
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 Site Offices, Headquarters, the laboratories and plants, and local governments. International travel is a key element of the nonproliferation work with international agencies and the former Soviet Union republics, and other International partners. The request reflects the efficiencies achieved in support of the President's Executive Order "*Promoting Efficient Spending*".			
Support Services	**20,500**	**20,500**	**0**
Management and professional support services that assist, advise, or train staff to achieve efficient and effective management and operation of organizations, activities, or systems; including administrative support. Studies, analyses, and evaluations provide organized analytic assessments or evaluations in support of policy development, decision-making, management, or administration. Engineering and technical services that assist NNSA Federal staff in highly specialized areas; including services essential to planning, research and development, production, or maintenance of a major acquisition, weapon system, or other major system. The request reflects the efficiencies achieved in support of the President's Executive Order "*Promoting Efficient Spending*".			

	(Dollars in Thousands)		
	FY 2012 Enacted	FY 2013 Request	FY 2013 vs. FY 2012
Other Related Expenses	**72,005**	**70,805**	**-1,200**
Provides funding for Space and Occupancy costs for Headquarters and the field including the OA 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; NNSA's Federal personnel, Permanent Change of Station expenses; and miscellaneous procurements. The decrease reflects the functional transfer of Federal Unclassified Information Technology to the NNSA programs in FY 2013 (-$23,004,000). The decrease is partially offset by: -- Working Capital Fund increases for work scope for technology enhancements; corporate training services, health services, iManage, and interagency transfers to GSA related to E-gov, and transfers from Salaries and Benefits and Other Related Expenses for overseas office support. -- Increases in Space and Occupancy requirements in the field for rental expenses, maintenance charges, and office improvements. -- Use of prior year balances in FY 2012 execution of Other Related Expenses activities.			
Total Funding Change, Office of the Administrator	**410,000**	**411,279**	**+1,279**

Internal Transfers

Beginning in FY 2013, the NNSA request includes the internal transfer of Federal Unclassified Information Technology from the Office of the Administrator to Weapons Activities, NNSA CIO Activities, (-$24,992,000) to consolidate all information management activities.

Support Services by Category

(dollars in thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Management and Professional Services	18,400	17,119	17,296
Studies, Analyses, and Evaluations	2,624	2,432	2,210
Engineering and Technical Services	1,421	949	994
	22,445	**20,500**	**20,500**

Other Related Expenses by Category

(dollars in thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Training	3,157	2,421	3,063
Space and Occupancy Costs	15,172	16,524	19,984
Headquarters Working Capital Fund (WCF)	25,198	23,206	44,912
Other Expenses			
International Offices	4,977	4,379	0
HBCU/HSIs	820	0	0
PCS moves	1,126	25	0
Other Services	2,080	2,434	2,834
Reception and representation	12	12	12
Subtotal, Other Expenses	9,015	6,850	2,846
Information Technology	24,503	23,004	0
Total, Other Related Expenses	**77,045**	**72,005**	**70,805**

Supporting Information

Capital Operating Expenses and Construction Summary
Capital Operating Expenses[a]

(dollars in thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Capital Operating Expenses			
General Plant Projects	1,504	1,537	1,570
Capital Equipment	0	0	0
Total, Capital Operating Expenses	**1,504**	**1,537**	**1,570**

Outyear Capital Operating Expenses

(dollars in thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request
Capital Operating Expenses				
General Plant Projects	1,605	1,640	1,676	1,713
Capital Equipment	0	0	0	0
Total, Capital Operating Expenses	**1,605**	**1,640**	**1,676**	**1,713**

[a] Funds are appropriated for Operations and Maintenance, which includes operating expenses, capital equipment and general plant projects. The program no longer budgets separately for capital equipment and general plant projects. Funding shown reflects estimates based on actual FY 2011 obligations.

Weapons Activities

Weapons Activities

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Weapons Activities
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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 one ambulance $7,577,341,000, to remain available until expended.

Explanation of Change

The FY 2013 Request provides an increase from the FY 2012 request. Increases are provided for stockpile support and infrastructure in support of Department of Defense requirements and to support increased operational and construction cost estimates since the FY 2012 request.

Weapons Activities
Overview
Appropriation Summary by Program

(dollars in thousands)

	FY 2011 Current	FY 2012 Enacted [a]	FY 2013 Request
Weapons Activities			
Directed Stockpile Work	1,905,078	1,873,694	2,088,274
Science Campaign	366,167	332,958	350,104
Engineering Campaign	142,010	142,636	150,571
Inertial Confinement Fusion Ignition and High Yield Campaign	478,105	474,812	460,000
Advanced Simulation and Computing Campaign	613,620	618,076	600,000
Readiness Campaign	91,695	128,406	130,095
Readiness in Technical Base and Facilities	1,842,519	2,004,785	2,239,828
Secure Transportation Asset	251,806	242,802	219,361
Nuclear Counterterrorism Incident Response	232,503	220,969	247,552
Facilities and Infrastructure Recapitalization Program	93,574	96,120	0
Site Stewardship	104,727	78,581	90,001
Defense Nuclear Security	717,722	695,679	643,285
Cyber Security	124,231	126,370	0
NNSA CIO Activities	0	0	155,022
Science, Technology and Engineering Capability	19,794	0	0
National Security Applications	0	10,000	18,248
Legacy Contractor Pensions	0	168,232	185,000
Subtotal Weapons Activities	**6,983,551**	**7,214,120**	**7,577,341**
Use of Prior Year Balances	-67,776	0	0
Rescission of Prior Year Balances	-50,000	0	0
Total, Weapons Activities	**6,865,775**	**7,214,120**	**7,577,341**

[a] FY 2012 Enacted reflects rescission of $19.9 million associated with savings from the contractor pay freeze.

Out-Year Appropriation Summary by Program

The outyear numbers for Weapons Activities do not reflect programmatic requirements. Rather, they are an extrapolation of the FY 2013 request based on rates of inflation in the Budget Control Act of 2011. The Administration will develop outyear funding levels based on actual programmatic requirements at a later date.

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
Consolidated Appropriations Act, 2012 (P.L. 112-74)
National Defense Authorization Act for FY 2012 (P.L. 112-81)

Program Overview and Benefits

The Weapons Activities appropriation maintains a nuclear security enterprise of people, programs, and infrastructure that provide specialized scientific, technical, and engineering capabilities for stewardship of the nuclear weapons stockpile and to support U.S. leadership in science and technology.

Programs funded by the Weapons Activities appropriation benefit the nation by sustaining both the nuclear weapons stockpile and a nuclear security enterprise that is capable of employing world-class science, technology, and engineering capabilities on a broad array of national nuclear security priorities. The nuclear security enterprise is composed of physical infrastructure and facilities, human resources, and modern business processes which provide world-leading science, technology, and engineering capabilities that serve not only as national security assets, but also as important educational and community resources. While these are focused on nuclear weapons stewardship and maintenance of our nuclear deterrent, they are also leveraged for broader national security mandates and scientific innovation. Programs funded by the Weapons Activities appropriation are also integrated into the nation's homeland security structure through their support of safeguards and security and nuclear counterterrorism and incident response.

Program Accomplishments and Milestones

In the prior appropriation year, Weapons Activities achieved a number of significant accomplishments and made progress in numerous areas. The program delivered multiple Limited Life Components (LLCs) for seven different warheads to sustain the stockpile, exceeded planned W76-1 LEP production, and exceeded weapon dismantlement goals, including dismantlement of the last B53 warhead. In the Science, Technology, and Engineering area, a range of achievements standout. These include resumption of plutonium experiments at our Joint Actinide Shock Physics Experimental Research (JASPER) and Z facilities, progress on sub-critical experiments at Nevada National Security Site (NNSS), and the first series of stockpile stewardship experiments on the National Ignition Facility (NIF) were conducted. The program developed advanced safety, security, and use-control/denial technologies for stockpile insertion irradiated a cumulative total of 1,328 TPBARs in TVA reactors to provide a source of new tritium to replace inventory. In the facilities area, LLNL is ahead of their de-inventory schedule, having completed packaging of 91% of planned Special Nuclear Materials (SNM) with 84% shipped off-site and Y12's Highly Enriched Uranium Materials Facility (HEUMF) Transition Program continued moving qualified materials from long-term storage areas in production facilities to HEUMF. Finally, the Secure Transportation Asset safely and securely completed 100 percent of the 116 shipments of nuclear weapons components and materials without compromise/loss of components or a release of radioactive material.

In the current appropriation year, Weapons Activities is working towards the following key milestones:

Milestone	Date
As part of the National Boost Initiative, complete a Predictive Capability Framework Milestone to improve assessments for the early phases of stockpile primary evolution. Capabilities developed as part of this effort will be used in annual assessment, future LEPs, and for resolution of Significant Finding Investigations.	4th Qtr, FY 2012
Complete the Supplemental Environmental Impact Statement and issue Record of Decision to support TVA licensing for increasing TPBAR irradiation quantities that must be approved by the NRC and provide technical and management support.	4th Qtr, FY 2012
Obtain approval for Uranium Processing Facility partial baseline at the Y-12 Complex, begin road construction and utilities relocation, and achieve 90% maturity for the Design effort.	Multiple dates, FY2012

Milestone	Date
Commence Phase 6.3 development engineering for the B61 LEP	TBD based on NWC approval

Explanation of Changes

The FY 2013 Request provides an increase from the FY 2012 Omnibus level of funding.

This level of funding is needed to support the President's nuclear security objectives, including extending the life of the U.S. nuclear arsenal; dismantling weapons consistent with U.S. policy objectives; and ensuring the safety, security, and effectiveness of nuclear weapons without the use of underground testing. For FY 2013, the Directed Stockpile Work (DSW) is increased by $214.6 million (11.5 percent), primarily to reflect efforts to extend the life of the stockpile, such as funding the B61 Life Extension Program (LEP) as approved by Nuclear Weapons Council in the Fall of 2011, and the W88 Arming, Fuzing, and Firing (AF&F) activities. As a result of these changes, there may be some deferrals in completion dates for some of the LEPS.

The Readiness in Technical Base and Facilities (RTBF) Request is $235 million (11.7 percent) higher than the FY 2012 enacted level to support both on-going programs and modernizing the nuclear security enterprise, including transitioning to the new facility at the Kansas City Responsive Infrastructure, Manufacturing and Sourcing (KCRIMS) campus and accelerating construction of the UPF. There is also funding in RTBF for the Capability Based Facilities and Infrastructure (CBFI) initiative, a facility investment strategy that provides targeted, incremental investments for life-extension of enduring facilities and infrastructure required to support validated Directed Stockpile Work (DSW) and Campaign program requirements. Finally, the Nuclear Counterterrorism Incident Response program is increasing by $27 million (12.0 percent), in part to provide increases for additional render safe capabilities, international outreach nuclear threat device assessments, and modeling.

Some decreases include ending the Facilities and Infrastructure Recapitalization Program (FIRP), a $96 million reduction from FY 2012 levels to reflect the conclusion of FIRP in FY 2012. Defense Nuclear Security is reduced by $52 million (7.5 percent) to reflect the transition of LLNL from a Category I to a Category III special nuclear material site, and a 5 percent overall reduction to Protective Forces at Category I sites. Finally, Secure Transportation Asset is decreased by $23 million (9.7 percent) to reflect the finalization of the aviation fleet upgrades and cost savings resulting from the fleet upgrades and pilot federalization. Additionally, deferral of vehicle fleet production and facility enhancements contributed to the decrease.

With the elimination of the Self-Constructed Asset Pool (SCAP) rate at Lawrence Livermore National Laboratory in FY 2013, the National Ignition Facility will operate under the same rate structure as the rest of the Laboratory and all individual users of NIF will be directly charged for their use of the facility.

The RTBF increases are partially offset by deferring the Chemistry and Metallurgy Research Replacement Nuclear Facility (CMRR-NF) for at least five years. Construction has not begun on the nuclear facility. NNSA has determined, in consultation with the national laboratories, that the existing infrastructure in the nuclear complex has the inherent capacity to provide adequate support for these missions. Studies are ongoing to determine long-term requirements. NNSA will modify existing facilities, and relocate some nuclear materials. Estimated cost avoidance from 2013 to 2017 totals approximately $1.8 billion.

Program Planning and Management

Success in meeting the current and future needs of the stockpile while sustaining and revitalizing the intellectual resources and physical infrastructure of the enterprise will require a high degree of integration across the myriad activities that are part of this program. Several tools have been recently developed to augment existing planning that assist in this integration. The long standing Stockpile Life Extension Program (LEP) Schedule establishes initial timelines for key life extension and limited life component development efforts. The schedule is based on the needs of the individual warheads and design and production capacities within the enterprise. These long term objectives then serve as input to the Predictive Capability Framework (PCF) and the Component Maturation Framework (CMF).

The PCF is an evolving 20-year roadmap used to guide the science, technology and engineering activities for near term deliverables and long term capability needs for certification of the stockpile and any changes made to it. Its "peg posts" constitute key planning objectives across multiple campaigns.

The Component Maturation Framework is a roadmap for the development and maturation of the modern technologies and production methods needed for sustainment and/or safety improvement in the stockpile. The CMF's integrated construct summarizes the specific technological and programmatic hurdles to, and opportunities for, successfully maturing and producing

components to meet the Stockpile LEP schedule. Implementation of this construct has included the development of defined technology and manufacturing readiness levels to capture the maturity of technologies that are candidates for use in the stockpile. Integration of all three of these schedules/roadmaps will insure the availability of technologies that can be reliably produced and confidently certified to meet the evolving needs of the stockpile.

Major Outyear Priorities and Assumptions

The outyear numbers for Weapons Activities do not reflect programmatic requirements. Rather, they are an extrapolation of the FY 2013 request based on rates of inflation in the Budget Control Act of 2011. The Administration will develop outyear funding levels based on actual programmatic requirements at a later date. Major Outyear Priorities and Assumptions will be delineated in that update.

Program Goals and Funding

This budget request is based on the following specific stockpile management and stewardship requirements:

- Produce sufficient quantities of W76-1 warheads to meet Navy requirements;
- Complete a (nuclear and non-nuclear) life extension of the B61-12 by preparing for first production unit in 2019 that meets all safety, security, use control, and reliability objectives;
- Continue the life extension study for the W78, consistent with the principles of the Stockpile Management Program defined in Section 3113 (a)(2) of the National Defense Authorization Act of Fiscal Year 2010 (50 U.S.C. 2524).
- Provide funds for warhead surveillance and for the science and technology that support stockpile assessment and certification in the absence of nuclear testing.
- Recapitalize and modernize by 2022 highly enriched uranium capabilities.

Goal Area by Subprogram

DSW

STRATEGIC GOAL: Secure our Nation: Enhance nuclear security through defense, nonproliferation, and environmental efforts		
OBJECTIVE: Support the U.S. nuclear stockpile and future military needs		
TARGETED OUTCOME: Complete annual assessments of the stockpile the ensure it is safe, secure, and effective		
FY 2013 Annual Measure: Annual Warheads Certification: Annual percentage of warheads in the Stockpile that is safe, secure, reliable, and available to the President for deployment.		
	Target	**Actual/Met or Not Met**
Budget Year	100%	
Current Year	100%	
Prior Year	100%	100%
Annually, maintain 100% of the warheads in the stockpile as safe, secure, effective, and available to the President for deployment.		
TARGETED OUTCOME: Complete by 2022 the dismantlement of all weapon systems retired prior to 2009		
FY 2013 Annual Measure: Retired Weapons Systems Dismantlement: Complete the dismantlement of all weapons systems retired prior to 2009 per approved annual schedule published in the P&PD, PCDs and RPD "annual" documentation.		
	Target	**Actual/Met or Not Met**
Budget Year	100%	
Current Year	100%	
Prior Year	N/A	N/A
Complete the dismantlement of all weapons systems retired prior to 2009 per approved annual schedule published in the Production and Planning Directive (P&PD), Production Control Documents (PCDs), and the Requirements and Planning Document (RPD) documentation. This result is important because it is a concrete measure of the President's vision unveiled in Prague's Hradcany Square on April 5, 2009 for reducing nuclear dangers and pursuing the long-term goal of a world without nuclear weapons.		

Science Campaign

STRATEGIC GOAL: Secure our Nation: Enhance nuclear security through defense, nonproliferation, and environmental efforts		
OBJECTIVE: Support the U.S. nuclear stockpile and future military needs		
TARGETED OUTCOME: Deliver by 2020 a physics-based capability to enable assessment of weapon performance with quantified uncertainties.		
FY 2013 Annual Measure: 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. Collaboration with ICF Campaign.		
	Target	**Actual/Met or Not Met**
Budget Year	72%	
Current Year	68%	
Prior Year	63%	63%
By the end of 2020, use modern physics models in assessment calculations to replace the major empirical parameters affecting weapon performance. This result is important because it will improve nuclear weapon certification confidence.		

Readiness in Technical Base and Facilities

STRATEGIC GOAL: Secure our Nation: Enhance nuclear security through defense, nonproliferation, and environmental efforts		
OBJECTIVE: Support the U.S. nuclear stockpile and future military needs		
TARGETED OUTCOME: Recaptilize and modernize plutonium and highly enriched uranium capabilities by 2022.		
FY 2013 Annual Measure: 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 $20M with a schedule performance index (ratio of actual work performed to scheduled work) and a cost performance index (ratio of actual cost of work performed to budgeted cost of work) between 0.9-1.15		
	Target	**Actual/Met or Not Met**
Budget Year	90%	
Current Year	90%	
Prior Year	90%	90%
Annually achieve 90% baselined construction projects with TEC greater than $20M with actual SPI and CPI of 0.9-1.15 as measured against approved baseline definitions. This result is important because it demonstrates consistent and effective program and project management over multiple projects and improved efficiencies.		

Explanation of Funding and/or Program Changes

	(Dollars in Thousands)		
	FY 2012 Enacted	FY 2013 Request	FY 2013 vs. FY 2012
Weapons Activities			
Directed Stockpile Work	**1,873,694**	**2,088,274**	**+214,580**
The increase results from the ramp up in the Life Extension Program (LEP) for the B61-12 Phase 6.3 activities, in the Stockpile Systems area driven by systems maintenance (Neutron Generator (NG) activities), surveillance, W78 Study activities, and W88 ALT 370 arming fuzing and firing (AF&F) set development efforts and in the Stockpile Services area primarily due to the additional component development and technology maturation for LEPs and Limited Life Component Exchanges (LLCE), NG and detonator cable production to meet DoD requirements.			
Science Campaign	**332,958**	**350,104**	**+17,146**
This increase reflects executing one hydrodynamic experiment per year, development of expanded science capabilities, analysis and development of future experimental platforms, diagnostics and detectors including plutonium experiments.			
Engineering Campaign	**142,636**	**150,571**	**+7,935**
This increase reflects development of enhanced weapons surety and options for use in Life Extension efforts, validation-related testing, modernizing and expanding tools for nuclear and nonnuclear components which is offset by a reduction in the assessment of aging of weapon materials and components.			
Inertial Confinement Fusion Ignition and High Yield Campaign	**474,812**	**460,000**	**-14,812**
This decrease reflects the completion of NIC at the end of FY 2012 and transitioning to routine operations and rebalances efforts in ignition, advanced ignition, and high energy density weapons research. Additionally, non-ignition research resumes.			
Advanced Simulation and Computing Campaign	**618,076**	**600,000**	**-18,076**
This decrease reflects a deferral of the follow-on Predictive Science Academic Alliance Program and a change in the Sequoia procurement profile which is offset by space, power and utility infrastructure costs.			
Readiness Campaign	**128,406**	**130,095**	**+1,689**
This increase reflects fluctuating production costs at TVA and capital projects for control system updates at the Tritium Extraction Facility.			

	(Dollars in Thousands)		
	FY 2012 Current	FY 2013 Request	FY 2013 vs. FY 2012
Readiness in Technical Base and Facilities	**2,004,785**	**2,239,828**	**+235,043**
This increase reflects transitioning to the new facility for KCRIMS; support operations of nuclear facilities post de-inventory of the Superblock facility, including waste processing, handling, and off-site shipments; full-year radiological operations of the Radiological Laboratory/Utility/Office Building (RLUOB) and closure of Area G; safety upgrades in the Device Assembly Facility; full operational capability at the National Criticality Experiments Research Center (NCERC) and the Joint Actinide Shock Physics Experimental Research (JASPER) facility; funding for the Sandia Primary Standards Lab, accelerated de-inventory and consolidation of nuclear materials at the PF-4 vault and accelerating construction of the Uranium Processing Facility (UPF). The increases are offset by the deferral of the Chemistry and Metallurgy Research Replacement Nuclear Facility (CMRR-NF).			
Secure Transportation Asset	**242,802**	**219,361**	**-23,441**
This decrease reflects the finalization of the aviation fleet upgrades and cost savings resulting from the fleet upgrades and pilot federalization. Additionally, deference of vehicle fleet production and facility enhancements contributed to the decrease.			
Nuclear Counterrorism Incident Response	**220,969**	**247,552**	**+26,583**
This increase provides for additional render safe capabilities, nuclear threat device assessments and modeling.			
Facilities and Infrastructure Recapitalization Program	**96,120**	**0**	**-96,120**
This decrease reflects the conclusion of FIRP in FY 2012.			
Site Stewardship	**78,581**	**90,001**	**+11,420**
This increase reflects the addition of a new Corporate Project Management for directing common NNSA resources and assets.			
Defense Nuclear Security	**695,679**	**643,285**	**-52,394**
This decrease reflects the transition of LLNL from a Category I to a Category III special nuclear material site, and a 5% overall reduction to Protective Forces at Category I sites, as a result of Graded Security Protection reviews and collaborative inter-Departmental risk-based physical security policy reviews with the DoD, partially offset by increased management of security program operations at Category I sites as they undergo downsizing and transition activities associated with the Department's revised protection policy.			

	(Dollars in Thousands)		
	FY 2012 Current	FY 2013 Request	FY 2013 vs. FY 2012
Cyber Security	**126,370**	**0**	**-126,370**
This decrease reflects a funding transfer to the NNSA CIO Activities in FY2013			
NNSA CIO Activities	**0**	**155,022**	**+155,022**
This increase reflects a funding transfer from Cyber activities and the IT portion of the Office of the Administrator. There is an increase of $5M which reflects the current total cost for information technology services and unclassified business operations.			
National Security Applications	**10,000**	**18,248**	**+8,248**
This increase reflects a continued investment that will help restore capabilities that have atrophied or sustain and strengthen existing capabilities.			
Legacy Contractor Pensions	**168,232**	**185,000**	**+16,768**
This increase reflects the increase in the Weapons Activities portion of the DOE payment to the University of California Retirement Plan for former University of California employees and annuitants that worked at LANL and LLNL.			
Total, Weapons Activities	**7,214,120**	**7,577,341**	**+363,221**

Supporting Information

Operating Expenses, Capital Equipment and Construction Summary[a]

	(dollars in thousands)		
	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Weapons Activities			
Operating Expenses	6,119,879	6,394,050	6,823,458
Capital Equipment	221,164	226,030	231,003
General Plant Projects	69,648	71,180	72,746
Construction	455,084	522,860	450,134
Weapons Activities	**6,865,775**	**7,214,120**	**7,577,341**

[a] Funds are appropriated for Operations and Maintenance, which includes operating expenses, capital equipment and general plant projects. The program no longer budgets separately for capital equipment and general plant projects. Funding shown reflects estimates based on actual FY 2011 obligations.

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

The NNSA Weapons Activities appropriation projected contribution to the DOE Working Capital Fund for FY 2013 is $25, 516,725. The largest part of this increase, $15,177,000, is for the CyberOne initiative. CyberOne will allow the NNSA complex to communicate more effectively through one system.

Minority Serving Institution Partnerships Program

The Minority Serving Institution Partnerships Program (MSIPP-NNSA) aligns MSI investments with the NNSA mission in order to develop the needed skills and talent for NNSA's enduring technical workforce at the laboratories and production plants, and to enhance the research and education at under-represented colleges and universities.

NNSA previously supported MSI efforts, including Historically Black Colleges and Universities (HCBUs), through the Office of the Administrator, Weapons Activities, Defense Nuclear Nonproliferation, and Naval Reactors appropriations. FY 2013 will initiate the transition from the existing set of minority serving institution projects to the MSIPP, although the appropriations will still be requested in WA, DNN, and NR. The FY 2013 Request is $14.7 million of which $9.5 million is requested within Weapons Activities.

The goals of the MSIPP are as follows: 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 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 sites; and 5) Increase the number of MSI graduates/Postdocs hired into DOE's technical and scientific workforce.

Legacy Contractor Pensions

This program provides the annual Weapons Activities share of the Department of Energy's payment to the University of California for 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 (LLNL) and Los Alamos (LANL) National Laboratories. The UCRP benefit for these individuals is a legacy cost and DOE's annual payment to the UC is required by contracts W-7405-ENG-48 (UC LLNL) and W-7405-ENG-36 (UC LANL). The amount of the annual payment is determined by actuarial valuation in the actuarial validation 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.

Directed Stockpile Work
Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Directed Stockpile Work			
Life Extension Programs	248,357	479,098	543,931
Stockpile Systems	651,333	486,123	590,409
Weapons Dismantlement and Disposition	57,968	56,591	51,265
Stockpile Services	947,420	851,882	902,669
Total, Directed Stockpile Work	**1,905,078**	**1,873,694**	**2,088,274**

Out-Year Funding Profile by Subprogram and Activity

The outyear numbers for Weapons Activities do not reflect programmatic requirements. Rather, they are an extrapolation of the FY 2013 request based on rates of inflation in the Budget Control Act of 2011. The Administration will develop outyear funding levels based on actual programmatic requirements at a later date.

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
Consolidated Appropriations Act, 2012 (P.L. 112-74)
National Defense Authorization Act for FY 2012 (P.L. 112-81)

Overview

The Directed Stockpile Work (DSW) program is responsible for ensuring the reliability of the nation's nuclear weapons stockpile for a continued effective deterrent while maintaining and enhancing the safety and security, without underground nuclear testing. The DSW program is directly linked to the Department of Energy's (DOE's) Strategic Goal 3, "Enhance nuclear security through defense, nonproliferation, and Environmental efforts," as defined in the FY 2011 DOE Strategic Plan.

The nation's nuclear weapons stockpile consists of warheads with an average age over 25 years. A stockpile stewardship and management program ensures that all weapons in the stockpile remain safe, secure, and reliable. This includes maintenance, surveillance, assessment, and life extensions as necessary. In addition, DSW supports nonproliferation goals and international commitments by reducing available nuclear materials through the dismantlement and disposition of retired weapons and weapons components.

The 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; (3) conduct scheduled weapons maintenance; (4) conduct surveillance and evaluations to assess weapons reliability as well as to 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 reliability for insertion into Life Extension Programs (LEP)/modifications/ alterations; (7) efficiently extend the life of existing weapons systems through authorized modifications to correct technical issues and enhance safety, security, and reliability; (8) provide dismantlement and disposition of weapons and components for weapons retired from the stockpile; (9) compile and analyzes information during the Annual Assessment process to determine if problems exists; and (10) sustain the plutonium infrastructure to meet enduring national requirements unique to this special nuclear material.

DSW has four subprograms including: (1) Life Extension Programs (LEPs), which extend the lifetime of the nation's nuclear stockpile enabling the stockpile and the nuclear security enterprise to respond to threats of the 21st century without developing new weapon systems; (2) Stockpile Systems, which directly execute sustainment activities for all weapons systems in the stockpile (B61, W76, W78, W80, B83, W87, and W88); (3) Weapons Dismantlement and Disposition (WDD), which enables the elimination of retired weapons and weapons components; and (4) Stockpile Services, which

provide the foundation for the research, development, and production capability and capacity within the nuclear security enterprise to meet national and Department of Defense (DoD) requirements.

Program Accomplishments and Milestones

DSW major accomplishments for FY 2011 are listed below. More detailed program accomplishments are listed in the funding and activity schedule tables.

- Delivered all scheduled Limited Life Components (LLCs) for the B61, W76, W78, W80, B83, W87, and W88. LLCs include Gas Transfer Systems (GTS), reservoirs, neutron generators (NGs), and alteration kits to the DoD and 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 104% of planned W76-1 LEP production and completed deliverables to the Navy. Completed Phase 6.2/2A planning and cost estimates for the B61 LEP.
- Completed 120% of weapon dismantlement goals in pursuit of completing the dismantlement of weapons retired prior to FY 2009 by the end of FY 2022.
- Met scheduled multi-weapon surveillance requirements for Canned Subassembly, pit, NG, GTS, and detonator evaluations.
- Submitted Weapons Reliability Report to DoD (November and May).
- Completed Product Realization Integrated Digital Enterprise (PRIDE) deliverables to enhance Stockpile Evaluation Program activity management and analyses that support the Annual Assessment process for the nuclear weapons stockpile.
- Performed Permissive Action Link tests to ensure control of the nuclear weapon stockpile.
- Initiated Plutonium component fabrication for the Scaled Experiment program, in support of the subcritical experiments being performed by the Science Campaign.

Explanation of Changes

The Department's DSW request for FY 2013 represents an 11.5% increase above the FY 2012, primarily to reflect efforts to extend the life of the stockpile, such as funding the B61 Life Extension Program (LEP) as approved by Nuclear Weapons Council in the Fall of 2011, and the W88 Arming, Fuzing, and Firing (AF&F) activities. As a result of these changes, there may be some deferrals in completion dates for some of the LEPS. The increase in LEPs results from the ramp up of Phase 6.3 activities for the B61-12, which is partially offset by a reduction to the W76 LEP resulting from a reduced production rate. The increase in Stockpile Systems is driven by systems maintenance (Neutron Generator Activities), surveillance, W78 Study activities, and W88 ALT 370 AF&F set development efforts. The Weapons Dismantlement and Disposition program reflects a decrease resulting from a decline in the disposition of legacy weapon components. Stockpile Services reflects an increase primarily due to additional systems component development and technology maturation for LEPs and Limited Life Component Exchanges (LLCE), additional neutron generator (Sandia National Laboratories) and detonator cable (Los Alamos National Laboratories) production to meet DoD requirements, implementation of common tester architecture, Kansas City Responsive Infrastructure, Manufacturing and Sourcing (KCRIMS) activities, increase the material management of weapon components at Pantex, purchase of special material (alternating years), and completion of Load Line B gas transfer system recovery at Savannah River (SRS).

Program Planning and Management

From the Nuclear Weapons Stockpile Plan (NWSP), DSW ultimately derives its nuclear weapons stockpile requirements. The NWSP drives ongoing maintenance activities, warhead life extension needs, stockpile surveillance and assessment, and research and development of new technologies needed to support the stockpile now and in the future. The DSW in conjunction with the Readiness and Engineering Campaigns validates its work and funding priorities, which facilitates clear alignment with NNSA and DOE strategic objectives. By engaging in semi-annual, bottom-up reviews and planning summit meetings of its work across the Future Years Nuclear Security Plan (FYNSP), process for allocating resources consistently achieving its goal of funding the highest priority work and addressing near-term and out-year challenges using an enterprise solution approach amongst Defense Programs.

Strategic Management

In meeting the mission challenges to NNSA, the Department will implement strategies that will exercise or impact all major elements of the deterrent: the stockpile itself; the science, technology, and engineering base which underpins the nation's ability to sustain the stockpile as safe, secure, and reliable; and the production and laboratory physical infrastructure. Technical issues

within the stockpile will be identified and addressed because new weapons systems will not be built. The stockpile management program will continue to consider life extension work on legacy weapons systems to assure their effectiveness, while enhancing warhead safety and security, without requiring additional underground nuclear tests. The NNSA science, technology, and engineering (ST&E) capabilities underwrite the deterrent. As the stockpile decreases in size, the role of ST&E within the future deterrent increases in importance.

Much of the current production infrastructure was established during the Cold War, is 50-60 years of age, and decades beyond its original design life. The infrastructure will be correctly sized and recapitalized to efficiently execute stockpile life extension activities, dismantle surplus weapons, manage and dispose of surplus fissile materials, and other nuclear security needs.

The stockpile management (SM) program, consistent with the principles of the Stockpile Management Program defined in Section 3113 (a)(2) of the National Defense Authorization Act of Fiscal Year 2010 (50 U.S.C. 2524), emphasizes the following key requirements:

- Produce W76-1 warheads at a different rate and shift funds to pursue engineering development activities toward a B61-12 first production unit in FY 2019.
- Focus life extension study efforts to explore the path forward for the W78 life extension study (LES) that includes the possibility of using the resulting warhead also on the Submarine Launch Ballistic Missile (SLBM) to reduce the number of warheads.
- Continue Engineering development, phase 6.3 for the W88 alteration (ALT) 370 arming, fuzing, and firing set replacement.
- Sustain and strengthen the ST&E and surveillance base essential to supporting the stockpile.
- Make deliveries of limited life and other components for nuclear weapons stockpile management and refurbishment, working through its nuclear security enterprise, according to schedules developed jointly by the NNSA and the DoD.
    - To accomplish this, Stockpile Management will implement the Component Maturation Framework (CMF) to design, develop and produce components for limited life component exchanges and minimal Life Extension Programs.
    - CMF is a planning approach to integrate and align technology development and maturation activities with the particular LEP and LLC efforts targeted for use of these technologies. The goal is to insure the availability of new technologies whose performance can be confidently certified and reliably manufactured (For more detailed discussion of CMF please see Engineering Campaign write-up).
    - CMF is supported by Engineering Campaign, Readiness Campaign, Directed Stockpile Work Stockpile Services, Stockpile Systems and Readiness Campaign resources.
    - SM uses the CMF to adjust priorities within these programs to assure components are available when needed to support the stockpile.

- Carry-out dismantlement activities in support of NNSA's commitment to transition to a smaller stockpile that remains safe, secure, and reliable.

Major Outyear Priorities and Assumptions

The outyear numbers for Weapons Activities do not reflect programmatic requirements. Rather, they are an extrapolation of the FY 2013 request based on rates of inflation in the Budget Control Act of 2011. The Administration will develop outyear funding levels based on actual programmatic requirements at a later date. Major Outyear Priorities and Assumptions will be delineated at that time.

Program Goals and Funding

The outyear numbers for Weapons Activities do not reflect programmatic requirements. Rather, they are an extrapolation of the FY 2013 request based on rates of inflation in the Budget Control Act of 2011. The Administration will develop outyear funding levels based on actual programmatic requirements at a later date. Major Outyear Priorities and Assumptions will be delineated at that time.

Explanation of Funding and/or Program Changes

	(Dollars in Thousands)		
	FY 2012 Enacted	FY 2013 Request	FY 2013 vs. FY 2012
Directed Stockpile Work			
Life Extension Program			
· B61 Life Extension Program	**222,845**	**369,000**	**+146,155**
The increase reflects a ramp up of B61-12 activities in response to the Nuclear Weapons Council (NWC) anticipated approval and entry into Phase 6.3 Development Engineering; including procurement of development hardware for 48 major components and assemblies, testers and conduct of component level and system level ground and flight development testing. The Department will transmit outyear planned completion schedules in the FY 2013 submission of the Stockpile Stewardship and Management Plan (SSMP).			
· W76 Life Extension Program	**256,253**	**174,931**	**-81,322**
The decrease reflects a change in the funding strategy for life extension programs (LEP). In order to invest in the B61 LEP, NNSA will operate production builds for the W76-1 at a reduced rate. The Department will transmit outyear planned completion schedules in the FY 2013 submission of the Stockpile Stewardship and Management Plan (SSMP).			
Total, Life Extension Programs	**479,098**	**543,931**	**+64,833**
Stockpile Systems			
· B61 Stockpile Systems	**72,396**	**72,364**	**-32**
The decrease reflects primarily level funding.			
· W76 Stockpile Systems	**63,383**	**65,445**	**+2,062**
The increase reflects primarily level funding.			
· W78 Stockpile Systems	**98,014**	**139,207**	**+41,193**
The increase reflects activities for life extension study ramp-up on program planning, systems engineering, design development, testing, and qualification. It also reflects direction to provide a common W78/W88 Warhead and integrate Arming Fuzing and Firing (AF&F) components.			

	(Dollars in Thousands)		
	FY 2012 Enacted	FY 2013 Request	FY 2013 vs. FY 2012
· **W80 Stockpile Systems**	**44,444**	**46,540**	**+2,096**
The increase reflects the development and production engineering Neutron Generators (NG) to meet a First Production Unit (FPU) date in FY 2015. In addition, the increase provides funds for the production and delivery of gas transfer systems.			
· **B83 Stockpile Systems**	**48,215**	**57,947**	**+9,732**
The increase reflects development of the electronic neutron generator limited life component and qualification leading to first production in FY 2014.			
· **W87 Stockpile Systems**	**83,943**	**85,689**	**+1,746**
The increase reflects primarily level funding.			
· **W88 Stockpile Systems**	**75,728**	**123,217**	**+47,489**
The increase reflects the W88 ALT 370 activity ramp-up on program planning, systems engineering, design development, testing, and qualification.			
The increase also represents the W88 enduring Stockpile System planning and development of Limited Life Component Exchanges including Gas Transfer Systems and Neutron Generators. The Department will transmit outyear planned completion schedules in the FY 2013 submission of the Stockpile Stewardship and Management Plan (SSMP).			
Total, Stockpile Systems	**486,123**	**590,409**	**+104,286**
Weapons Dismantlement and Disposition	**56,591**	**51,265**	**-5,326**
The decrease reflects a decline of the disposition of legacy weapon components.			
Stockpile Services			
· **Production Support**	**327,349**	**365,405**	**+38,056**
The increase reflects additional neutron generator (SNL) and detonator cable (LANL) production to meet DoD requirements, implementation of common tester architecture and installation of tester replacements for multi-system surveillance at KCRIMS, re-start operations at KCRIMS, increase the capacity for material management of weapon components at Pantex (PX), special request shipping operations and warehousing, purchase of special material			

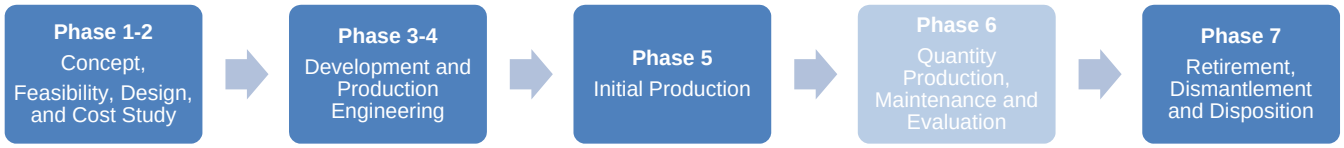
	(Dollars in Thousands)		
	FY 2012 Enacted	FY 2013 Request	FY 2013 vs. FY 2012
(alternating years), and completion of Load Line B gas transfer system recovery at SRS.			
· **Research and Development (R&D) Support**	**30,264**	**28,103**	**-2,161**
The decrease reflects a reduction in the amount of support needed for program management and integration of non-nuclear components required for the B61-12 activities in response to the Nuclear Weapons Council (NWC) anticipated approval and entry into Phase 6.3 Development Engineering.			
· **R&D Certification and Safety**	**165,569**	**191,632**	**+26,063**
The increase reflects additional systems component development and technology maturation for future LEPs and LLCs. This includes activities such as development, qualification, and research for those components and subsystems.			
· **Management, Technology, and Production**	**188,700**	**175,844**	**-12,856**
The decrease reflects a change in Sandia National Laboratories (SNL) accounting in that independent assessment and weapon reliability activities are no longer funded solely by this program. The accounting change reflects a shift from direct to indirect funding.			
· **Plutonium Sustainment**	**140,000**	**141,685**	**+1,685**
The increase reflects primarily level funding including planned reconstruction of the capability to manufacture power sources and recovery of critical feed material.			
Total, Stockpile Services	**851,882**	**902,669**	**+50,787**
Total Funding Change, Directed Stockpile Work	**1,873,694**	**2,088,274**	**+214,580**

Life Extension Program (LEP)
Overview

Life extension is a major stockpile management program activity necessary to extend the expected stockpile lifetime of legacy weapons systems for an additional 20 to 30 years. The NNSA, in conjunction with the DoD, executes a LEP following the procedural guidelines of the Phase 6.x process. Weapons systems entering the Phase 6.x process results from Nuclear Weapon Council (NWC) recommendations to the President to develop and field replacements of those components that will extend the life of legacy systems and enhance their safety, security and reliability. The President then seeks Congressional authorization to expend resources to implement those decisions regarding the options developed during Phases 6.1 (concept assessment) and 6.2 (feasibility and option development). The LEP activities include the research, development, and production work required to ensure weapons systems continue to meet national security requirements.

The 2010 Nuclear Posture Review validated a need for the B61 and W76 along with their respective quantity requirements and continued production ramp up at the Pantex Plant, increase non-nuclear activities at the Kansas City Plant (KCP), and development of nuclear and non-nuclear technologies for the B61.

Sequence



Benefits

- Extends the expected stockpile lifetime of legacy weapons systems for an additional 20 to 30 years.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
Life Extension Programs		
FY 2011		**248,357**
FY 2012		**479,098**
FY 2013		**543,931**
FY 2014-FY 2017		**TBD**
B61 LEP		
FY 2011	• See B61 Phase 6.2/6.2A Study in Stockpile Systems below.	**0**
FY 2012	• Air Force includes development of interface control documents (ICD) between NNSA's bomb assembly and the Air Force provided tail kit assembly (TKA) and aircraft-to-bomb ICDs to implement a digital interface to assure compatibility with legacy and modern aircraft. • **Component Development & Production**: Phase 6.3 development engineering activities will focus on updating component conceptual designs 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. Laboratory and production plants will initiate activities to produce the initial development lots to continue maturing technologies in preparation for future ground and flight testing in FY 2014. Plants will initiate production readiness activities to include development of component tooling and testers to produce development lots and assure readiness for Phase 6.4 activities in FY 2016.	**222,845**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Life Extension Programs		
	• **System Testing & Qualification**: Phase 6.3 development engineering activities include assembly of both ground and flight joint test assemblies to assess mechanical and thermal stockpile-to-target environments, continuation of hydrodynamic testing at Los Alamos National Laboratory to assess and provide certification data for changes made to the nuclear explosive package and related components, and continuation of modeling and simulations associated with component and system designs.	
FY 2013	• **System Engineering & Integration:** Phase 6.3 development engineering will continue in FY 2013 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. FY 2013 systems engineering and integration activities include assessment and integration of component development efforts in preparation to baseline B61-12 systems design in FY 2015. Work will continue on development and testing of new joint test assemblies to support joint flight testing with the Air Force. Type 3 and Type 5 trainers and associated h-gear/t-gear designs will be developed. Joint system integration activities with the Air Force will continue including finalization interface control documents (ICD) between NNSA's bomb assembly and the Air Force provided tail kit assembly (TKA) and aircraft-to-bomb ICDs to implement a digital interface to assure compatibility with legacy and modern aircraft. • **Component Development & Production**: Phase 6.3 development engineering activities will continue in FY 2013 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. Production and delivery of component hardware from development lots will continue to support component and system level flight and laboratory testing in FY 2014. Product realization teams will coordinate with sites to assure required readiness activities are accomplished including initiation of the KCP Botts transition and initiation of Special Nuclear Material Component Requalification Facility (SNMCRF) facility readiness to support B61 pit reacceptance. Development of component tooling and testers designs will continue to support readiness for Phase 6.4 activities in FY 2016. • **System Testing & Qualification:** Phase 6.3 development engineering activities will continue in FY 2013 with the preparation of ground and flight joint test assemblies. Ground testing will begin in FY 2013 to assess mechanical and thermal environments. Development flight testing will begin in FY 2014 and will utilize B61-12 functional hardware from component development lots produced in FY 2013. Joint testing is required with the Air Force to demonstrate compatibility with the tail kit assembly (TKA) and selected aircraft platforms. Los Alamos National Laboratory will continue hydrodynamic testing to assess certification, and both laboratories will continue to utilize modeling and simulation capabilities to support component and system design margin analysis	**369,000**
FY 2014-FY 2017	• **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 in FY2015. The Air Force will hold a preliminary design review and acceptance group (DRAAG) in FY 2015 to assess design and qualification against military requirements. Early Type 5 trainers will be produced in	**TBD**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Life Extension Programs		
	FY 2016 to support production readiness at the Pantex Plant. Process prove-in (PPI) activities will continue in FY2016 through FY2018. Completion of the final design review, independent peer reviews, and system final design release will be completed in FY 2018. Joint qualification activities will support release of system qualification and associated aircraft compatibility documents. Phase 6.5 will occur in late FY 2018 following the completion of production readiness review and Gate E. The First production unit will occur in FY 2019. • **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. Process prove-in (PPI) and qualification activities will continue in FY 2016 through FY 2018 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 qualification will be completed in FY 2018 and all war reserve hardware will be required to ship to Pantex in early FY 2019 to support the first production unit. • **System Testing & Qualification**: 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 2018. NNSA and Air Force will conduct aircraft compatibility testing to certify the B61-12 nuclear bomb on required aircraft platforms. Laboratories will continue modeling and 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 B61-12 nuclear bomb in preparation for the first production unit in FY 2019. The final weapon design report and final design review and acceptance group (DRAAG) reviews will be scheduled for late FY 2019	
W76 LEP		
FY 2011	• Completed 104 percent of production schedule of the W76-1/Mk4A and 100 percent of negotiated weapon deliveries to the Navy for the Submarine Launched Ballistic Missiles (SLBM). The Annual Assessment and certification process of weapons subject to this LEP was performed and efforts for improving the manufacturability of the components and reducing costs were executed. • Completed War Reserve production and life extension activities required for providing materials for the assembly of the reentry body assembly, including, components for the nuclear explosive package, AF&F assembly, 2X Acorn Gas Transfer System, Military Characteristics (MC)4380A Neutron Generator, and associated cables, elastomers, valves, pads, cushions, foam supports, telemetries, and miscellaneous parts. • Closed Code Blue associated with the Intent Stronglink. • Completed Retrofit Evaluation System Tests (REST) of LEP production components and war reserve hardware. Production of replacement components destructively tested and rebuild of war reserve after REST. • At the Kansas City Plant (KCP), completed purchase of materials in economic lot sizes that reduced costs by an additional $2.6M in FY 2011, for a total of $18.2M since FY 2007 for the LEP. Established requirements for process transfers, executing activities to assure continuity of production at Pantex during process transfer,	**248,357**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Life Extension Programs		
	provisioned for components; materials; containers; special tooling; certification of test equipment for the move to new facility at Botts Road. • Completed resourcing required to provide production capacity and production rate by the end of FY 2013. This supports the production rates contained in the Requirements and Planning Document (RPD) and schedules to meet the future deliverables in agreement with the Department of the Navy (DoN) and in support of submarine deployment requirements. • Executed the W76 LEP investments to reduce the risk of production delays in FY 2012.Executed the W76 LEP investments to reduce the risk of production delays in FY 2012.	
FY 2012	• Program execution of the Annual Assessment and certification process of weapons subject to this LEP and continued efforts for improving the manufacturability of the components and reducing costs. • War Reserve production at a reduced rate and life extension activities providing materials for the assembly of the reentry body assembly, including, components for the nuclear explosive package, AF&F assembly, 2X Acorn Gas Transfer System, Military Characteristics (MC)4380A Neutron Generator, and associated cables, elastomers, valves, pads, cushions, foam supports, telemetries, and miscellaneous parts. • Continuation of the disassembly of W76-0 for the LEP feedstock. • Retrofit Evaluation System Tests (REST) of LEP production components and war reserve hardware. Production of replacement components destructively tested and rebuild of war reserve after REST. • Production of replacement components destructively tested and rebuild of war reserve after stockpile surveillance through the life of the program. • At the Kansas City Plant (KCP), continue purchase of materials in economic lot sizes to reduce costs for the LEP. And, establish requirements for process transfers, executing activities to assure continuity of production at Pantex during process transfer, provision of components; materials; containers; special tooling; certification of test equipment for the move to new facility at Botts Road. • Complete purchase of tooling and testers required to provide production capacity and production rate by the end of FY 2013. This funding supports 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.	**256,253**
FY 2013	• The program will continue to operate production builds at a reduced rate. 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. • Realign the W76-1 life extension program staff at the Plants and National Laboratories against the production schedule.	**174,931**
FY 2014-FY 2017	• Continue production, ongoing activities and staffing, at a reduced rate through the outyears.	**TBD**

Stockpile Systems
Overview

Stockpile Systems directly executes sustainment activities for the total (active and inactive) stockpile for the B61, W76, W78, W80, B83, W87, and W88 weapons; and provides safety, security and reliability and determines whether an underground test is required by 50 United States Code 2525, mandating Annual Assessment and memorandum to the President. There are four major Stockpile Systems areas that require FY 2013 funding:

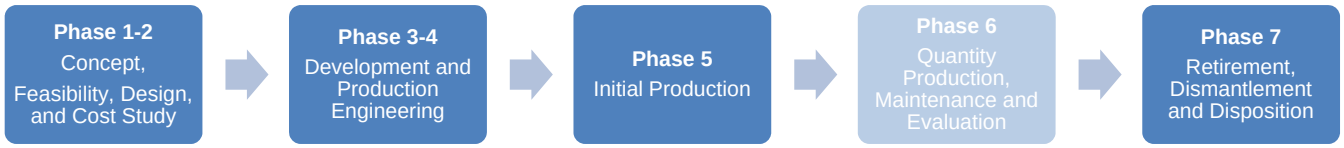
(1) Weapon Maintenance: includes production of Limited Life Components (LLCs) and performance of Limited Life Component Exchanges (LLCEs) on Gas Transfer Systems (GTS) and Neutron Generators (NGs) as required in accordance with National Requirements Documents and/or Directive Schedules; day-to-day stockpile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

(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 reliability of the nuclear weapons stockpile, which contribute to the Annual Certification to the President;

(3) Weapon Assessment and Support: includes Stockpile R&D activities conducted in the following areas: maintain system certification, assess the safety, security and reliability of the nuclear weapons stockpile to form the basis of the Annual Assessment to the President which assesses safety, security and effectiveness of the stockpile in the absence of nuclear testing, respond to emerging problems or issues in a timely manner including resolution of Significant Finding Investigations (SFI), support directive schedules, develop modern physics and engineering baselines, perform development and engineering to support refurbishments approved by the NWC, develop refurbishment technologies, maintain flexibility to respond to requirements, and maintain the capability to refurbish and design new weapons and weapons components as required; and

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

Sequence



Benefits

- Ensures the active stockpile of B61, W76, W78, W80, B83, W87, and W88 is safe, secure, and reliable.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
Stockpile Systems		
FY 2011		**651,333**
FY 2012		**486,123**
FY 2013		**590,409**
FY 2014-FY 2017		**TBD**
B61 Stockpile Systems		
FY 2011		**306,647**
FY 2012		**72,396**
FY 2013		**72,364**
FY 2014-FY 2017		**TBD**
B61 System Sustainment		
FY 2011	• **Weapon Maintenance:** Delivered all scheduled Limited Life Components (LLCs) which include Gas Transfer Systems (GTS), reservoirs, neutron generators (NGs), and alteration kits to the DoD and Pantex Plant to maintain the nuclear weapons stockpile. Completed life of program production activities in support of B61 Alt 356 (Spin Rocket Motor). • **Weapon Surveillance:** Conducted surveillance programs using data collection from flight tests, laboratory tests, and component evaluations sufficient to assess stockpile reliability without nuclear testing. Completed B61 Mod 7 Rebuild planning and scheduling. Rebuild scheduled to commence in FY 2013. • **Weapon Assessment and Support:** Completed all Annual Assessment Reports and Laboratory Director Letters to the President. • **Development Studies/Capability Improvements**: Provided support to US Global Strike Command for studies related to storage of conventional munitions and nuclear weapons.	**67,981**
FY 2012	• **Weapon Maintenance:** Produce LLCs/perform LLCEs on GTSs and NGs as required; execute repair. • **Weapon Surveillance:** Conduct surveillance activities to provide the National Laboratory Directors with robust state-of-health nuclear weapon data necessary to complete Weapon Reliability and Annual Assessment Reports. • **Weapon Assessment and Support:** Conduct weapon assessment and certification activities necessary to complete Weapon Reliability and Annual Assessment Reports. • **Development Studies/Capability Improvements:** Conduct feasibility studies as required in conjunction with the DoD, execute replacement activities including: new container procurements for field component exchanges, system integration of the new common B61/B83 NG; and replacement of end-of-life B61 joint test assembly flight recorders and system-level laboratory testers.	**72,396**
FY 2013	• **Weapon Maintenance:** Produce LLCs and perform LLCEs on both GTSs and NGs as required; execute repair operations. • **Weapon Surveillance:** Conduct surveillance activities to provide the National Laboratory Directors with robust state-of-health nuclear weapon data necessary to complete Weapon Reliability and Annual Assessment Reports. These activities include but are not limited to: disassembly and inspection, system-level laboratory and joint flight testing, component and material evaluations, platform compatibility	**72,364**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Stockpile Systems		
	and testing activities, and production of weapon components expended during surveillance testing. • **Weapon Assessment and Support:** Conduct weapon assessment activities necessary to complete Weapon Reliability and Annual Assessment Reports. • **Development Studies/Capability Improvements:** Conducted feasibility studies as required in conjunction with the DoD, execute replacement activities including: new container procurements for field component exchanges, system integration of the new common B61/B83 NG; and replacement of end-of-life B61 joint test assembly flight recorders and system-level laboratory testers.	
FY 2014-FY 2017	• **Weapon Maintenance:** Continue activities for LLCs, GTS and NGs as required. Achieve first production on electronic neutron generator qualified for both B61 and B83. • **Weapon Surveillance:** Continue the ongoing activities in the outyears as stated in FY 2013. Begin using the new system tester at the Weapon Evaluation and Test Laboratory and the modernized JTA. • **Weapon Assessment and Support:** Continue annual activities necessary to complete Weapon Reliability and Annual Assessment Reports. • **Development Studies/Capability Improvements:** Continue annual activities as stated in FY 2013.	**TBD**
B61 Phase 6.2/6.2A Study		
FY 2011	• Assessed, as part of the B61-12 life extension study, NNSA Bomb Assembly and DoD Tail kit Assembly options with Air Force to ensure sustainment of the extended deterrence mission. • Initiated nuclear technology development efforts and nuclear product realization teams for the B61-12 following approval and reprogramming of the nuclear scope to ensure study completion stays on schedule. • Matured over 50 technologies and components, completed component and system design reviews, and developed detailed schedules for the B61 life extension program to ensure a 2017 first production requirement. • Completed detailed cost estimates for the B61-12 options and documented results in the weapon design cost report (WDCR).	**238,666**
FY 2012	• The Phase 6.2/6.2A study was completed. Funding for the B61 Phase 6.3 Development Engineering was transferred to the B61 LEP section.	**0**
FY 2013	• Program transferred to LEP line.	**0**
FY 2014-FY 2017	• Program transferred to LEP line.	**0**
W76 Stockpile Systems		
FY 2011	• Completed the study of Navy proposed changes Stockpile to Target Sequence (STS) operational environments resulting from their implementation of the Alternate Release Assembly (ARA). The study results showed that was adequate margin in system performance with no degradation to quality and reliability or the warhead from the implementation of the ARA and the proposed change to the STS is acceptable.	**64,787**
FY 2012	• **Weapon Maintenance:** Produce LLCs/perform LLCEs on GTSs and NGs as requested by the Department of the Navy (DoN). • **Weapon Surveillance:** Conduct surveillance activities to provide the National	**63,383**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Stockpile Systems		
	Laboratory Directors with state-of-health nuclear weapon data necessary to complete Weapon Reliability and Annual Assessment Reports (AAR), these activities 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:** Conduct weapon assessment activities necessary to complete Weapon Reliability and Annual Assessment Reports (AAR), to include: laboratory/site testing and analysis, trainer refurbishments, Project Officers Group (POG) and DoN safety studies, and significant finding investigations (SFI). • **Development Studies/Capability Improvements:** W76 studies and capabilities are focused toward the on-going LEP.	
FY 2013	• **Weapon Maintenance:** Produce LLCs/perform LLCEs on GTSs and NGs as requested by the DoN. • **Weapon Surveillance:** Conduct surveillance activities to provide the National Laboratory Directors with state-of-health nuclear weapon data necessary to complete Weapon Reliability and Annual Assessment Reports (AAR), these activities include: D&I, system-level laboratory and joint flight testing, CME, and platform compatibility and testing activities. • **Weapon Assessment and Support:** Conduct weapon assessment activities necessary to complete Weapon Reliability and AAR, to include: laboratory/site testing and analysis, trainer refurbishments, POG and DoN safety studies, and SFIs. • **Development Studies/Capability Improvements:** W76 studies and capabilities are focused toward the on-going LEP.	**65,445**
FY 2014-FY 2017	• **Weapon Maintenance:** Produce LLCs/perform LLCEs on GTSs and NGs as requested by the DoN. • **Weapon Surveillance:** Continue annual activities as stated in FY 2013. • **Weapon Assessment and Support:** Continue annual activities as stated in FY 2013. • **Development Studies/Capability Improvements:** W76 studies and capabilities are focused toward the on-going LEP.	**TBD**
W78 Stockpile Systems		
FY 2011		**73,821**
FY 2012		**98,014**
FY 2013		**139,207**
FY 2014-FY 2017		**TBD**
W78 System Sustainment		
FY 2011	• **Weapon Maintenance**: Delivered all scheduled Limited Life Components (LLCs) which include Gas Transfer Systems (GTS), reservoirs, neutron generators (NGs), and alteration kits to the DoD and Pantex Plant to maintain the nuclear weapons stockpile. • **Weapon Surveillance:** Conducted surveillance programs using data collection from flight tests, laboratory tests, and component evaluations sufficient to assess stockpile reliability without nuclear testing. • **Weapon Assessment and Support:** Completed all Annual Assessment Reports and Laboratory Director Letters to the President.	**47,821**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Stockpile Systems		
	• **Development Studies/Capability Improvements:** Provided support to US Global Strike Command for studies related to storage of conventional munitions and nuclear weapons.	
FY 2012	• **Weapon Maintenance:** Produce gas transfer systems and neutron generators to meet limited life component stockpile requirements, and complete the First Production Unit for the LF7B. Authorization and start-up activities to perform repairs to W78 warheads at Pantex. • **Weapon Surveillance:** Perform surveillance activities to provide the National Laboratory Directors with robust state-of-health nuclear weapon data necessary to complete Weapon Reliability and Annual Assessment Reports, to include but not limited to: disassembly and inspections (D&Is), system-level laboratory tests, joint flight testing, component and material evaluations and a study to determine the feasibility of incorporating a High Accuracy Separation Package into the instrumented W78 Joint Test Assembly. • **Weapon Assessment and Support:** Conduct weapon assessment activities necessary to complete Weapon Reliability and Annual Assessment Reports, to include: laboratory testing and analysis and resolution of significant finding investigations. • **Development Studies/Capability Improvements:** Conduct feasibility studies as required and in conjunction with the DoD.	**67,853**
FY 2013	• **Weapon Maintenance:** Produce neutron generators and gas transfer systems to satisfy limited life component requirements and obtain authorization to conduct repairs at Pantex in FY13. • **Weapon Surveillance:** Perform surveillance activities to provide the National Laboratory Directors with robust state-of-health nuclear weapon data necessary to complete Weapon Reliability and Annual Assessment Reports, to include but not limited to: disassembly and inspections, system-level laboratory tests, joint flight testing, component and material evaluations, and assessment for the development and incorporation of a High Accuracy Separation Package on instrumented Joint Test Assemblies to obtain higher fidelity flight dynamic measurements and characterizations. • **Weapon Assessment and Support:** Conduct 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:** Complete joint NNSA/DoD High Accuracy Separation Package feasibility study, and conduct feasibility studies as required and in conjunction with the DoD as necessary.	**62,617**
FY 2014-FY 2017	• **Weapon Maintenance:** Produce neutron generators and gas transfer systems to satisfy limited life component requirements and execute the warhead repair schedule. • **Weapon Surveillance:** Continue the annual activities as stated in FY 2013. • **Weapon Assessment and Support:** Continue annual activities to produce the annual reports stated in FY 2013. • **Development Studies/Capability Improvements:** Conduct feasibility studies as required and in conjunction with the DoD as necessary.	**TBD**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Stockpile Systems		
W78 Life Extension Study		
FY 2011	• Initiated the W78 Phase 6.1 Life Extension Study to evaluate concepts and options that would allow the possibility of using the resulting warhead on SLBMs to reduce the number of warhead types.	**26,000**
FY 2012	• Continue with the Phase 6.1 Study that was authorized in May 2011. • Evaluate the nuclear explosives package for commonality among the Mk12A re-entry vehicle and the Mk5 RBA, evaluate safety and security upgrades, extend service life, and align with DoD component (e.g., fuze) acquisition program. • Finalize set of options to move into Phase 6.2/2A for feasibility studies. • Initiate Phase 6.2/2A Study.	**30,161**
FY 2013	• Continue to study feasibility of identified option set to include the nuclear explosives package for commonality amongst the Mk12A re-entry vehicle and the Mk5 RBA, study feasibility of various surety architectures, while ensuring Military Characteristics are met. Continued alignment with DoD fuze acquisition program. • Reflects activities that will help provide a common W78/W88 Warhead and itegrated Arming Fuzing and Firing (AF&F) components.	**76,590**
FY 2014-FY 2017	• Continue with Phase 6.X Activities including Phase 6.3 authorization request in 2014 and subsequent Phase 6.X work to support a First Production Unit in the 2023 timeframe.	**TBD**
W80 Stockpile Systems		
FY 2011	• **Weapon Maintenance**: Delivered all scheduled Limited Life Components (LLCs) which include Gas Transfer Systems (GTS), reservoirs, neutron generators (NGs), and alteration kits to the DoD and Pantex Plant to maintain the nuclear weapons stockpile. Completed planned Integrated Phase Gate A reviews at the System level for Alt 369 and at the neutron generator level. Gate A is a thorough review of how well the requirements are defined. Both Product Realization Teams passed through the Gate successfully. • **Weapon Surveillance:** Conducted surveillance programs using data collection from flight tests, laboratory tests, and component evaluations sufficient to assess stockpile reliability without nuclear testing. • **Weapon Assessment and Support:** Completed all Annual Assessment Reports and Laboratory Director Letters to the President. • **Development Studies/Capability Improvements:** Provided support to US Global Strike Command for studies related to storage of conventional munitions and nuclear weapons.	**39,196**
FY 2012	• **Weapon Maintenance:** Produce LLCs/perform LLCEs on GTSs and NGs as required. • **Weapon Surveillance:** Conduct surveillance activities to provide the National Laboratory Directors with robust state-of-health nuclear weapon data necessary to complete Weapon Reliability and Annual Assessment Reports, to 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:** Conduct weapon assessment activities necessary to complete Weapon Reliability and Annual Assessment Reports, to include: laboratory/site testing and analysis, trainer refurbishments, POG and DoD	**44,444**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Stockpile Systems		
	safety studies, significant finding investigations. • **Development Studies/Capability Improvements:** Conduct feasibility studies as required in conjunction with the DoD, provide NG subassembly and timer driver development lots as well as system qualification and transportation testing, design, develop, and produce timers, detonators and NGs at Sandia National Laboratories to meet FPU in FY 2014, and complete RPD requirement to revisit LEP possibilities in conjunction with the DoD as well as NPR direction to pursue the same. The NG FY 2014 FPU is essential to meet Air Force requirements.	
FY 2013	• **Weapon Maintenance:** Produce LLCs/perform LLCEs on GTSs and NGs as required. • **Weapon Surveillance:** Conduct surveillance activities to provide the National Laboratory Directors with nuclear weapon data necessary to complete Weapon Reliability and Annual Assessment Reports, to 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:** Conduct 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:** Conduct 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 FPU in FY 2014 The NG FY 2014 FPU is essential to meet Air Force requirements. Continue to coordinate Long Range Stand Off (LRSO) activities and analyze options relevant to the Air Force Analysis of Alternatives for the future LRSO.	**46,540**
FY 2014-FY 2017	• **Weapon Maintenance:** Produce LLCs/perform LLCEs on GTSs and NGs as required. • **Weapon Surveillance:** Continue to conduct annual activities as stated in FY 2013. • **Weapon Assessment and Support:** Continue annual activities as stated in FY 2013. • **Development Studies/Capability Improvements:** Continue annual activities as stated in FY 2013.	**TBD**
B83 Stockpile Systems		
FY 2011	• **Weapon Maintenance:** Delivered all scheduled Limited Life Components (LLCs) which include Gas Transfer Systems (GTS), reservoirs, neutron generators (NGs), and alteration kits to the DoD and Pantex Plant to maintain the nuclear weapons stockpile. Completed Gate A GTS Alt 353 confirming requirements for GTS replacement. Completed Gate A, B, C of electronic neutron generator (ELNG) replacement Alt 753 confirming alignment of scope, cost and schedule to assure 2014 NG first production unit (FPU). • **Weapon Surveillance:** Conducted surveillance programs using data collection from flight tests, laboratory tests, and component evaluations sufficient to assess stockpile reliability without nuclear testing. • **Weapon Assessment and Support:** Completed all Annual Assessment Reports and Laboratory Director Letters to the President.	**40,427**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Stockpile Systems		
	• **Development Studies/Capability Improvements:** Provided support to US Global Strike Command for studies related to storage of conventional munitions and nuclear weapons. Successfully completed dismantlement of 2 war reserve (WR) flight test conditioned canned subassemblies (CSAs) to support critical annual assessment data.	
FY 2012	• **Weapon Maintenance:** Produce LLCs/perform LLCEs on GTSs and NGs as required; execute repair, maintenance, and replacement of aging weapon components. • **Weapon Surveillance:** Conduct surveillance activities to provide the National Laboratory Directors with robust state-of-health nuclear weapon data necessary to complete Weapon Reliability and Annual Assessment Reports, these 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:** Conduct weapon assessment activities necessary to complete Weapon Reliability and Annual Assessment Reports, to include: laboratory/site testing and analysis, trainer refurbishments, Project Officer's Group (POG) and DoD safety studies, and significant finding investigations. • **Development Studies/Capability Improvements:** Conduct feasibility studies as required in conjunction with the DoD, execute design and development activities of a new electronic NG and GTS (including design, testing, and qualification) to meet a FPU in FY 2014.	**48,215**
FY 2013	• **Weapon Maintenance:** Produce LLCs and perform LLCEs on both GTSs and NGs as required. Authorize and execute rebuild activities. • **Weapon Surveillance:** Conduct surveillance activities to provide the National Laboratory Directors with robust state-of-health nuclear weapon data necessary to complete Weapon Reliability and Annual Assessment Reports. These activities include but are not limited to: disassembly and inspection, system-level laboratory and joint flight testing, component and material evaluations, platform compatibility and testing activities, and production of weapon components expended during surveillance testing. • **Weapon Assessment and Support:** Conduct weapon assessment activities necessary to complete Weapon Reliability and Annual Assessment Reports, to include: laboratory/site testing and analysis, trainer refurbishments, POG and DoD safety studies, and significant finding investigations. • **Development Studies/Capability Improvements:** Conduct feasibility studies as required in conjunction with the DoD, execute design and development activities of a new electronic NG and GTS (including design, testing, and qualification) to meet a FPU in FY 2014.	**57,947**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Stockpile Systems		
FY 2014-FY 2017	• **Weapon Maintenance:** Achieve first production on electronic neutron generator qualified for both B61 and B83. Execute LLCEs with ELNG and redesigned GTS. • **Weapon Surveillance:** Continue annual activities as stated in FY 2013. Begin using the new B83 system tester at the Weapon Evaluation and Test Laboratory. • **Weapon Assessment and Support:** Continue annual activities as stated in FY 2013. • **Development Studies/Capability Improvements:** Conduct feasibility studies as required in conjunction with the DoD and begin development work to modernize the B83 JTA telemetry instrumentation.	**TBD**
W87 Stockpile Systems		
FY 2011	• **Weapon Maintenance**: Delivered all scheduled Limited Life Components (LLCs) which include Gas Transfer Systems (GTS), reservoirs, neutron generators (NGs), and alteration kits to the DoD and Pantex Plant to maintain the nuclear weapons stockpile. • **Weapon Surveillance**: Conducted surveillance programs using data collection from flight tests, laboratory tests, and component evaluations sufficient to assess stockpile reliability without nuclear testing. • **Weapon Assessment and Support:** Completed all Annual Assessment Reports and Laboratory Director Letters to the President. • **Development Studies/Capability Improvements:** Provided support to US Global Strike Command for studies related to storage of conventional munitions and nuclear weapons.	**67,830**
FY 2012	• **Weapon Maintenance:** Produce Limited Life Components/perform Limited Life Component Exchanges on Gas Transfer Systems and Neutron Generators as required; execute repair, maintenance, and replacement of aging weapon components. • **Weapon Surveillance:** Conduct surveillance activities to provide the National Laboratory Directors with robust state-of-health nuclear weapon data necessary to complete Weapon Reliability and Annual Assessment Reports, to include: disassembly and inspection, system-level laboratory and joint flight testing, component and material evaluations, platform compatibility and testing activities, production of weapon components expended during surveillance testing, and completion of material consolidation work at Y-12 to enable joint flight testing beyond Fiscal Year 2012. • **Weapon Assessment and Support:** Conduct weapon assessment activities necessary to complete Weapon Reliability and Annual Assessment Reports, to include: laboratory/site testing and analysis, trainer refurbishments, Project Officer Group and Department of Defense safety studies, and significant finding investigations. • **Development Studies/Capability Improvement**s: Conduct feasibility studies as required in conjunction with the Department of Defense; execute design and testing replacement activities for the NG.	**83,943**
FY 2013	• **Weapon Maintenance:** Perform neutron generator and gas transfer system limited life component exchanges; execute repair, maintenance, and replacement of aging weapon components to include but limited to the procurement of new Gas Transfer System reservoir forgings and valve replacements; and production of	**85,689**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Stockpile Systems		
	replacement Neutron Generators. • **Weapon Surveillance:** Conduct surveillance activities to provide the National Laboratory Directors with robust state-of-health nuclear weapon data necessary to complete Weapon Reliability and Annual Assessment Reports, to include: disassembly and inspection, system-level laboratory and joint flight testing, component and material evaluations, platform compatibility and testing activities, and production of weapon components expended during surveillance testing. • **Weapon Assessment and Support:** Conduct weapon assessment activities necessary to complete Weapon Reliability and Annual Assessment Reports, to include: laboratory/site testing and analysis, trainer refurbishments, Project Officer Group and Department of Defense safety studies, significant finding investigations. • **Development Studies/Capability Improvement**s: Conduct feasibility studies as required in conjunction with the DoD and redesign Joint Test Assembly cables to enable joint flight testing beyond Fiscal Year 2014.	
FY 2014-FY 2017	• **Weapon Maintenance:** Perform neutron generator limited life component exchanges in Fiscal Years 2014 thru 2015 and perform gas transfer system limited life component exchanges; execute repair, maintenance, and replacement of aging weapon components to include but not limited to the procurement of new Gas Transfer System reservoir forgings and valve replacements; and production of replacement Neutron Generators in Fiscal Years 2014 thru 2015. • **Weapon Surveillance:** Conduct surveillance activities in Fiscal Years 2014 thru 2015 and 100% of surveillance activities in Fiscal Years 2016 thru 2017 to provide the National Laboratory Directors with robust state-of-health nuclear weapon data necessary to complete Weapon Reliability and Annual Assessment Reports, to include: disassembly and inspection, system-level laboratory and joint flight testing, component and material evaluations, platform compatibility and testing activities, and production of weapon components expended during surveillance testing. • **Weapon Assessment and Support:** Conduct weapon assessment activities in Fiscal Years 2014 thru 2015 and 100% of weapon assessment activities necessary to complete Weapon Reliability and Annual Assessment Reports, to include: laboratory/site testing and analysis, trainer refurbishments, Project Officer Group and Department of Defense safety studies, and significant finding investigations. • **Development Studies/Capability Improvement**s: Conduct feasibility studies as required in conjunction with the Department of Defense; and execute design and testing activities for the new Gas Transfer System.	**TBD**
W88 Stockpile Systems		
FY 2011		**58,625**
FY 2012		**75,728**
FY 2013		**123,217**
FY 2014-FY 2017		**TBD**
W88 Stockpile Sustainment		
FY 2011	• **Weapon Maintenance:** Delivered all scheduled Limited Life Components (LLCs) which include Gas Transfer Systems (GTS), reservoirs, neutron generators (NGs),	**47,825**

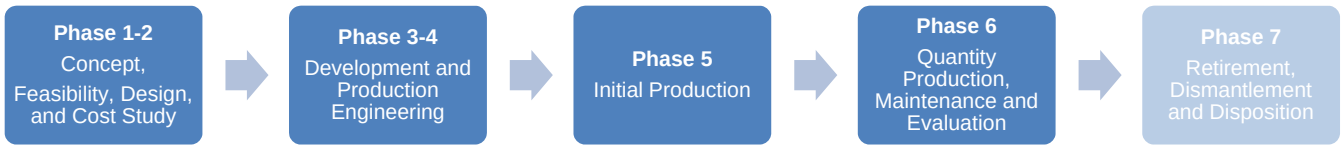
Fiscal Year	Activity	Funding (Dollars in Thousands)
Stockpile Systems		
	and alteration kits to the DoD and Pantex Plant to maintain the nuclear weapons stockpile. • **Weapon Surveillance:** Conducted surveillance programs using data collection from flight tests, laboratory tests, and component evaluations sufficient to assess stockpile reliability without nuclear testing. • **Weapon Assessment and Support:** Completed all Annual Assessment Reports and Laboratory Director Letters to the President. • **Development Studies/Capability Improvements:** Provided support to US Global Strike Command for studies related to storage of conventional munitions and nuclear weapons.	
FY 2012	• **Weapon Maintenance:** Produce limited life components on Gas Transfer Systems as required; execute repair, maintenance, and replacement of aging weapon components. • **Weapon Surveillance:** Conduct surveillance activities to provide the National Laboratory Directors with state-of-health nuclear weapon data necessary to complete Weapon Reliability and Annual Assessment Reports (AAR), these activities 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:** Conduct weapon assessment activities necessary to complete Weapon Reliability and Annual Assessment Reports (AAR), to include: laboratory/site testing and analysis, trainer refurbishments, Project Officers Group (POG) and DoN safety studies, and significant finding investigations (SFI). • **Development Studies/Capability Improvements:** Conduct feasibility studies in conjunction with the DoD, provide laboratory and management expertise to the POG and DoD Safety Studies.	**37,728**
FY 2013	• **Weapon Maintenance:** Execute repair, maintenance, and replacement of aging weapon components. • **Weapon Surveillance:** Conduct surveillance activities to provide the National Laboratory Directors with state-of-health nuclear weapon data necessary to complete Weapon Reliability and Annual Assessment Reports (AAR), these activities include: D&I, system-level laboratory and joint flight testing, CME, and platform compatibility and testing activities. • **Weapon Assessment and Support:** Conduct weapon assessment activities necessary to complete Weapon Reliability and AAR, to include: laboratory/site testing and analysis, trainer refurbishments, POG and DoN safety studies, and SFIs. • **Development Studies/Capability Improvements:** Conduct feasibility studies in conjunction with the DoD, provide laboratory and management expertise to the POG and DoD Safety Studies.	**63,555**
FY 2014-FY 2017	• **Weapon Maintenance:** Continue annual activities as stated in FY 2013. • **Weapon Surveillance:** Continue annual activities as stated in FY 2013. • **Weapon Assessment and Support:** Continue annual activities as stated in FY 2013. • **Development Studies/Capability Improvements:** Continue annual activities as stated in FY 2013.	**TBD**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Stockpile Systems		
W88 Alt 370		
FY 2011	• NNSA's initiated W88 Arming, Fuzing, and Firing (AF&F) Assembly ALT 370 Project Team to integrate the Nuclear Security Enterprise's actions supporting the study of an AF&F assembly that would be adaptable to both Air Force and Navy Ballistic Missile systems.	**10,800**
FY 2012	• Continue W88 ALT 370 AF&F development efforts (including consideration of commonality with the W78, W87, and collaboration with the United Kingdom (UK)), and complete design and pre-production efforts. Also, accomplish planning and development of limited life components.	**38,000**
FY2013	• Continue W88 ALT 370 AF&F development efforts (including consideration of commonality with the W78, W87, and collaboration with the United Kingdom (UK)), and complete design and pre-production efforts. Also, accomplish planning and development of limited life components.	**59,662**
FY 2014-FY 2017	• Continue annual activities as stated in FY 2013	**TBD**

Weapons Dismantlement and Disposition
Overview

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 dismantlement, 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; declassification and sanitization of component parts; and supporting the Tri-laboratory office efforts on dismantlement activities. WDD relies on several, enabling programs to complete its mission, such as Stockpile Services Production Support for shipping, receiving, and equipment maintenance, Readiness in Technical Base and Facilities (RTBF) for infrastructure sustainment and containers, and the Office of Secure Transportation Assets for movement of weapons and weapons components.

Sequence



Benefits

- Eliminates retired weapons and weapons components thereby reducing the security and maintenance burden of legacy warheads.

Funding and Activity Schedule

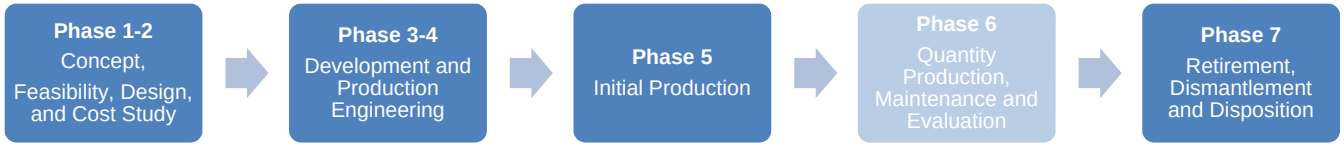
Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Exceeded scheduled Canned Subassembly dismantlement quantities at Y-12. • Completed 120% of the scheduled weapons dismantlement quantities at Pantex. • Completed gas sampling and inverted radiography testing in preparation of CSA dismantlement operations at Y-12. • Participated in the US/UK dismantlement verification exercise negotiation and planning process (EIVR-58). • Facilitated the storage of dismantled high explosive components from retired systems for future non-proliferation testing opportunities.	**57,968**
FY 2012	• Deliver on NNSA's commitment to complete the dismantlement of all warheads retired as of FY 2009 by FY 2022. • Pantex and Y-12 continue to maintain through-put via efficiencies and the flexibility to use multi-shift operations when possible. • The production sites continue scheduled dismantlement operations of some of the more challenging stockpile systems which may result in a decreased number of dismantlements but a consistent level of effort due to the difficulty factor associated with the scheduled systems. • Pantex will complete B53 CSA extractions and initiate increased throughput of B83 dismantlement operations. • Y-12 will nearly complete concurrent B53 canned subassembly dismantlements and ramp up to full scale B83 canned subassembly dismantlement activities. • Investments in the W71 process and tooling will continue to ensure dismantlements prior to occupation of the Uranium Processing Facility at Y-12. • Pantex will continue an accelerated dismantlement plan for the W76-0 to meet Navy	**56,591**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	requested stockpile reductions.	
FY 2013	• Deliver on NNSA's commitment to complete the dismantlement of all warheads retired as of FY 2009 by FY 2022. • Pantex and Y-12 will continue to maintain through-put via efficiencies and the flexibility to use multi-shift operations when possible. • Y-12 will complete B53 dismantlements and continue with remaining retired CSAs. • Installation of W71 process equipment will ensure the dismantlement of W71 CSAs in accordance with directives. • Pantex will continue an accelerated dismantlement plan for the W76-0 to meet Navy requested stockpile reductions.	**51,265**
FY 2014-FY 2017	• Continue annual activities as stated in FY 2013.	**TBD**

Stockpile Services
Overview

Stockpile Services provides the foundation for all DSW operations that are not uniquely required by an individual weapon system. Stockpile Services supports all weapon systems and is the foundation and sustainment for all DSW operations to include: Production Support and R&D Support essential for plant and laboratory critical skills, material, limited life components (LLCs), limited life component exchanges (LLCEs), quality controls, and surveillance and evaluation activities for the nuclear stockpile; R&D Certification and Safety efforts enabling essential technology maturation activities across multiple weapon systems; Management, Technology, and Production, providing quality engineering and plant management, technology, maintenance and/or replacement of weapons related equipment, and production services; and Plutonium Sustainment, enabling activities to achieve and maintain a cost-effective plutonium capability.

Sequence



Benefits

- Provides the base development, production and logistics capability needed to integrate weapon deliveries on schedule to the DoD for all enduring systems, LEPs, and WDD.

Other Information

In accordance with the 2010 Nuclear Posture Review Report, Stockpile Services directly supports "Strengthening the science, technology, and engineering (ST&E) base needed for conducting weapon system LEP, […] certifying weapons without nuclear testing, and providing annual stockpile assessments through weapons surveillance." Stockpile Services contributes to critical elements of DSW and the Stockpile Stewardship Program through providing the foundation for multi-tail number weapon system support. As an example, Stockpile Services contributes directly to multiple 2011 NNSA Strategic Plan goals including a NNSA Key Administrator goal to "Manage the nuclear weapons stockpile and advance naval nuclear propulsion." Stockpile Services supports the Surveillance Program since it contributes directly to one of the 2011 NNSA Strategic Plan goals that states "by 2014, complete the transformation of the weapons stockpile surveillance program to enable detection of initial design and production defects for life extended weapons, materials aging defects and predictive performance trends for the enduring stockpile."

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
Stockpile Services		
FY 2011		**947,420**
FY 2012		**851,882**
FY 2013		**902,669**
FY 2014-FY 2017		**TBD**
Production Support		
FY 2011	• Provided engineering and manufacturing operations for weapon operations (W76-1 LEP, dismantlement, and detonator cable assembly production) to meet directive schedules • Provided calibration, corrective maintenance, and preventative maintenance for production equipment • Procured special materials for weapon operations and manage material supply chain • Continued development of modern manufacturing floor process flow software at Pantex (Operations Systems Development and Integration, OSD&I) and Y-12 (MoMentum) and maintain existing systems • Maintained inspection equipment, procedures development, process control, and measurement standards to help ensure quality of weapon operation deliverables • Conducted requalification of products and testers for KCRIMs restart of operations. • Maintained equipment and processes for neutron generator production to meet directive schedules	**312,352**
FY 2012	• Provide engineering and manufacturing operations for weapon operations (W76-1 LEP, dismantlement, and detonator cable assembly production) to meet directive schedules • Provide calibration, corrective maintenance, and preventative maintenance for production equipment • Procure special materials for weapon operations and manage material supply chain • Maintain inspection equipment, procedures development, process control, and measurement standards to help ensure quality of weapon operation deliverables • Maintain equipment and processes for neutron generator production to meet directive schedules • Conduct requalification of products and testers for KCRIMs restart of operations	**327,349**
FY 2013	• Provide engineering and manufacturing operations for weapon operations (W76-1 LEP, dismantlement, and detonator cable assembly production) to meet directive schedules including revised W76-1 production rate • Provide calibration, corrective maintenance, and preventative maintenance for production equipment • Procure special materials for weapon operations and manage material supply chain • Continue development of modern manufacturing floor process flow software at Pantex (OSD&I) and Y-12 (MoMentum) and maintain existing systems • Maintain inspection equipment, procedures development, process control, and measurement standards to help ensure quality of weapon operation deliverables • Maintain equipment and processes for neutron generator production to meet revised schedules • Conduct requalification of products and testers for KCRIMs restart of operations	**365,405**
FY 2014-FY 2017	• Provide engineering and manufacturing operations for weapon operations (W76-1 LEP, B61- LEP, dismantlement, and detonator cable assembly production) to meet directive schedules including revised W76-1 production rate	**TBD**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Stockpile Services		
	• Provide calibration, corrective maintenance, and preventative maintenance for production equipment • Procure special materials for weapon operations and manage material supply chain • Complete shop floor modernization projects at Y-12 (MoMentum) and PX (OSD&I) (FY15) • Maintain electronic product flow systems • Maintain inspection equipment, procedures development, process control, and measurement standards to help ensure quality of weapon operation deliverables • Maintain equipment and processes for neutron generator production to meet revised schedules • Complete requalification of products and testers for KCRIMs restart of operations (FY 2016)	
Research and Development Support		
FY 2011	• Developed non-nuclear components for insertion into the B61 LEP for the AF&F. • Submitted refurbishment options discussions and tables for the FY 2011 Technical Basis for Stockpile Transformation Planning (TBSTP) Document.	**38,772**
FY 2012	• Support and conduct laboratory and flight tests. • Further develop and demonstrate Quantification of Margins and Uncertainties (QMU) and applying this methodology toward assessment, certification, and other program needs. • Provide scientific and technical support to the production agencies to help achieve weapon production directives. • R&D infrastructure support at the national laboratories.	**30,264**
FY 2013	• Support and conduct laboratory and flight tests. • Further develop and demonstrate Quantification of Margins and Uncertainties (QMU) and applying this methodology toward assessment, certification, and other program needs. • Provide scientific and technical support to the production agencies to help achieve weapon production directives. • R&D infrastructure support at the national laboratories.	**28,103**
FY 2014-FY 2017	• Continue annual activities as stated in FY 2013.	**TBD**
Research and Development Certification and Safety		
FY 2011	• Analyzed, evaluated, and closed certain high priority Significant Finding Investigations (SFIs) in accordance with the currently approved baseline closure plans. • Provided input to the FY 2011 Nuclear Safety Research and Development (NSR&D) Working Group (WG) Annual Report and conducted FY 2011 NSR&D activities in accordance with the FY 2011 NSR&D WG Annual Report.	**194,851**
FY 2012	• Annually assess the safety, security, and reliability 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 • Analyze, evaluate, and close certain high priority Significant Finding Investigations (SFIs) in accordance with the currently approved baseline closure plans. • Continue to develop and mature surety technologies for future insertion opportunities. • Design and develop certain Limited Life Components, such as: neutron generators,	**165,569**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Stockpile Services		
	GTSs, energetics, and other replacement components in accordance with the schedule as shown in the Component Maturation Framework (CMF) chart. • Continue to develop and mature initiation system technologies for future insertion into the stockpile. • Identify other components, as summarized in the Component Maturation Framework (CMF), which need to be developed and matured for future insertion opportunities to support a continuing improvement to the stockpile. • 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 to support development of certain Neutron Generators (electronic and small generator types) and Gas Transfer Systems. • Continue to develop digital and analog arming and firing subsystems; hardware qualification; system certification and required computer modeling and simulation activities. • Continue analysis of stockpile primary, secondary, chemistry, and materials systems analysis and; annual assessments related to activities for the enduring stockpile. Continue support for subcritical and other experiments at Nevada National Security Site to execute the Gemini Series. • Continue to implement Independent Nuclear Weapon Assessment Teams, within the National Laboratories to assess the state of health and performance of the weapon systems.	
FY 2013	• Annually assess the safety, security, and reliability 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 • Analyze, evaluate, and close certain high priority Significant Finding Investigations (SFIs) in accordance with the currently approved baseline closure plans • Continue to develop and mature surety technologies for future insertion opportunities • Design and develop certain Limited Life Components, such as: neutron generators, GTSs, energetics, and other replacement components in accordance with the schedule as shown in the Component Maturation Framework (CMF) chart. • Continue to develop and mature initiation system technologies for future insertion into the stockpile • Identify other components, as summarized in the Component Maturation Framework (CMF) chart, which need to be developed and matured for future insertion opportunities to support a continuing improvement to the stockpile • 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 to support development of certain Neutron Generators (electronic and small generator types) and Gas Transfer Systems. • Continue to develop digital and analog arming and firing subsystems; hardware qualification; system certification and required computer modeling and simulation activities. • Continue analysis of stockpile primary, secondary, chemistry, and materials systems analysis and annual assessments related to activities for the enduring stockpile. Continue support for subcritical and other experiments at Nevada National Security	**191,632**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Stockpile Services		
	Site. • Continue to implement Independent Nuclear Weapon Assessment Teams, within the National Laboratories to assess the state of health and performance of the weapon system.	
FY 2014-FY 2017	• Continue annual activities as stated in FY 2013.	**TBD**
Management, Technology, and Production		
FY 2011	• Provided increased capabilities in surveillance, including increased core capabilities for laboratory and flight testing, analysis, data delivery and information data sharing. • Submitted Weapons Reliability Report to DoD (November and May) • Maintained enterprise-wide, integrated Product Realization Integrated Digital Enterprise (PRIDE) information systems for design, engineering, manufacturing and quality control releases. • Deployed applications (PRIDE) for the NNSA Enterprise Secure Network as the common backbone for the Enterprise to exchange classified data, documents, drawings, and three-dimensional models (to maintain compatibility with existing weapons information systems and master nuclear schedules).	**211,454**
FY 2012	• Provide capabilities in surveillance, including core capabilities for laboratory and flight testing, analysis, data delivery and information data sharing. • Improve safety and use control technologies. • Maintain enterprise-wide, integrated product-realization information systems for design, engineering, manufacturing and quality control releases. • Sustain military liaison activities associated with multiple weapon system responses. • Maintain the transformation and transition of DSW's requirements and integration system to provide sustained management and operations. • Deploy applications for the NNSA Enterprise Secure Network as the common backbone for the Enterprise to exchange classified data, documents, drawings, and three-dimensional models (to maintain compatibility with existing weapons information systems and master nuclear schedules. • Execute feasibility studies in conjunction with the DoD (e.g., long-range standoff analysis of alternatives.)	**188,700**
FY 2013	• Execute surveillance activities in accordance with FY 2013 Program Control Documents, and FY 2013 Integrated Weapon Evaluation Team Plans. • Study options to improve safety and use control technologies for the W78 Study and B61 LEP. • Manage applications required for realizing weapon products and ensures that correct, high-quality information is shared with those who require it at all locations in a secure and timely way (part Product Realization Integrated Digital Enterprise, PRIDE, program). • Respond to DoD Unsatisfactory Reports about issues with the stockpile and provide training. • Develop content to streamline business process and requirements development (part of Requirements Modernization and Integration). • Production and maintenance of test and handling gear, spare parts for DoD, containers, and weapon components. • Conduct program management and oversight of weapon sustainment activities.	**175,844**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Stockpile Services		
FY 2014-FY 2017	• Continue annual activities as stated in FY 2013.Maintain business process and requirements development process (part of Requirements Modernization Initiative).	**TBD**
Plutonium Sustainment		
FY 2011	• Completed the scheduled W88 pit production program. • Initiated harvesting of Pu-238 oxide from radioisotope thermoelectric generators (RTGs) (97 heat sources harvested) that will be used to meet future mission requirements. • Completed an updated design definition for the legacy pit type.	**189,991**
FY 2012	• Support manufacturing modernization to include equipment and Industrial Engineering improvements to the manufacturing process. • Maintain a base pit production capability. • Support pre-production activities of a planned Defense Programs Power Supply mission. • Produce a scaled-experiment device • Support a share of plutonium facilities at LANL for infrastructure investments to ensure long term viability of the plutonium infrastructure as a national asset.	**140,000**
FY 2013	• Sustain a minimal capability to build a limited number of non War Reserve (WR) pits. • Support pre-production activities of a planned Defense Programs Power Supply mission. Includes the reconstitution of the capability to manufacture power sources and recovery of critical feed material. • Support a share of plutonium facilities at LANL for infrastructure investments to ensure long term viability of the plutonium infrastructure as a national asset. • Continue the development of manufacturing processes associated with pit types other than the W88.	**141,685**
FY 2014-FY 2017	• Pit manufacturing capability shutdown and maintained in a “warm” standby with no WR pit or developmental pits produced; continue the development of manufacturing processes associated with pit types other than the W88 on limited scale. • Complete Defense Programs Power Supply reconstitution mission • Support a share of plutonium facilities at LANL for infrastructure investments to ensure long term viability of the plutonium infrastructure as a national asset.	**TBD**

Capital Operating Expenses and Construction Summary
Capital Operating Expenses[a]

(dollars in thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Capital Operating Expenses			
General Plant Projects	3,609	3,688	3,769
Capital Equipment	75,837	77,505	79,210
Total, Capital Operating Expenses	**79,446**	**81,193**	**82,979**

Outyear Capital Operating Expenses

(dollars in thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request
Capital Operating Expenses				
General Plant Projects	3,852	3,937	4,024	4,113
Capital Equipment	80,953	82,734	84,554	86,414
Total, Capital Operating Expenses	**84,805**	**86,671**	**88,578**	**90,527**

[a] Funds are appropriated for Operations and Maintenance, which includes operating expenses, capital equipment and general plant projects. The program no longer budgets separately for capital equipment and general plant projects. Funding shown reflects estimates based on actual FY 2011 obligations.

Major Items of Equipment (MIE)

(dollars in thousands)

	Type	Total	Prior-Year Appro-priations	FY 2011 Current	FY 2012 Enacted	FY 2013 Request	Unappro-priated Balance	Completion Date
SNM Vehicle, Y-12 National Security Complex	TPC	6,648	1,800	2,400	340	580		FY 2014
	TEC	6,176						
	OPC	472						
6 New Ovens #1, Y-12 National Security Complex	TPC	8,310	5,302	-680	1,625	0		FY 2012
	TEC	6,247						
	OPC	2,063						
6 New Ovens #2, Y-12 National Security Complex	TPC	8,656	5,147	-300	1,148	598		FY 2013
	TEC	6,593						
	OPC	2,063						
QE Environmental Chamber, Y-12 National Security Complex	TPC	2,883	2,384	-470	-13	0		FY 2011
	TEC	1,901						
	OPC	982						
LTTD Oven, Y-12 National Security Complex	TPC	2,983	813	970	280	0		FY 2012
	TEC	2,063						
	OPC	920						
Additional Capacity Lathe, Y-12 National Security Complex	TPC	4,700	2,200	2,000	0	0		FY 2012
	TEC	4,200						
	OPC	500						
Power Supply Assembly Area, LANL	TPC	19,646	0	5,352	9,487	2,767		FY 2013
	TEC	17,606						
	OPC	2,040						
Total, Major Items of Equipment				**9,272**	**12,867**	**3,945**		

Science Campaign
Funding Profile by Subprogram and Activity

	(Dollars in Thousands)		
	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Total, Science Campaign	**366,167**	**332,958**	**350,104**

Out-Year Funding Profile by Subprogram and Activity

The outyear numbers for Weapons Activities do not reflect programmatic requirements. Rather, they are an extrapolation of the FY 2013 request based on rates of inflation in the Budget Control Act of 2011. The Administration will develop outyear funding levels based on actual programmatic requirements at a later date.

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
Consolidated Appropriations Act, 2012 (P.L. 112-74)
National Defense Authorization Act for FY 2012 (P.L. 112-81)

Overview

As the nuclear stockpile ages beyond its original design lifetime, it is imperative that models of weapons performance have intrinsic capability to ensure weapons continue to meet military specifications. Models of performance, benchmarked using underground test data, need to be replaced with physics models which are validated with modern experimental data. These models will enable understanding of aging; advance the physical understanding of surety mechanisms and their impact on assessment and certification; assess the impact of varying material manufacturing techniques and processes; and provide tools to help anticipate and avoid technological surprise.

The Science Campaign supports the following products: (1) annual stockpile assessments; (2) certification statements for Life Extension Programs (LEPs) and weapon modifications; (3) prompt resolution of stockpile issues (e.g., Significant Findings Investigations, including aging issues); (4) certification of warhead replacement components; (5) the development of improved predictive capability in conjunction with the Advanced Simulation and Computing (ASC) Campaign; and (6) maintenance of readiness capabilities through experiments and assessments. The Science Campaign supports many of these activities as well as leveraging the investments made in ASC and the Inertial Confinement Fusion Ignition and High Yield (ICF) Campaigns.

The Science Campaign aims to understand through experimentation the complexities associated with the extreme temperature, stress, strain, and strain rates experienced during a nuclear explosion. One grand challenge involved is to improve physics models for primary fission "boost." Through the National Boost Initiative (NBI), the Science Campaign is increasing its efforts to understand this phenomenon, from the initial conditions required for boost to its subsequent dynamics.

The experimental programs at the nuclear weapons laboratories and sites are designed to improve our understanding of the physics associated with nuclear weapon safety, security, and effectiveness through acquiring, analyzing and incorporating experimental data into physics-based computer models. Through highly integrated multi-year and multi-decade efforts, those computer models are ultimately matured as predictive capability for weapon performance. The Science Campaign either manages or significantly contributes to these efforts which are the cornerstone of modern stockpile stewardship.

Each subprogram of the Science Campaign also contributes to development and academic training of the future potential workforce at the national laboratories through the Stewardship Science Academic Alliances (SSAA) administered by the Office of Stockpile Stewardship. The core areas supported by SSAA include: materials under dynamic conditions and in extreme environments; hydrodynamics; low-energy nuclear science; radiochemistry; and high energy density science.

Program Accomplishments and Milestones

In FY 2011, three accomplishments stand out:
1) resumption of plutonium experiments at our Joint

Actinide Shock Physics Experimental Research (JASPER) facility and Z facility; 2) progress on sub-critical experiments at Nevada National Security Site (NNSS); and 3) the first series of stockpile stewardship experiments on the National Ignition Facility (NIF). The measurements made in these experiments and for other experiments conducted within the Science Campaign provide the physics-based understanding that underpins our accurate, highly-integrated computer models of weapons performance.

Explanation of Changes

The increase in Advanced Certification will support executing one hydrodynamic experiment per year essential for surety technology advances from the current rate of one per 18 months. The increase in Primary Assessment Technologies will fund development of expanded science capabilities needed for national security assessments motivated by intelligence community requirements for foreign nuclear weapon assessments. The increase in Advanced Radiography will fund analysis and development of future experimental platforms, diagnostics and detectors in support of dynamic material experiments including plutonium experiments.

Program Planning and Management

The Science Campaign validates its work and funding priorities, which facilitates clear alignment with NNSA and DOE strategic objectives by engaging in semi-annual reviews as well as regular external reviews of its work across the Future-Years Nuclear Security Program (FYNSP). The Science Campaign's process for allocating resources works to achieve its goal of funding the highest priority work and addressing near-term and out-year challenges for the Stockpile Stewardship Program (SSP). The Science Campaign continues to apply program management principles and controls throughout its portfolio to ensure the most effective and efficient use of resources. For example, the program focuses its efforts on level 1 and level 2 milestones that support strategic objectives outlined in biennially updated Primary and Secondary Assessment plans.

Strategic Management

The Science Campaign uses forward-looking efforts with specific objectives that are planned and executed by integrated teams from the weapons laboratories and sites: Los Alamos National Laboratory (LANL), Lawrence Livermore National Laboratory (LLNL), Sandia National Laboratories (SNL), and the NNSS. Their efforts are managed through milestones and negotiated performance measures, including some that are the responsibilities of multiple sites.

Milestones and long-term objectives are planned to coincide with strategic Directed Stockpile Work (DSW) decisions and the decisions of other aspects of stockpile stewardship through an evolving 20-year integrated roadmap called the Predictive Capability Framework (PCF). The PCF is an overarching management construct used to guide the science, technology and engineering activities for near term deliverables and long term capability needs. Other documents such as the sub-program plans and the Stockpile Stewardship and Management Plan contain the details used for Science Campaigns strategic management.

Major Outyear Priorities and Assumptions

The outyear numbers for Weapons Activities do not reflect programmatic requirements. Rather, they are an extrapolation of the FY 2013 request based on rates of inflation in the Budget Control Act of 2011. The Administration will develop outyear funding levels based on actual programmatic requirements at a later date. Major Outyear Priorities and Assumptions will be delineated in that update.

Program Goals and Funding

The outyear numbers for Weapons Activities do not reflect programmatic requirements. Rather, they are an extrapolation of the FY 2013 request based on rates of inflation in the Budget Control Act of 2011. The Administration will develop outyear funding levels based on actual programmatic requirements at a later date. Program Goals and Funding will be delineated in that update.

Explanation of Funding and/or Program Changes

	(Dollars in Thousands)		
	FY 2012 Enacted	FY 2013 Request	FY 2013 vs. FY 2012
Science Campaign			
Advanced Certification	**39,820**	**44,104**	**+4,284**
Advanced Certification will return to executing one hydrodynamic experiment per year essential for surety technology advances from the current rate of one per 18 months			
Primary Assessment Technologies	**85,787**	**94,000**	**+8,213**
The increase will fund development of expanded predictive science capabilities needed for national security assessments motivated by intelligence community requirements for foreign nuclear weapon assessments.			
Dynamic Materials Properties	**96,681**	**97,000**	**+319**
This slight increase will help maintain approximately the same level of support for these essential components of the stockpile stewardship program.			
Advanced Radiography	**25,926**	**30,000**	**+4,074**
The increase will fund analysis and development of future experimental platforms, diagnostics and detectors in support of dynamic material experiments including plutonium experiments.			
Secondary Assessment Technologies	**84,744**	**85,000**	**+256**
This slight increase is necessary to maintain the critical scientific capabilities needed to meet stockpile stewardship objectives.			
Total Funding Change, Science Campaign	**332,958**	**350,104**	**+17,146**

Advanced Certification
Overview

Advanced Certification is focused on the integral task of 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 substantial 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 improve the weapons certification process, refine computational tools and methods, advance the physical understanding of surety mechanisms, understand failure modes, assess new manufacturing processes, and anticipate technological surprise. Additional detail will be found in Chapter 3 of the FY 2013 *Stockpile Stewardship and Management Plan*, under the section entitled, "Predictive Science and – Assessment and Certification," with the subheading, "Integration of Predictive Capabilities for Design, Qualification, Assessment and Certification."

Sequence

Benefits

Integrates certain scientific and technological advances from the stockpile stewardship programs, and develops data from crosscutting studies and integrated experiments (including hydrodynamic and subcritical experiments) in order to: (1) improve the weapons certification process; (2) refine computational tools and methods; (3) promote the advancement of the physical understanding of surety mechanisms; (4) ensure further exploration of failure modes; (5) conduct manufacturing process assessments; and (6) anticipate technological surprise. Advanced Certification provides efforts critical in supporting the understanding of failure modes, including stockpile and non-stockpile designs, and in utilizing these major stockpile stewardship experimental capabilities to examine options for modernized surety.

Funding and Activity Schedule

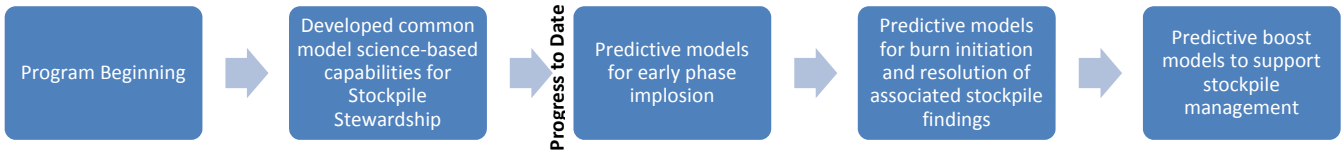
Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Developed and proposed recommendations for improvements to the Annual Assessment Reports including the introduction of new quantification of margins and uncertainty (QMU) metrics for the assessment and reporting of the performance, reliability, and safety of LANL systems. • Completed a JASON study of the hydrodynamic and nuclear experiments program developed for improving predictive capability of performance calculations for nuclear weapon primaries. • Developed improved baselines for three systems to be studied in the scaling and surrogacy effort. • Designed and produced specialized tooling for scaled experiments. • Applied the 'nearness' method and image metrics developed in FY 2010 to historic A/B pairs of different plutonium properties experiments. • Continued to develop quantitative metrics for both primary and secondary designs to scientifically establish the applicability of past underground test and above ground experiments to the certification of future warhead options.	**76,220**

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• Complete models and experiments designed to address failure modes, as well as develop rigorous, peer-reviewed linkage of requirements to the associated certification needs for the weapons lifecycle under relevant conditions. • Use the Dual Axis Radiographic Hydrodynamic Testing (DARHT) facility for hydrodynamic experiments to: examine options for modernized surety; execute a strong program for understanding scaling and surrogacy; deliver on elements of the National Boost Initiative related to certification; and to understand the effect of manufacturing and process variables on certification. • Analyze failure modes and margin-to-failure ratios, including stockpile and non-stockpile designs. This effort also supports broader national security efforts and involves close coordination with other government agencies in national security. • Support subcritical experiments required for improving predictive capability of performance calculations for nuclear weapon primaries.	**39,820**
FY 2013	• Execute sub-critical experiments related to boost initial conditions, a near-term deliverable in the PCF. • Execute one hydro shot at DARHT to support understanding issues affecting certification. • Support future LEPs and SFIs by integration of relevant subprogram activities including manufacturing and processing.	**44,104**
FY 2014-FY 2017	• Experimentally explore a specific surety mechanism. • Use surrogate experiments to examine and extend concept of “nearness.” • Demonstrate the practical and accurate 3D uncertainty quantification for surety. • Develop understanding of and path forward to product-based certification in support of more rapid, efficient, and robust LEP, SFI closure, and annual assessment activities. • Support, in collaboration with other sub-programs, work needed for the 2018 “Burn Boost” milestone.	**TBD**

Primary Assessment Technologies
Overview

Primary Assessment Technologies provides capabilities needed for strengthening assessment for stockpile primaries, for enabling a broad range of options for future Life Extension Programs (LEPs), and for underwriting improvements in weapons safety and security. A principal focus of Primary Assessment Technologies for the next five years is on developing predictive capabilities for modeling boost, a process key to proper functioning of the stockpile. These capabilities also provide the foundation for national security missions concerned with assessment of foreign or improvised weapons. Additional detail will be found in Chapter 3 of the FY 2013 *Stockpile Stewardship and Management Plan*, under the section entitled, "Predictive Science and – Assessment and Certification," with the subheading, "Nuclear Explosive Package Assessment."

Sequence



Benefits

Develops the tools, methods, and knowledge required to certify the nuclear safety and nuclear performance of stockpile primaries without nuclear testing. The primary assessment subprogram has the responsibility for coordinating the National Boost Initiative and development of the Primary Assessment Plan.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Obtained plutonium aging data to support the pit lifetime assessment update in the annual assessment. • Conducted boost physics experiments that validate and advance our ability to calculate stockpile performance. • Developed experimental techniques and methods for measuring materials properties at very high pressures at the Sandia Z machine. • Designed experiments and developed ultra-fast diagnostics for studying key primary phenomena at the National Ignition Facility. • Developed and evaluated the impact of improved HE models on primary performance in support of annual assessment and the 2012 PCF Milestone. • Completed report on feasibility of completely phasing out legacy Reaction History diagnostics with modern techniques.	**85,968**
FY 2012	• Evaluate aging effects on the predicted certifiable service lifetime of pits; conduct experiments to provide materials data and improved understanding of implosion hydrodynamics at laboratory firing sites and pRad at Los Alamos Neutron Science Center (LANSCE). • Develop diagnostics and experimental designs for primary physics experiments at the National Ignition Facility. • Commission advanced detectors for measuring properties of plutonium and uranium fission at LANSCE. • As part of the National Boost Initiative, complete a Predictive Capability Framework Milestone to improve assessments for the early phases of stockpile primary evolution. Capabilities developed as part of this effort will be used in annual assessment, future	**85,787**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	LEPs, and for resolution of Significant Finding Investigations.	
FY 2013	• Evaluate (bi-annual) aging effects on the predicted certifiable service lifetime of pits. • Conduct experiments to develop and validate science for specific future stockpile safety and security technologies. • Design and execute experiments at the NIF, SNL's Z machine, and the University of Rochester's Omega facility to obtain data and validate models for primary boosting. • Provide improved nuclear data for the historical radiochemical diagnostics used as a basis for annual assessment and for nuclear fission processes that govern energy generation and safety in weapons. • Provide high explosives models and experiments for detonators and main charges needed for future technologies and annual assessment. • Execute materials experiments to improve primary assessment. • Expand predictive capabilities to broaden the applicability of stockpile tools and to support assessments of foreign nuclear weapon activities.	**94,000**
FY 2014-FY 2017	• Develop predictive capabilities for calculating primary boosting and the influence of stockpile changes on the boosting process. • Provide physical data and updated models underpinning improved pit lifetime assessments. • Conduct experiments at the National Ignition Facility using igniting capsules to validate models for primary performance in weapons regimes. • Complete precision measurements of fission properties of plutonium to improve our understanding of weapon criticality. • Provide the science and assessment basis enabling use of stockpile technologies that improve weapon safety, security and reliability. • Develop diagnostics enabling improved experimental measurements of high explosives and implosion systems. • Provide an experimental platform to resolve specific Significant Finding Investigations.	**TBD**

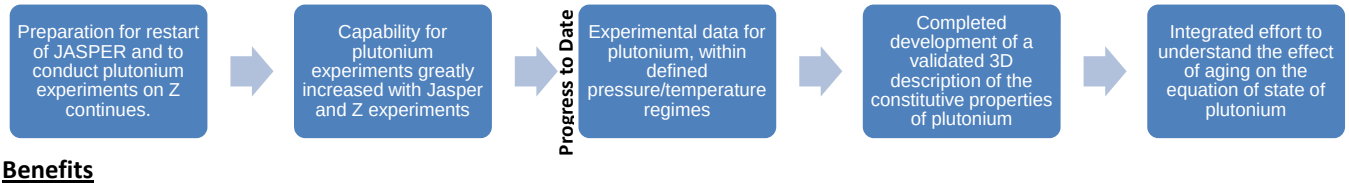
Dynamic Materials Properties
Overview

Dynamic Materials Properties develops the fundamental knowledge and physics-based models that describe and predict the behaviors of weapon materials in environments of extreme conditions of temperature, stress, strain, and strain rates. The materials of interest include high explosives, plutonium, uranium, and other non-radioactive materials used in nuclear weapons primaries and related components. Materials science data are used to develop experimentally-validated models that incorporate relevant physics into the materials behavior and response under these conditions. Surrogate materials are also used to aid understanding and develop data without the use of Special Nuclear Materials. New experimental capabilities are developed as required to provide the needed data and to support its interpretation. This subprogram is closely coordinated with the Primary Assessment Technologies, Secondary Assessment Technologies, and Advanced Certification subprograms, and with the ASC, ICF, and Engineering Campaigns, and the DSW Program, as well as with the U.S. Department of Defense (DoD)-DOE Joint Munitions Program.

Required experiments are conducted at laboratory facilities, including the several Inertial Confinement Fusion facilities, the Z-machine, the advanced photon source (APS), Los Alamos Neutron Science Center (LANSCE), JASPER and other gas and powder gun facilities. We will continue research essential to moving from conventional to insensitive high explosives. Key materials data on polymers, foams and other materials will also continue to be generated, analyzed and incorporated into models. Additional detail will be found in Chapter 3 of the FY 2013 *Stockpile Stewardship and Management Plan*, under the section entitled, "Predictive Science and – Assessment and Certification," with the subheading, "Nuclear Explosive Package Assessment."

Since the "Dynamic Materials Properties" campaign was folded into Dynamic Materials Properties in 2008, DMP is the substantial funding source for subcritical and other plutonium experiments. Efforts in FY 2013 will be devoted principally to the completion of the Pollux subcritical experiment, operation of the JASPER gas gun, development of capabilities for Phoenix experiments at U1a, and development of the Large Bore Powder Gun.

Sequence



Benefits

Generates fundamental materials data and provides the validation data for physics-based models that describe and predict the behaviors of weapon materials in extreme conditions of temperature, stress, strain, and strain rates. This subprogram also includes part of the scope of work associated with sub-critical experiments at the Nevada National Security Site (NNSS).

Funding and Activity Schedule

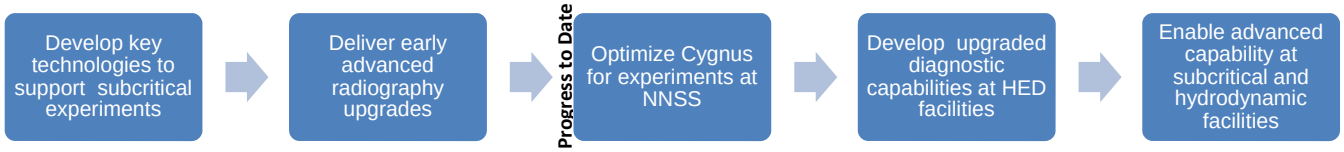
Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Completed JASPER Return To Operations. • Completed the execution of the Barolo/Bacchus series • Executed the first phase (first year) of improvements to the Cygnus radiographic facility. • Developed the advanced optical cavity technique - the most significant improvement in hydrodynamic diagnostics in over 25 years. • Conducted experiments and modeling supporting a new path forward for possible re-use of pits using IHE. • Conducted measurements on properties of plutonium, uranium, and other materials	**98,144**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	on the Z machine and NIF. • Conducted a broad suite of small-scale measurements on microstructure and performance of plutonium, uranium, other metals, polymers, and ceramics required for improved understanding of weapon performance and certification.	
FY 2012	• Develop the aging and process-aware plutonium multi-phase Equations of State (EOS) and other properties, especially high-priority data identified as required for the FY 2015 Initial Conditions milestone associated with National Boost Initiative. • Acquire data to understand the role of plutonium and surrogate materials in fundamental physics mechanisms. • Acquire other materials data at LANSCE, Z, and other laboratory facilities. • Conduct experiments on JASPER and other gas and powder gun facilities under pressures and temperatures and with different loading characteristics to provide information important to the improvement of equation-of-state models. • Provide the analysis to inform decisions on investment for future experiments (from small-scale to integral) and related activities for the Predictive Capability Framework. • Conduct key, peer-reviewed integral experiments to inform our understanding of the initial conditions established in a primary, with a focus on the dynamic response of plutonium.	**96,681**
FY 2013	• Provide damage data for plutonium spall and inclusions. • Update plutonium strength models using high strain rate and quasi-static data. • Assessment of phase specific spall using the 40-mm gun at TA-55. • Deliver data on next generation thermal-mechanical and failure models.	**97,000**
FY 2014-FY 2017	• Continue to develop the aging and process-aware plutonium multi-phase EOS and other properties, especially high-priority data identified as required for the FY 2015 Initial Conditions milestone associated with National Boost Initiative. • Continue to acquire other materials data (as detailed in the classified Primary and Secondary Assessment Plans) at LANSCE, Z and other laboratory facilities. • Continue to provide the analysis to inform decisions on investment for future experiments (from small-scale to integral) and related activities for the Predictive Capability Framework. • Continue work on the Large Bore Powder Gun development and installation at NNSS (U1a).	**TBD**

Advanced Radiography
Overview

Advanced Radiography develops the sources, targets, and detectors used to diagnose hydrodynamic experiments, and advanced platforms for dynamic material properties experiments, including those that study plutonium properties. These "transformational technologies" advance and improve the quality of scientific results at facilities such as Dual Axis Radiographic Hydrodynamic Testing (DARHT), Site 300, Z, NNSS (U1a), and pRad at LANSCE. The main focus for the out-years is the development of radiographic requirements and advanced analysis of radiographic information in response to the scientific needs for the future hydrodynamic program. Additional detail will be found in Chapter 3 of the FY 2013 *Stockpile Stewardship and Management Plan*, under the section entitled, "Predictive Science and – Assessment and Certification," with the subheading, "Nuclear Explosive Package Assessment."

Sequence



Benefits

Advanced Radiography develops tools and diagnostics in support of the other science campaigns. This includes advanced technologies for static and dynamic imaging of imploding mock primaries to experimentally validate computer simulations of the implosion process and associated physical phenomena. This subprogram also develops driver technologies to meet the radiographic requirements and dynamic material property requirements defined in the Primary and Secondary Assessment Plans and the Hydrotest Plan.

Funding and Activity Schedule

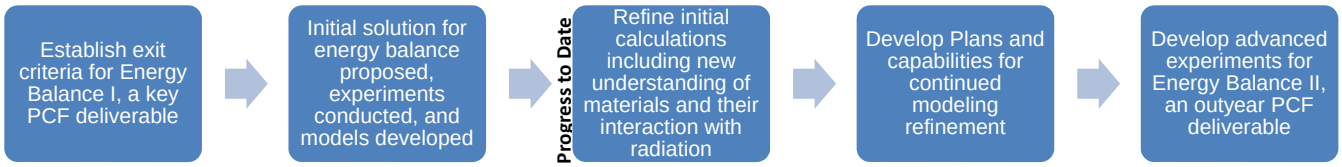
Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Supported DARHT, Site 300, and U1a for several experimental activities including those obtaining fundamental plutonium data. • Supported subcritical experiments and radiographic source optimization for future experiments at NNSS (U1a). • Developed advanced cameras for DARHT and scintillators to optimize the spectral response in line with the future needs for our Atomic Weapons Establishment (AWE) collaborations. • Developed an advanced platform for high precision materials experiments.	**23,593**
FY 2012	• Continue development of pulsed diode radiographic sources. • Deliver development strategy for next-generation cameras and detectors. • Refurbish DARHT Axis I camera and complete installation of 5th camera in DARHT Axis II camera array. • Field the high frame rate continuous imager at DARHT for multi-pulse radiographic studies. • Refine requirements for advanced radiographic technologies for hydrodynamic and dynamic plutonium experiments.	**25,926**
FY 2013	• Continue development of next-generation cameras and detectors. • Support development of advanced diagnostic and radiographic technologies as required for hydrodynamic and dynamic plutonium experiments. • Continue system improvements to the Z machine to enable a broader range of dynamic materials properties experiments.	**30,000**

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2014-FY 2017	• Continue development and implementation of advanced diagnostic and radiographic technologies in support of modernized surety, understanding scaling and surrogacy, and supporting the National Boost Initiative. • Continue to support subcritical experiments required for improving predictive capability of performance calculations for nuclear weapon primaries.	**TBD**

Secondary Assessment Technologies
Overview

Secondary Assessment Technologies (SAT) develops and provides the capability needed to strengthen evaluation and assessment of stockpile secondaries. It supports the capability to evaluate reliability and performance of potential future and/or modified configurations that may enter the stockpile without nuclear testing, thus supporting a broad range of options for future LEPs. Secondary performance for both stockpile and non-stockpile systems that enables the assessment and quantification of the performance margins and their associated uncertainties is studied in SAT. SAT also develops the predictive capabilities to quantify weapon output and its interaction with the surrounding environment. SAT has a strong programmatic coupling with the High-Energy Density (HED) facilities supported by both the Science and 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). Additional detail will be found in Chapter 3 of the FY 2013 *Stockpile Stewardship and Management Plan*, under the section entitled, "Predictive Science and – Assessment and Certification," with the subheading, "Nuclear Explosive Package Assessment."

Sequence



Benefits

In conjunction with the ASC Campaign, develops the tools, methods, and knowledge required to certify the nuclear performance of secondaries without nuclear testing. This includes developing modern tools needed to identify weapon failure modes, margins, and performance relevant to stockpile and non-stockpile systems.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Completed the energy balance milestone with validation experiments at the NIF and Z. • Conducted a series of experiments described in the three-year high energy density physics experimental plan. • Improved computational models of secondary performance will be developed and used to reduce uncertainties in calculations of critical aspects of performance.	**82,242**
FY 2012	• Strengthen the secondary assessment experimental science with a focus on full utilization of the NIF post the National Ignition Campaign. • Assess applicability of HED platforms to obtain relevant opacity data for model validation. • Numerically assess sensitivities associated with specific nuclear cross sections to inform future experimentation. • Demonstrate initial HED platform in support of secondary assessment objectives.	**84,744**
FY 2013	• Develop the required HED-based platforms and conduct an experimental campaign of secondary performance-related experiments using available HED facilities including NIF, Omega and Z. • Complete the second phase of the Pleiades activities on NIF. • Use HED platform to obtain opacity data relevant to SSP applications. • Develop a library of uniformly modeled devices and an associated database to include the relevant design and assessment information. • Complete the second phase of integrated secondary experiments on NIF. • Complete detailed weapon output assessments in support of NNSA, DoD and Global	**85,000**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	Security programs.	
FY 2014-FY 2017	• Develop and implement needed physics-based models to meet the FY 2015 PCF on Energy Balance. • Assess current secondary performance capabilities in light of FY 2017 and FY 2021 PCF. Include detailed comparison with experimental data, especially relevant UGT data. • Develop modern assessment capabilities and apply them to calculate outputs from a set of device types, in support of the FY 2021 PCF.	**TBD**

Capital Operating Expenses and Construction Summary
Capital Operating Expenses[a]

(dollars in thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Capital Operating Expenses			
General Plant Projects	0	0	0
Capital Equipment	13,584	13,883	14,188
Total, Capital Operating Expenses	**13,584**	**13,883**	**14,188**

Outyear Capital Operating Expenses

(dollars in thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request
Capital Operating Expenses				
General Plant Projects	0	0	0	0
Capital Equipment	14,500	14,819	15,145	15,478
Total, Capital Operating Expenses	**14,500**	**14,819**	**15,145**	**15,478**

Major Items of Equipment (MIE)

(dollars in thousands)

	Type	Total	Prior-Year Appro-priations	FY 2011 Current	FY 2012 Enacted	FY 2013 Request	Unappro-priated Balance	Completion Date
TA-53 pRad, LANL		2,100	0	1,070	741	0		FY 2013
Total, Major Items of Equipment				**1,070**	**741**	**0**		

[a] Funds are appropriated for Operations and Maintenance, which includes operating expenses, capital equipment and general plant projects. The program no longer budgets separately for capital equipment and general plant projects. Funding shown reflects estimates based on actual FY 2011 obligations.

Engineering Campaign
Funding Profile by Subprogram and Activity

(dollars in thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Total, Engineering Campaign	**142,010**	**142,636**	**150,571**

Out-Year Funding Profile by Subprogram and Activity

The outyear numbers for Weapons Activities do not reflect programmatic requirements. Rather, they are an extrapolation of the FY 2013 request based on rates of inflation in the Budget Control Act of 2011. The Administration will develop outyear funding levels based on actual programmatic requirements at a later date.

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
Consolidated Appropriations Act, 2012 (P.L. 112-74)
National Defense Authorization Act for FY 2012 (P.L. 112-81)

Overview

The Engineering Campaign provides the modern tools and capabilities needed to meet the challenges of maintaining a safe, secure, and effective nuclear weapons stockpile and directly supports the 2011 DOE Strategic Plan Goal to enhance nuclear security through defense, nonproliferation, and environmental efforts. It provides fundamental and sustained research, development, and engineering basis for stockpile certification and assessment that is needed throughout the entire lifecycle of each weapon to assess and improve fielded nuclear and non-nuclear components without further underground testing; and increases the ability of the National Nuclear Security Administration (NNSA) to predict the response of weapon components and subsystems to normal, abnormal, and hostile environments and to the effects of aging. As described in the 2010 *Nuclear Posture Review Report*, the Engineering Campaign directly supports "strengthening the science, technology, and engineering (ST&E) base needed for conducting weapon system life extension programs (LEPs), maturing advanced technologies to increase weapons surety features, qualification of weapon components and certifying weapons without nuclear testing, and providing annual stockpile assessments through weapons surveillance."

The Engineering Campaign is comprised of four subprograms; Enhanced Surety, Weapons Systems Engineering Assessment Technology, Nuclear Survivability, and Enhanced Surveillance, each of which contributes directly to the NNSA Strategic Plan Goal to "strengthen the science, technology, and engineering base." Also, there are a number of select initiatives within the 2011 NNSA Strategic Plan that rely on work done in the Engineering Campaign subprograms:

- "in 2012, deploy a formal process to mature safety and security technologies";
- "in 2012, demonstrate a model-based qualification of silicon electronics for weapon use in hostile environments";
- "by 2014, complete the transformation of the weapons stockpile surveillance program to enable detection of initial design and production defects for life extended weapons, materials aging defects and predictive performance trends for the enduring stockpile"; and
- "in 2015, demonstrate maturity of compound semiconductor electronics for insertion into LEPs".

Program Accomplishments and Milestones

In the prior appropriation year, FY 2011, the Engineering Campaign accomplished the following significant milestones in support of the nuclear weapons stockpile:

(1) Developed advanced safety, security, and use-control/denial technologies for stockpile insertion.
(2) Studied organic decomposition and breach of safety-related sealed exclusion regions in abnormal thermal environments.
(3) Evaluated equivalency of ion irradiations to simulate relevant neutron damage in relevant III-V compound semiconductor electronics for Qualification Alternatives to Sandia Pulsed Reactor (SPR) (QASPR).
(4) Characterized the aging behavior of legacy/new materials and components.

Explanation of Changes

The Department's Engineering Campaign request for $150.6 million in Fiscal Year (FY) 2013 is an increase of $7.9M (5.6%) over the FY 2012 budget of $142.6M. The

FY 2013 request represents the need to continue development of enhanced weapons surety and options for use in Life Extension efforts, validation-related testing for future refurbishments, modernization and expansion of tools for nuclear and nonnuclear components in hostile environments, and assessment of the impacts of weapon materials and components aging in support of future refurbishments.

The 3.7% real growth in the Engineering Campaign, some of which is coming at the expense of the enhanced surveillance subprogram, supports an approximately 10% overall increases in Enhanced Surety, Weapons Systems Engineering Assessment Technology, and Nuclear Survivability. These increases represent an accelerated effort for additional validation related testing to increase confidence in new component insertions for future Alts, Mods and LEPs.

Program Planning and Management

The Engineering Campaign validates its work and funding priorities with NNSA and DOE strategic objectives, in conjunction with the Directed Stockpile Work program and other Campaigns. Clear alignment with NNSA and DOE strategic objectives is attained by engaging in semi-annual, bottom-up reviews of its work across the Future Years Nuclear Security Program (FYNSP). This process enables effective resource allocations and will consistently achieve its goal of funding the highest priority work and addressing near-term and out-year challenges using an enterprise solution approach amongst Defense Programs.

Strategic Management

The Engineering Campaign is the driver for discovery, maturation, and initial application of the advanced engineering required for maintaining and transforming the nuclear weapons stockpile. The Engineering Campaign invests in the development of the advanced materials, technologies, and engineering assessment tools necessary to implement the NNSA Defense Programs' Strategic Objectives and initiatives.

One tool being implemented to better manage technology development and integrate Engineering Campaign activities with other Stockpile Stewardship program is the Component Maturation Framework (CMF). The CMF's integrated construct summarizes the specific technological and programmatic hurdles to, and opportunities for, successfully maturing components to meet the Stockpile LEP schedule. The Engineering Campaign is an integral contributor to the CMF initiative because it provides the enabling capability to mature relevant component technology at the low-end of the Technology Readiness Level (TRL) scale. As development progresses, the technology moves up the TRL to the point where components are ready for insertion into a subsystem or system and responsibility is transitioned to the Directed Stockpile Work (DSW) program. Engineering Campaign scope is prioritized to address technology developments required to support the activities outlined in the CMF.

The Engineering Campaign activities are closely integrated with DSW, Advanced Strategic Computing (ASC), Readiness and Science Campaigns, and RTBF.

Major Outyear Priorities and Assumptions

The outyear numbers for Weapons Activities do not reflect programmatic requirements. Rather, they are an extrapolation of the FY 2013 request based on rates of inflation in the Budget Control Act of 2011. The Administration will develop outyear funding levels based on actual programmatic requirements at a later date. Major Outyear Priorities and Assumptions will be delineated in that update.

Program Goals and Funding

The outyear numbers for Weapons Activities do not reflect programmatic requirements. Rather, they are an extrapolation of the FY 2013 request based on rates of inflation in the Budget Control Act of 2011. The Administration will develop outyear funding levels based on actual programmatic requirements at a later date. Program Goals and Funding will be delineated in that update.

Explanation of Funding and/or Program Changes

	(Dollars in Thousands)		
	FY 2012 Enacted	FY 2013 Request	FY 2013 vs. FY 2012
Engineering Campaign			
Enhanced Surety	**41,565**	**46,421**	**+4,856**

The increase reflects the need to modernize and enhance surety options for future Life Extension Programs (LEPs), Alterations (Alts), Modifications (Mods), and including multi-point safety options and integrated surety solutions (ISS). These technologies must be demonstrated in realistic and relevant environments in this sub-program before they can be considered viable to be selected as part of those weapon system LEPs, Alts, and Mods.

Weapons Systems Engineering Assessment Technology	**15,621**	**18,983**	**+3,362**

The increase reflects the additional need for validation-related testing required for future LEPs, ALTs and future refurbishments and current stockpile assessments. An extensive set of data is needed to validate engineering models and develop computational tools essential in qualifying components and certifying warhead performance in the upcoming LEPs and ALTs. This data includes spatially resolved thermal radiation emission and absorption measurements; aeromechanical loading; coupled thermal-mechanical response to abnormal environments; and high explosive, polymer thermal and structural mechanical property measurements and material model development with predictive failure capability.

Nuclear Survivability	**19,483**	**21,788**	**+2,305**

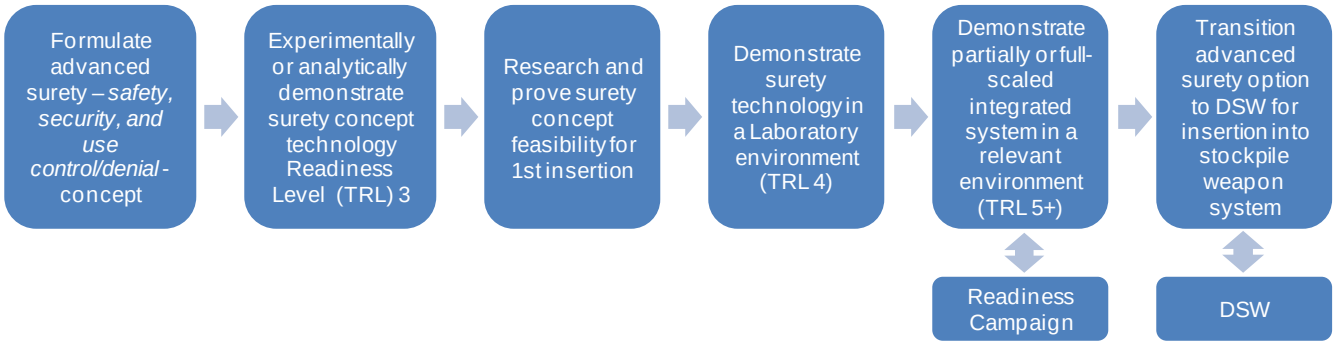
The increase reflects the requirements for improved assessment capabilities and developing radiation hardened technologies for nuclear survivability. At Los Alamos National Laboratory (LANL) and Lawrence Livermore National Laboratory (LLNL), the increase will expand capability and modernize tools for nuclear survivability assessments of nuclear components supporting upcoming LEPs. At Sandia National Laboratories (SNL), the increase will improve the technical basis for nuclear survivability assessments of nonnuclear components addressing potential impacts of natural aging for the stockpile and incorporation of new technologies like electro-optical devices for future reentry system LEPs. These upgrades are also necessary due to threat model updates.

	(Dollars in Thousands)		
	FY 2012 Enacted	FY 2013 Request	FY 2013 vs. FY 2012
Enhanced Surveillance	**65,967**	**63,379**	**-2,588**
The decrease reflects revised assessments of the long term aging of re-use/new materials and components that are being considered for the upcoming Alts, Mods, and LEPs. The decision has been made to defer these activities to later years.			
Total Funding Change, Engineering Campaign	**142,636**	**150,571**	**+7,935**

Enhanced Surety
Overview

Enhanced Surety supports President Obama's 2009 Prague statement[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 preventing all unauthorized possession or use of a U.S. nuclear weapon. Additionally, Enhanced Surety supports "the high standard for the safety and security of the U.S. nuclear weapons," as stated in the 2010 *Nuclear Posture Review Report*, through maturing technology to address additional surety features. Enhanced Surety develops and matures advanced safety, security, and use-control/denial technologies for stockpile insertion at the earliest opportunity to include (1) minimizing the probability of an accidental nuclear explosion, (2) reduce the probability of unauthorized access to a U.S. nuclear weapon, and (3) in the unlikely event that unauthorized access is gained, reducing the unlikelihood of an unauthorized nuclear yield. Enhanced Surety seeks advances to leading-edge technology in all three of these areas.

Sequence and Integration Points



Benefits

Enhanced Surety develops advanced initiation and use-control/denial options, as well as ISS for the next insertion opportunity into a stockpile weapon system. This ensures that new, improved levels of control/denial of unauthorized use are achieved and that modern technology advancements are integrated within nuclear weapons safety and security.

Other Information

In accordance with the 2010 *Nuclear Posture Review Report*, the Enhanced Surety subprogram directly supports "strengthening the science, technology, and engineering (ST&E) base needed for conducting weapon system LEPs, maturing advanced technologies to increase weapons surety […] certifying weapons without nuclear testing..." This subprogram supports the 2011 NNSA Strategic Plan initiative that states "Life extension programs […] incorporate appropriate modern safety and security features into existing warhead systems, consistent with the direction in the Nuclear Posture Review report."

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

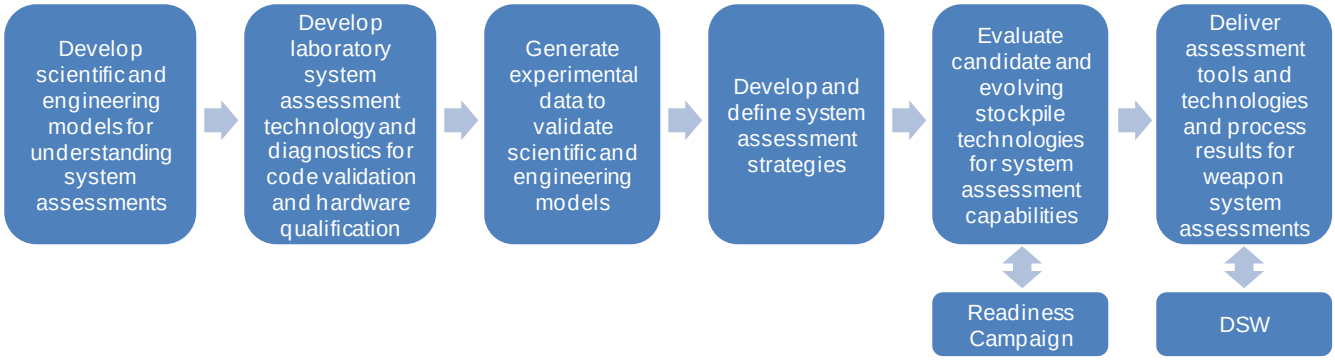
Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Brought the highest priority sensor option for the next viable insertion opportunity up to a technology readiness level (TRL) of 5 (validation in a relevant environment). • Refined Tritium Thermoelectric Generator design to develop electrically heated end-of-life power source that can survive the Common Adaptable System Architecture mechanical environments, and thermal testing under all relevant thermal (dynamic and static) environments. • Demonstrated a fully integrated surety solution prototype unit for the W76-1 transportation environment.	**42,395**
FY 2012	• Conduct material compatibility testing for high-priority multi-point safety (MPS) concepts, advancing the maturity of these concepts to TRL-3 (key elements demonstrated analytically or experimentally). • Transition an initial LANL MPS option from the Enhanced Surety subprogram to DSW. Demonstrate the Advanced Robust Miniature Stronglink (ARMS) to TRL-3 by analysis and modeling. • Initially deploy elements of a formal process to evaluate safety and security technologies in various venues. • Demonstrate the highest priority sensor to TRL-5+ (key elements demonstrated in relevant environments). • Mature Technologies for multi-venue ISS implementation systems to TRL-3.	**41,565**
FY 2013	• Continue compatibility testing to ensure that the Lawrence Livermore National Laboratory (LLNL) MPS concept applies to upcoming LEPs. • Demonstrate the ARMS to TRL-4 (key elements demonstrated in a controlled environment) by testing and evaluation. • Demonstrate the next generation surety sensor to TRL-3+. • Mature technologies for multi-venue ISS implementation to TRL-4. • Continue to mature and apply the Integrated Lifecycle Surety (ILS) tool to additional DOE and DoD venues.	**46,421**
FY 2014-FY 2017	• Demonstrate the highest priority LLNL MPS concept to TRL-6 (deliverable demonstrated in relevant environments). • Demonstrate an additional LANL MPS concept to TRL-5. • Demonstrate the ARMS to TRL-6 by testing and evaluation. • Demonstrate the next generation surety sensor to TRL-5+. • Mature Technologies for multi-venue ISS implementation for Air Force systems to TRL-6. • Continue to apply the Integrated Lifecycle Surety (ILS) tool to additional DOE and DoD venues.	**TBD**

Weapons Systems Engineering Assessment Technology
Overview

The Weapon Systems Engineering Assessment Technology (WSEAT) subprogram matures the physical understanding of weapon system and weapon component responses to environments including all relevant stockpile-to-target sequence (STS) and manufacturing support service environments except nuclear and hostile electromagnetic environments. The WSEAT subprogram supports activity 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 both the immediate needs of DSW and ASC customers (such as the upcoming LEPs and ALTs; stockpile assessments; and open significant finding investigations (SFIs)) and long-term projected needs (such as future Alts, Mods, LEPs and identified nuclear safety soft spots).

Sequence and Integration Points



Benefits

- WSEAT provides scientific understanding, experimental capability, diagnostic development and data required to qualify components and full weapon assemblies.
- WSEAT forms a key link between engineering sciences and computational simulation and between testing and evaluation in both normal and abnormal environments that are essential to the weapon program qualification and certification activities.

Other Information

WSEAT matures the physical understanding of weapon system and weapon component responses to environments need throughout the entire lifecycle of each weapon. In accordance with the 2010 *Nuclear Posture Review Report*, the subprogram directly supports "strengthening the science, technology, and engineering (ST&E) base needed for conducting weapon system LEPs, maturing advanced technologies to increase weapons surety, [and] qualification of weapon components and certifying weapons without nuclear testing." WSEAT also contributes directly to the NNSA Strategic Plan Goal to "strengthen the science, technology, and engineering base."

Funding and Activity Schedule

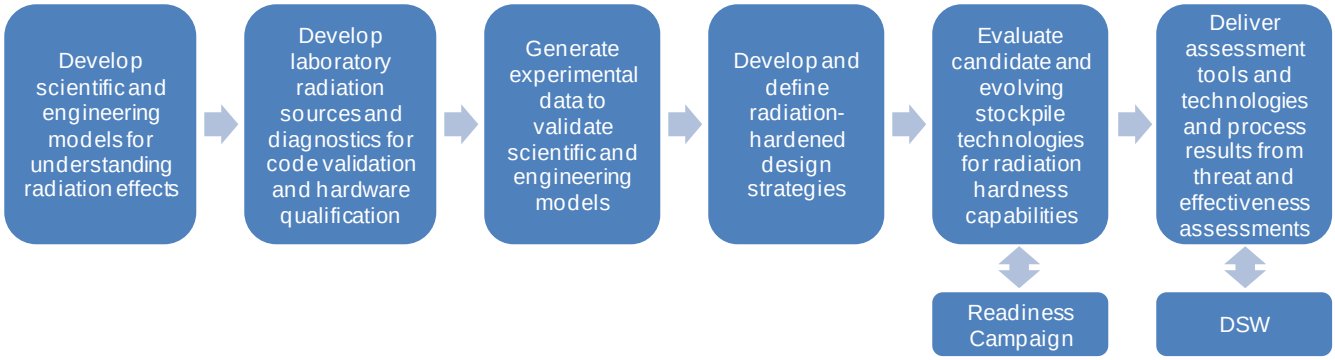
Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Studied organic decomposition and breach of safety-related sealed exclusion regions in abnormal thermal environments. • Assessed the effects of hermetic gaskets on aperture penetration of electromagnetic radiation. • Conducted experimental effort to characterize the as-built stress state of high-fidelity high explosive systems to support continuous improvement of assessment (modeling) capability.	**13,524**

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• Complete fire model validation with data sets for spatially resolved thermal radiation emission and absorption loads in a fire for postulated environments. • Demonstrate hybrid (computational/experimental) structural response modeling for normal aeromechanical loading environments for relevant environments and responses. • Continue to develop non-intrusive instrumentation. • Develop thermal and mechanical testing capabilities for high explosives and polymers supporting primary structural response material model development. • Quantify uncertainties and assess margins for an air carried primary subassembly in normal environments. • Develop reentry system primary subassembly test.	**15,621**
FY 2013	• Characterize the composite fire environment for definition of STS environment and qualification testing. • Develop the framework for energy-based quantification of performance margin for components in shock, vibration, and acceleration environments. • Develop the capability to perform combined thermal-mechanical-optical performance testing of Advanced Initiation. • Characterize the in-situ stress state of Insensitive High Explosive (including the integrated effects of ratchet growth and creep) in weapon system lifetime thermal environment. • Continue developing thermal and mechanical testing capabilities for polymers and high explosives. • Continue insensitive high explosives testing, with a focus on material failure. • Conduct reentry system primary subassembly testing. • Mature instrumentation technologies to measure in-situ high explosive displacement and load state for the characterization of creep and ratchet behaviors.	**18,983**
FY 2014-FY 2017	• 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 Lightening 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.	**TBD**

Nuclear Survivability
Overview

The modern analysis capabilities developed by the Nuclear Survivability subprogram will enable quicker and more accurate assessment of the potential impacts to warhead nuclear survivability of scheduled refurbishments (LEPs, Alts, and Mods); weapon replacement activities; 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.

Sequence and Integration Points



Benefits

- Nuclear Survivability (NS) provides the tools and technologies necessary to design and qualify components and subsystems to meet nuclear survivability requirements. This work includes development of modernized analysis tools and supporting the development of radiation-hardened components.
- NS supports the Engineering Campaign Technology Roadmap vision: "In 2030: Design, assessment, and manufacturing capabilities to ensure stockpile systems maintain appropriate performance and safety margins." In addition, it supports one of the five goals in the May 2011 NNSA Strategic Plan: "Strengthen the Science, Technology, and Engineering Base."
- NS develops, in close coordination with the DoD, the tools to calculate the output and performance of modern weapons needed to define some of the most stressing and damaging nuclear environments.

Other Information

Nuclear Survivability provides the fundamental and sustained engineering basis for nuclear survivability assessment that is needed throughout the entire lifecycle of each weapon. In accordance with the 2010 *Nuclear Posture Review Report*, the subprogram directly supports "strengthening the science, technology, and engineering (ST&E) base needed for conducting weapon system LEPs, maturing advanced technologies to increase weapons surety, [and] qualification of weapon components and certifying weapons without nuclear testing."

NNSA must harden reentry systems to nuclear environments that are much more stressing and damaging than those encountered by civilian or other military systems that use radiation-hardened technology produced by the private sector. Most notable are the neutron and gamma environments produced by modern nuclear weapons. However, there are some environments for which NNSA can leverage some analysis tools and hardening technologies developed in the private sector and at other government laboratories. These include tools and technologies to understand and mitigate electromagnetic pulse effects, transient radiation effects in electronics (TREE), and enhanced low dose rate sensitivity (ELDRS). In design, NNSA laboratories utilize appropriately hardened private sector technologies where possible, but must in many cases utilize lab-developed technology to achieve adequate reentry system hardness.

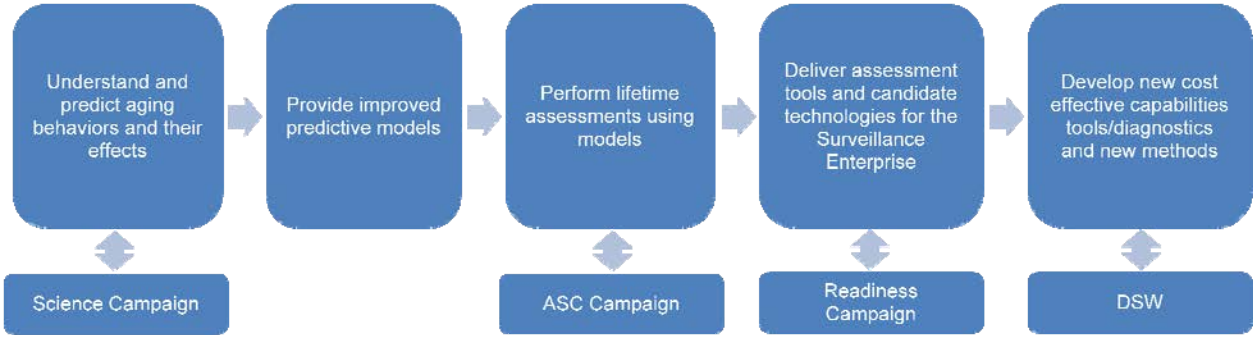
Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Evaluated equivalency of ion irradiations to simulate relevant neutron damage in III-V compound semiconductor electronics for QASPR. • Conducted a DSW stakeholder review of research and development activities and priorities to ensure alignment with DSW LEPs, LLCEs, and surveillance schedules. • Modeled and calculated scenarios for 21st Century Nuclear Weapon Model threats for the W87 Nuclear Explosive Package (NEP).	**19,721**
FY 2012	• Deliver, through the QASPR program, the model-based qualification methodology for silicon bipolar junction transistor technology for legacy warhead systems in hostile environments. • Complete initial analyses of components and subsystems to identify and prioritize needed follow-on intrinsic radiation susceptibility R&D and to quantify exposure levels external to the weapon. • Support the material down-select for Arming, Firing and Fusing (AF&F) replacement. • Deliver validation data for impulse generation models for representative reentry system materials. • Demonstrate an advanced Terminal Protection Device (TPD) for the AF&F/cable interface.	**19,483**
FY 2013	• Conduct initial validation, through the QASPR program, of the qualification methodology for heterojunction bipolar transistor technology using atomistic damage models. • Deliver the second and third high-fidelity sources to investigate intrinsic radiation effects at war reserve-like conditions for future LEPs and alterations. • Deliver initial operating capability for high fidelity x-ray source for validation and qualification experiments. • Deliver validation data for dose-rate models to support TREE analysis for AF&F designs. • Test and evaluate an alternate TPD design configuration. • Deliver survivability analysis of legacy RV/RB systems for updated output models.	**21,788**
FY 2014-FY 2017	• Complete validation, through the QASPR program, of the qualification methodology for compound semiconductor heterojunction bipolar transistor technology. • Characterize and validate the second and third high-fidelity sources to investigate intrinsic radiation effects at war reserve-like conditions for future LEPs and alterations. • Deliver validation data for ELDRS scientific models. • Deliver validation data for impulse generation models. • Implement robust and reliable transfer of energy-deposition data from radiation transport codes to structural and mechanical codes for thermomechanical shock and thermostructural shock at SNL. • Deliver data to validate models for System-Generated Electro-Magnetic Pulse. • Deliver scalable hardening techniques for Total Ionizing Dose for 180-nanometer 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 for insertion into LEPs.	**TBD**

Enhanced Surveillance
Overview

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 based on the best available science and technology. The ES tools consist of science-based models of material, component, and subsystem aging phenomena and advanced diagnostic techniques that make the data needed to validate these models easier and less expensive to obtain. 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.

Sequence and Integration Points



Benefits

- Because nuclear weapons are being retained in the stockpile for durations well beyond their as-designed lifetimes, scientists and engineers in the ES subprogram develop and maintain a fundamental scientific understanding of stockpile aging and translate this understanding into the models and technologies needed for early identification and assessment of stockpile aging concerns.
- ES provides lifetime and compatibility assessments on reuse of existing materials and components and/or new materials in support of potential refurbishment of weapons in LEPs. These lifetime assessments include the experimental accelerated aging tests, assessment of aged components from the stockpile, and computational verification of component and material aging.
- ES develops advanced diagnostics and predictive capabilities for early detection of stockpile aging concerns; assesses component lifetimes in the existing stockpile to support refurbishment decisions; and provides information to improve the longevity and sustainability of replacement systems. These advanced diagnostics are able to identify potential issues that previously could not have been identified through prior diagnostics/surveillance methods thus enabling a better understanding of the current state of the stockpile. These new analytical methods and diagnostics, including non-destructive evaluation techniques, achieve a timelier, less invasive (potentially allows tested components to be candidates for re-use), and more cost effective surveillance.

Other Information

In accordance with the 2010 *Nuclear Posture Review Report*, the Enhanced Surveillance subprogram directly supports "Strengthening the science, technology, and engineering (ST&E) base needed for conducting weapon system LEPs, […] certifying weapons without nuclear testing, and providing annual stockpile assessments through weapons surveillance." The Enhanced Surveillance subprogram contributes to DSW and the Stockpile Stewardship Program by looking beyond the horizon for long-term stockpile aging behavior of weapon materials and components. This subprogram coordinates with other elements of the Stockpile Stewardship Program (e.g. Stockpile Evaluation Program (SEP), ASC, DSW, Science

Campaign), in particular the Surveillance program by contributing directly to the 2011 NNSA Strategic Plan goal that states "by 2014, complete the transformation of the weapons stockpile surveillance program to enable detection of initial design and production defects for life extended weapons, materials aging defects and predictive performance trends for the enduring stockpile." This subprogram works with the SEP on diagnostics, annual assessments, Component and Material Evaluation (CME), Technical Basis for Stockpile Transformation Planning (TBSTP)/lifetime estimates. It should also be noted, that this subprogram has the unique role of looking beyond the horizon for long-term stockpile aging behavior to identify problems early so they can be addressed in time.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Completed an Enhanced Surveillance stockpile aging and lifetime assessment report to inform stockpile decisions on annual assessments, SFIs and LEPs. • Characterized the aging behavior of legacy/new materials and components in coordination with decision-making on LEPs and LLCEs. • Established initial Canned Sub-Assembly (CSA) component lifetimes for the B61. • Informed stockpile decisions on annual assessments, Significant Finding Investigations (SFIs) & LEPs through accelerated aging, compatibility and alternative material tests.	**66,370**
FY 2012	• Complete an Enhanced Surveillance stockpile aging and lifetime assessment report to inform stockpile decisions on annual assessment, SFIs and LEPs. • Update the CSA failure criteria based on modern performance code computations. • Update the pit lifetimes using the latest ASC baseline. • Provide assessment results for individual and cumulative physics performance effects of various materials and component aging effects. • Report the status of CSA response to aging features. • Deliver and qualify a Weapon Evaluation Test laboratory (WETL) Systems Tester.	**65,967**
FY 2013	• Complete an Enhanced Surveillance stockpile aging and lifetime assessment report to inform stockpile decisions on annual assessment, SFIs and LEPs. • Provide the assessment results from the stack-up tests to inform stockpile decisions. • Establish initial NEP integrated lifetimes. • Deliver and qualify a WETL Systems Tester. • Demonstrate the "next generation" Photonic Doppler Velocimetry at TRL 6. • Demonstrate a comprehensive science based component and material evaluation (CME) program for selected components.	**63,379**
FY 2014-FY 2017	• Annually complete an Enhanced Surveillance stockpile aging and lifetime assessment report to inform stockpile decisions on annual assessment, SFIs and LEPs. • Update the NEP component lifetimes. • Update the lifetime/aging assessment for non-nuclear components. • Support the transformation of the weapons stockpile surveillance program to enable detection of initial design and production defects for life extended weapons, materials aging defects and predictive performance trends for the enduring stockpile.	**TBD**

Capital Operating Expenses and Construction Summary
Capital Operating Expenses[a]

(dollars in thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Capital Operating Expenses			
General Plant Projects	560	572	585
Capital Equipment	3,537	3,615	3,695
Total, Capital Operating Expenses	**4,097**	**4,187**	**4,280**

Outyear Capital Operating Expenses

(dollars in thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request
Capital Operating Expenses				
General Plant Projects	598	611	624	638
Capital Equipment	3,776	3,859	3,944	4,031
Total, Capital Operating Expenses	**4,374**	**4,470**	**4,568**	**4,669**

[a] Funds are appropriated for Operations and Maintenance, which includes operating expenses, capital equipment and general plant projects. The program no longer budgets separately for capital equipment and general plant projects. Funding shown reflects estimates based on actual FY 2011 obligations.

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Inertial Confinement Fusion Ignition and High Yield Campaign
Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Total, Inertial Confinement Fusion and High Yield Campaign	**478,105**	**474,812**	**460,000**

Out-Year Funding Profile by Subprogram and Activity

The outyear numbers for Weapons Activities do not reflect programmatic requirements. Rather, they are an extrapolation of the FY 2013 request based on rates of inflation in the Budget Control Act of 2011. The Administration will develop outyear funding levels based on actual programmatic requirements at a later date.

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
Consolidated Appropriations Act, 2012 (P.L. 112-74)
National Defense Authorization Act for FY 2012 (P.L. 112-81)

Overview

The Inertial Confinement Fusion Ignition and High Yield (ICF) Campaign supports U.S. Department of Energy's (DOE) Security Goal by providing scientific understanding and experimental capabilities in high-energy density physics (HEDP) necessary to maintain a safe, secure, and reliable nuclear weapons stockpile without underground testing. The demonstration and application of ignition and thermonuclear burn in the laboratory is the most important component of the ICF Campaign and a major goal for the National Nuclear Security Administration (NNSA) and the DOE. It supports stockpile assessment and certification and the Department's security mission. Science-based weapons assessments and certification require advanced experimental capabilities that can create and study matter under extreme conditions that approach the high-energy density (HED) environments found in a nuclear explosion. 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 non-ignition HED research and advanced simulation codes. The achievement of ignition and its use for the Stockpile Stewardship Program (SSP) is a grand scientific challenge requiring a consistent, focused effort. Potential physics unknowns and technical complexities could arise and require time to study and resolve. Communicating the progress on the path to ignition and the value of this effort to the SSP and the nation is a critical responsibility of the ICF Program.

Program Accomplishments and Milestones

The ICF Campaign accomplishments over the last year include:
1) Completed operational qualification of the first set of National Ignition Facility ignition diagnostics and installed capabilities to support high yield cryogenic target implosions on the National Ignition Facility (NIF); 2) A record peak pressure exceeding 50 Mbar was demonstrated in an isentropic compression of carbon experiment on the NIF; 3) Completed first set of experiments to tune and control the shape, implosion velocity, compressed fuel density, and mix of implosions and demonstrated layered tritium-hydrogen-deuterium (THD) and deuterium-tritium (DT) cryogenic layered implosions. Cryogenic implosions have shown improved performance as a result of the first set of tuning experiments; and 4) At the refurbished Z Pulsed Power Facility at Sandia National Laboratories (SNL), plutonium materials properties experiments have resumed, a new load current record of 26.4 Mega-Amperes (MA) was achieved, and routine operation at 85 Kilovolts (kV) Marx charge was demonstrated, allowing higher energy densities to be obtained routinely on Z.

Explanation of Changes

The Department requests $460 million in Fiscal Year (FY) 2013 for the ICF Campaign, a $14.8M (3.1%) decrease from the FY 2012 Enacted.

The National Ignition Campaign will be complete at the end of FY 2012, with NIF transitioning to routine operations in support of the SSP. In FY 2013, the ICF Program has been balanced to support efforts in ignition, advanced ignition, and high energy density weapons research. Funding for non-ignition research in support of stockpile science and near-term stockpile needs resumes in FY 2013 in the Support of Other Stockpile Programs subprogram. Funding in this subprogram was suspended

in FY 2008 to focus efforts on the achievement and development of ignition. This leverages ICF's expertise, providing additional support to the HED weapons efforts and NNSA's broader SSP needs and as outlined in the Predictive Capability Framework (PCF). Ongoing efforts toward ignition (if not achieved in FY 2012), the development of a reproducible ignition platform, and advanced ignition concepts will continue at a reduced pace in the Ignition subprogram as funding for Support of Other Stockpile Programs resumes. If indirect-drive ignition has not been achieved by the end of FY 2012, development of a detailed physics understanding will be used to improve the designs in concert with the development of alternative ignition concepts. This will allow a discovery rather than schedule driven program that will provide more opportunities for comparison with simulations and feedback from them to resolve the outstanding physics questions.

A slight decrease in funding for Facility Operations and Target Production will be mitigated by increased operational efficiencies and by prioritizing the most urgent experiments in support of the Stockpile.

With the elimination of the Self-Constructed Asset Pool (SCAP) rate at Lawrence Livermore National Laboratory in FY 2013, the National Ignition Facility will operate under the same rate structure as the rest of the Laboratory and all individual users of NIF will be directly charged for their use of the facility.

The budget has been carefully balanced to support efforts in ignition, advanced ignition, and high energy density weapons research at NIF, Omega, and Z. The budget provides $86,500,000 for operation and utilization of the Z facility at SNL. This includes $6,000,000 in pulsed power fusion and $49,000,000 in facility operations within the ICF Campaign, and $31,500,000 within the Science Campaign. The ICF budget provides $271,750,000 for the operations of the NIF and the ICF program at the Lawrence Livermore National Laboratory (LLNL) and $60,250,000 for the operations of the Omega Laser Facility and the ICF program at the University of Rochester. Depending on the status of the ignition effort and the physics understanding at the end of FY 2012, Omega operations funding may be increased to provide additional data that may be required.

Program Planning and Management

The ICF Campaign regularly validates its work and funding priorities to align them with NNSA and DOE strategic objectives. It engages in semi-annual internal reviews as well as regular external reviews of its work across the Future-Years Nuclear Security Program (FYNSP). The ICF Campaign's process for allocating resources allows it to achieve its goal of funding the highest priority work and addressing near-term and out-year challenges for the SSP including the achievement of ignition and the development of ignition as an experimental platform to address these challenges.

The ICF Campaign applies program management principles and controls to ensure the most effective and efficient use of resources provided. For example, the program focuses its efforts on level 1 and level 2 milestones that support strategic objectives outlined in annually updated Program and Implementation Plans and on oversight of the use of the ICF campaigns suite of high energy density facilities to meet NNSA's goals.

Strategic Management

The ICF Program uses various strategies to achieve its program goals. The Program uses forward-looking efforts with specific objectives and milestones, planned and executed by integrated teams from the Program participants, Los Alamos National Laboratory (LANL), LLNL, Laboratory for Laser Energetics (LLE), SNL, General Atomics (GA), and Naval Research Laboratory (NRL). These strategies are managed through program planning, milestones, and negotiated performance measures, including those that are the responsibilities of multiple sites and that occur over multiple years.

The largest potential impact to the overall achievement of the program's strategic goal is the physics uncertainties associated with exploring the extreme conditions associated with ignition and HEDP. This is being mitigated through the use of advanced design capabilities, experiments on NIF, Omega, and Z, and the development and deployment of advanced optics, target, and diagnostic capabilities at NNSA's HED facilities, and by maintaining the level of excellence within the technical staff through challenging work that continually builds competencies critical to this program and to the Nuclear Security Enterprise.

Major Outyear Priorities and Assumptions

The outyear numbers for Weapons Activities do not reflect programmatic requirements. Rather, they are an extrapolation of the FY 2013 request based on rates of inflation in the Budget Control Act of 2011. The Administration will develop outyear funding levels based on actual programmatic requirements at a later date. Major Outyear Priorities and Assumptions will be delineated in that update.

Program Goals and Funding

The outyear numbers for Weapons Activities do not reflect programmatic requirements. Rather, they are an extrapolation of the FY 2013 request based on rates of inflation in the Budget Control Act of 2011. The Administration will develop outyear funding levels based on actual programmatic requirements at a later date. Program Goals and Funding will be delineated in that update.

Explanation of Funding and/or Program Changes

	(Dollars in Thousands)		
	FY 2012 Enacted	FY 2013 Request	FY 2013 vs. FY 2012
Inertial Confinement Fusion and High Yield Campaign			
Ignition	**109,888**	**84,172**	**-25,716**
The decrease is consistent with resuming funding of Support of Other Stockpile Programs within the ICF Program in FY 2013. Funding supports ongoing efforts to develop a robust reliable ignition platform and research into advanced ignition concepts with higher gain or yield at a reduced pace. Funding to NRL resumes in this subprogram for collaborative research in advanced ignition concepts.			
Support of Other Stockpile Programs	**0**	**14,817**	**+14,817**
The increase is consistent with resuming funding for Support of Other Stockpile Programs within the ICF Program in FY 2013 to support non-ignition high-energy density physics research in support of stockpile science. Funding was suspended for this subprogram in FY 2008 to focus efforts on achieving and developing ignition. ICF expertise is leveraged to provide needed support of HED weapons research and to provide HED data to support NNSA's near term stockpile needs and meet PCF goals. Funding supports development of diagnostics and platforms for specific HED experiments for materials strength, equation of state, mix, and radiation hydrodynamics and non-ignition implosion experiments on NIF, Omega, and Z.			
Diagnostics, Cryogenics, and Experimental Support [a]	**85,654**	**81,942**	**-3,712**
Overall effort in this subprogram decreases slightly as a result of the completion of the initial suite of NIF diagnostics and cryogenic capabilities. Additional effort is required, but the baseline capabilities are in place and the pace can be reduced. Funding supports diagnostics, cryogenics, and experimental support such as user optics. The advanced diagnostics effort that began in FY 2011 continues, with next-stage designs of diagnostics selected during FY 2012.			
Pulsed Power Inertial Confinement Fusion	**4,997**	**6,044**	**+1,047**
The increase allows additional effort to advance the science of magnetically-driven implosions. In FY 2013, effort focuses on developing the capability to provide an initial axial magnetic field and laser preheat of the fuel for magnetized liner			

[a] FY 2012 funding was appropriated under the name NIF Diagnostics, Cryogenics and Experimental Support. FY 2013 funding is requested under the name Diagnostics, Cryogenics and Experimental Support.

	(Dollars in Thousands)		
	FY 2012 Enacted	FY 2013 Request	FY 2013 vs. FY 2012
inertial fusion experiments on Z and to develop new diagnostics and techniques to measure the implosion dynamics, magnetic fields, and fuel conditions.			
Joint Program in High Energy Density Laboratory Plasmas	**9,100**	**8,334**	**-766**
Funding supports basic science research grants provided through solicitations under this subprogram at a reduced level. This subprogram is a joint program with the Office of Science to support basic high-energy density physics research for universities to strengthen the science, technology, and engineering base critical for the nuclear mission.			
Facility Operations and Target Production	**265,173**	**264,691**	**-482**
Funding supports operations of NIF, Omega, Z, and Trident and target support for experiments. A reduction in the shot rate at the NIF through funding reductions and restructuring due to SCAP rate change will be partially mitigated by improvements in operational efficiencies as NIF transitions to routine operations. Additional scope for the Z Facility at SNL is moved into this subprogram from the Science Campaign. Experimental time on HED facilities commensurate with the balance of the research efforts, with additional time devoted to HED weapons experiments and ignition platform development proceeding at a reduced pace. The overall net decrease results in fewer SSP experiments at HED facilities in FY 2013. This decrease will be mitigated by increased operational efficiencies and by prioritizing the most urgent experiments in support of the Stockpile.			
Total Funding Change, Inertial Confinement Fusion and High Yield Ignition Campaign	**474,812**	**460,000**	**-14,812**

Ignition
Overview

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 validate the codes needed to assess and certify the stockpile. The demonstration of ignition is a major goal for the NNSA and DOE. This 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. This includes experiments on NNSA's HED facilities, development of ignition target fabrication and assembly methods, development of advanced target diagnostic techniques, and systems engineering improvements essential to ignition efforts. This effort is 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 achieve indirect-drive 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.

Sequence

Benefits

- Focuses the research effort to demonstrate thermonuclear ignition in the laboratory and to develop ignition into a tool to address key weapons issues. Achieving ignition is an essential part 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.
- Develops the advanced experimental capabilities that can create and study matter under extreme conditions that approach the high-energy density environments found in a nuclear experiments. 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 upon the capabilities developed within this subprogram to successfully execute their programs.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Efforts focused on activities required to achieve indirect drive ignition on the NIF. Experiments on NIF are conducted using developed platforms to tune and control the shape, implosion velocity, compressed fuel density, and fuel mix to improve implosion performance.	**109,806**
FY2012	• Effort continues towards achieving indirect drive ignition on the NIF. Tuning experiments continue, building upon the results of the FY2011 experiments with the goal of igniting a layered 50:50 deuterium-tritium fueled capsule with ~1.3 MegaJoule energy on the NIF. • Perform experiments on Omega and Z to support the development of ignition and its uses. This includes platform and diagnostic development. • Ongoing development of the Polar Drive Ignition concept to meet robust ignition needs for SSP beyond the initial NIF ignition platform.	**109,888**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	• Collaborate with the Science Campaign effort to plan vital HED (non-ignition) weapons physics experiments on the NIF and Omega and support for Science Campaigns in FY 2013.	
FY 2013	• Continue efforts toward ignition (if not achieved in FY 2012) and 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. • Perform experiments on Omega and Z to support the development of ignition and its uses. This includes platform and diagnostic development. • Advanced Ignition Concepts provide the possibility of higher gains or other experimental advantages that provide improved data to meet SSP needs. Validate Polar Drive Advanced Ignition Concept on Omega. • Portion of funding moves to Support of Other Stockpile Programs subprogram, leveraging ICF capabilities to support HED (non-ignition) weapons physics experiments.	**84,172**
FY 2014-FY 2017	• Use the first ignition platform to support SSP needs, in particular critical experiments requiring igniting and burning plasmas, in support of the Predictive Capability Framework. • Demonstrate one or more Advanced Ignition concepts on the NIF to meet requirements of SSP physics applications of ignition. • Perform experiments on Omega and Z to support the development of ignition and its uses, including platform and diagnostic development.	**TBD**

Support of Other Stockpile Programs
Overview

Non-ignition experiments using the ICF program's suite of HED facilities are essential to assessing and certifying the stockpile and meeting DOE's security goals. This subprogram leverages the experience of the ICF-funded researchers to support NNSA's SSP non-ignition physics needs, developing and integrating the experimental infrastructure and capabilities required to execute HEDP experiments on ICF facilities as guided by the PCF. This includes the development of laser, target, and diagnostic capabilities. ICF's HED facilities are used to perform experiments where ignition and burn are not the focus, for example, material properties, hydrodynamics, radiation transport. It includes platform and diagnostic development on Omega, Z and supporting facilities. The understanding gained and capabilities developed enhance our understanding and validate the codes used to certify the stockpile. The Science Campaign, DSW and other stockpile program elements rely upon the capabilities developed within this subprogram to successfully execute their programs.

Sequence

Benefits

Non-ignition experiments using the ICF programs suite of HED facilities are an essential part of meeting DOE's security goals and its requirement to assess and certify the stockpile. Develops and uses HED/ICF experimental capabilities and personnel to resolve important stockpile questions in cooperation with other components of the Office of Stockpile Stewardship.

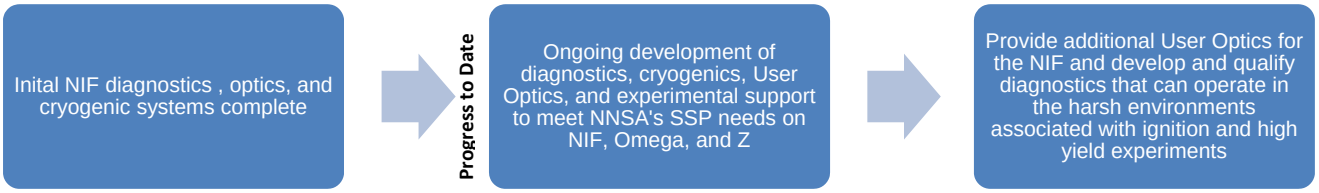
Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Consistent with NNSA's priorities, funding in this subprogram was delayed until FY 2013 to focus on the highest priority, achieving ignition on the NIF. This subprogram was used extensively through FY 2007.	**0**
FY 2012	• ICF Campaign collaborates with the Science Campaign to develop vital HED (non-ignition) weapons physics experiments on the NIF, Z, and Omega for FY 2013.	**0**
FY 2013	• Research resources previously provided under the Ignition subprogram are directed to this subprogram. • Development of diagnostics and platforms for specific HED experiments for materials strength, equation of state, mix, and radiation hydrodynamics on Omega, NIF, and Z. • Conduct non-ignition implosion experiments on NIF and Omega to provide HED data to support NNSA's SSP needs.	**14,817**
FY 2014-FY 2017	• Continue to provide non-ignition HED data using NIF, Omega, and Z and other facilities to support NNSA's SSP needs. • Develop the experimental and analytical capability to acquire high-pressure material data, 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.	**TBD**

Diagnostics, Cryogenics and Experimental Support
Overview

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 and the associated information technology subsystems needed for data acquisition, storage, retrieval, visualization, and analysis, including advanced diagnostics that operate in the harsh ignition environment. The data generated by these diagnostics provides key information required for ignition and non-ignition SSP experiments. This subprogram also develops and deploys user optics to meet the needs of a broad range of experiments for ICF, HED, fundamental science and other national security applications.

Sequence



Benefits

Provides key capabilities required for experiments to study matter under extreme conditions at the HED facilities, including User Optics. The development of advanced diagnostics that operate in the harsh ignition environment is required to use ignition as a tool to support stockpile certification through verification of codes.

Funding and Activity Schedule

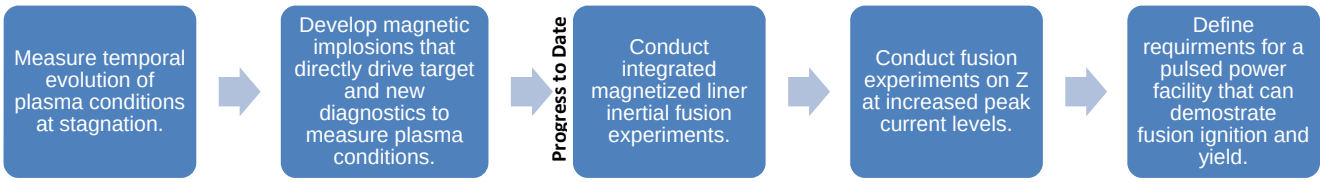
Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Installed and calibrated the first set of diagnostic systems required for the achievement of ignition on the NIF. • Assessed requirements for advanced NIF diagnostics beyond FY 2012, and selected new diagnostics for pre-conceptual designs to be evaluated in FY 2012. Four diagnostics were selected for accelerated development and implementation on the NIF in FY 2012 to assist in the ignition effort. • Design and construction of the NIF cryogenic target system complete.	**99,651**
FY 2012	• Complete the suite of diagnostics required for the NIF ignition campaigns. • The advanced diagnostic effort focuses on incorporating new techniques as they are developed and adding new capabilities as required. Pre-conceptual designs proposed in FY 2011 are evaluated and down-selected. • Experimental concepts tested on Omega. • Develop and activate the optical systems required to produce the spatial beam smoothing needed in ignition experiments and subsequent weapons physics campaigns, and integration and experimental commissioning of the NIF target area. Provide additional User Optics as required.	**85,654**
FY 2013	• Continue to develop advanced diagnostics that can operate in the harsh environment created by an igniting target. New techniques will be developed and new capabilities added to meet the needs of the SSP. Continued testing of advanced diagnostics on NIF, Omega, and Z. • Advanced cryogenic target system development and installation.	**81,942**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	• Ongoing development and procurement of Optical Systems required for supporting other subprograms.	
FY 2014-FY 2017	• Continuation of efforts from FY 2013.	**TBD**

Pulsed Power Inertial Confinement Fusion
Overview

The Pulsed Power Inertial Confinement Fusion subprogram funds computational target design, experiments, and experimental infrastructure to assess pulsed power as a means 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 robust ignition and high fusion yield. 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.

Sequence



Benefits

Provides an ignition alternative that has the potential to provide significantly higher yields than will be possible on the NIF. Supports the assessment of pulsed power as a means to achieve thermonuclear fusion in the laboratory, including computational target design, experiments, and experimental infrastructure. 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.

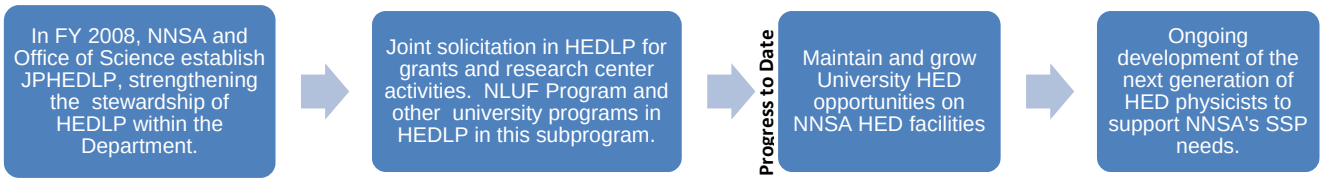
Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Focused efforts on developing magnetic implosions that directly drive the target. • Obtained spatially and temporally-resolved spectroscopic measurements of fusion plasmas to determine temporal evolution of the plasma conditions at stagnation.	**4,974**
FY 2012	• Continue to focus on using new diagnostics (such as neutron and x-ray imaging) to demonstrate consistent fusion plasma conditions for a variety of applications. • Continued development of magnetic implosions that directly drive the target.	**4,997**
FY 2013	• Develop new and improved diagnostics and techniques to measure the implosion dynamics, magnetic fields, and fuel conditions. • Compare accumulated data from magnetically-driven fusion experiments on Z with 3D radiation magnetohydrodynamic simulations. • Research to develop the capability to provide an initial axial magnetic field and laser preheat of the fuel for magnetized liner inertial fusion experiments on Z.	**6,044**
FY 2014-FY 2017	• Develop an improved experimental and computational understanding of the implosion dynamics and fuel behavior of magnetically-driven implosion. • Conduct integrated magnetized liner inertial fusion experiments. • Working on defining requirements for a pulsed power facility that can demonstrate robust ignition and high fusion yield.	**TBD**

Joint Program In High Energy Density Laboratory Plasmas
Overview

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 high-energy density physics 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.

Sequence



Benefits

Funds academic programs through a joint solicitation with DOE's Office of Science to steward the study of laboratory HED plasma physics and meet NNSA's goals through developing and maintaining a cadre of qualified researchers to support the needs of the SSP.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Up to 30 percent of the NIF, Omega, and Z facility time was devoted to basic HED science experiments. • Eleven university-based research teams performed basic HED science experiments on the Omega Laser Facility through National Laser User's Facility (NLUF) Program.	**3,992**
FY 2012	• Up to 30 percent of the NIF, Omega, and Z facility time to be devoted to basic HED science experiments. • Continuation of support for grants and research centers through JPHEDLP. Eleven university-based research teams perform basic HED science experiments on the Omega Laser Facility through NLUF. • Funding for the University of Nevada, Reno moved to this subprogram. • Joint NNSA/DOE (OFES) solicitation in support of basics HED research. Conduct solicitation for NLUF Program for funding and experimental time on Omega.	**9,100**
FY 2013	• Continued support of High Energy Density Laboratory Plasma research through solicitations to fund individual investigator and research centers activities. • Develop method and process for basic science support for experiments on other HED facilities, such as NIF and Z.	**8,334**
FY 2014-FY 2017	• Continuation of activities from FY 2013.	**TBD**

Facility Operations and Target Production
Overview

The operation of NNSA's HED facilities and target production support the goals of the ICF program to meet DOE's National Security needs. This subprogram funds operations of ICF facilities including NIF, Omega, and Z, to support the research needs of the ICF and Science subprograms to meet the stockpile assessment and certification needs. The facilities will be operated in a safe and secure manner. It supports fabrication of the very sophisticated targets required for related weapons physics experiments. It supports operations of the Trident facility at LANL and provides funding for support of the ICF program, including external reviews and funding support for users meetings such as the Omega Laser Facility Users Group and the NIF Users Group.

Sequence

Benefits

Provides the infrastructure and operations support for the ICF HED facilities that allow the ICF and Science Campaign subprograms to conduct the experiments needed to meet stockpile assessment and certification needs and broader goals of the SSP.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• At the Z facility at SNL, plutonium materials properties experiments resumed, a new load current record of 26.4MA was achieved and routine operation at 85kV Marx charge was demonstrated. • At NIF and Omega, shot operations supported ICF, HED supported the SSP, and basic HED science. • Conducted solicitation for ICF target development activities and develop solicitations for other target needs.	**259,682**
FY 2012	• Ongoing strong demand for ICF and SSP work on the NIF, Omega, and Z facilities. Funds for the Z experiments are also requested in the Science Campaign budget. • Provide support for facility improvements requested by Users or required for effective operations. Conduct solicitations for target needs. • Support for final optics inspections system and its associated optics conditioning, initiation and mitigation processes to increase the lifetime of NIF ultraviolet optics. • Support of the Campaign external reviews, support for facility users' group meetings, and NRL.	**265,173**
FY 2013	• Ongoing strong demand 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. • Operate NIF, Omega, Z, and Trident in a safe, secure, and efficient manner in accordance with their governance plans. • Provide support for facility improvements requested by Users or required for effective and/or more efficient operations. • Conduct target development and support for experiments on ICF facilities.	**264,691**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	• Continue support for final optics inspections system and its associated optics conditioning, initiation and mitigation processes to increase the lifetime of NIF optics. • Support of the Campaign external reviews and support for facility users group meetings.	
FY 2014-FY 2017	• Continuation of activities from FY 2013.	**TBD**

Capital Operating Expenses and Construction Summary
Capital Operating Expenses[a]

(dollars in thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Capital Operating Expenses			
General Plant Projects	0	0	0
Capital Equipment	4,455	4,553	4,653
Total, Capital Operating Expenses	**4,455**	**4,553**	**4,653**

Outyear Capital Operating Expenses

(dollars in thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request
Capital Operating Expenses				
General Plant Projects	0	0	0	0
Capital Equipment	4,755	4,860	4,967	5,076
Total, Capital Operating Expenses	**4,755**	**4,860**	**4,967**	**5,076**

[a] Funds are appropriated for Operations and Maintenance, which includes operating expenses, capital equipment and general plant projects. The program no longer budgets separately for capital equipment and general plant projects. Funding shown reflects estimates based on actual FY 2011 obligations.

Advanced Simulation and Computing Campaign
Funding Profile by Subprogram and Activity

	(Dollars in Thousands)		
	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Total, Advanced Simulation and Computing Campaign	**613,620**	**618,076**	**600,000**

Out-Year Funding Profile by Subprogram and Activity

The outyear numbers for Weapons Activities do not reflect programmatic requirements. Rather, they are an extrapolation of the FY 2013 request based on rates of inflation in the Budget Control Act of 2011. The Administration will develop outyear funding levels based on actual programmatic requirements at a later date.

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
Consolidated Appropriations Act, 2012 (P.L. 112-74)
National Defense Authorization Act for FY 2012 (P.L. 112-81)

Overview

The Advanced Simulation and Computing (ASC) Campaign provides leading edge, high-end simulation capabilities to meet the requirements of weapons assessment and certification, including weapon codes, weapons science, computing platforms, and supporting infrastructure. Our ability to model the extraordinary complexity of nuclear weapons systems is essential to establishing confidence in the performance of our aging stockpile. The ASC Campaign underpins the Annual Assessment of the stockpile, and is an integrating element of the Predictive Capability Framework (PCF).

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

Program Accomplishments and Milestones

In the prior appropriation year, ASC accomplished three significant milestones in program management and/or program development. These accomplishments include: 1) continued investment in a common computing environment across the weapon laboratories; 2) initial investment in the proposed joint Department of Energy (DOE) Office of Science/National Nuclear Security Administration (NNSA) Exascale Initiative; 3) closer coupling with Directed Stockpile Work (DSW) deliverables and the PCF.

Explanation of Changes

The $18.1M decrease between the FY 2012 Enacted and the FY 2013 Request is the net result of two programmatic adjustments. First, the program is going to complete the final year of the current Predictive Science Academic Alliance Program, but defer the follow-on program until FY 2014. Second, research and development activities supporting the development of future exascale-class systems will be constrained to a level that can be accommodated within the core program. This, together with the completion of the Sequoia procurement account for the overall reduction.

Program Planning and Management

The ASC, in conjunction with the DSW program and other Campaigns, validates its work and funding priorities. Clear alignment with NNSA and DOE strategic objectives is attained by developing and adhering to the program's strategy documents and alignment with the PCF. This process enables effective resource allocations and to consistently achieve its goal of funding the highest priority work and addressing near-term and out-year challenges using an enterprise solution approach amongst Defense Programs.

Strategic Management

The Department will implement through the ASC program, strategies to deliver integrated codes, physics and engineering models, verification and validation methods and assessments, computational systems and environments, and the necessary computing centers to meet stockpile commitments.

Three external factors present the strongest impact to the overall achievement of the programs strategic goal:

- Life Extension Program (LEP) count and schedule
- Industry technology roadmaps and business plans

- Acquiring, mentoring and retaining right-sized critical skills

Major Outyear Priorities and Assumptions

The outyear numbers for Weapons Activities do not reflect programmatic requirements. Rather, they are an extrapolation of the FY 2013 request based on rates of inflation in the Budget Control Act of 2011. The Administration will develop outyear funding levels based on actual programmatic requirements at a later date. Major Outyear Priorities and Assumptions will be delineated in that update.

Program Goals and Funding

The outyear numbers for Weapons Activities do not reflect programmatic requirements. Rather, they are an extrapolation of the FY 2013 request based on rates of inflation in the Budget Control Act of 2011. The Administration will develop outyear funding levels based on actual programmatic requirements at a later date. Program Goals and Funding will be delineated in that update.

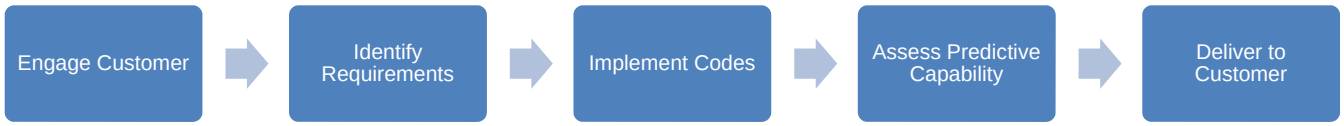
Explanation of Funding and/or Program Changes

	(Dollars in Thousands)		
	FY 2012 Enacted	FY 2013 Request	FY 2013 vs. FY 2012
Advanced Simulation and Computing Campaign			
Integrated Codes	**158,202**	**148,702**	**-9,500**
The decrease reflects the completion of the current Predictive Sciences Academic Alliances Program and deferral of the follow-on program to FY 2014.			
Physics and Engineering Models	**69,932**	**69,932**	**0**
No change.			
Verification and Validation	**57,232**	**57,232**	**0**
No change.			
Computational Systems and Software Environment	**159,697**	**151,121**	**-8,576**
This decrease reflects a planned reduction in funding associated with the completion of the Sequoia procurement.			
Facility Operations and User Support	**173,013**	**173,013**	**0**
No change.			
Total Funding Change, Advanced and Simulation and Computing Campaign	**618,076**	**600,000**	**-18,076**

Integrated Codes
Overview

Integrated codes contain the mathematical descriptions of the physical processes relating to nuclear weapon systems and describe what the nation knows about how nuclear weapons function. This subprogram funds the critical skills needed to develop, maintain and interpret the results of the large-scale integrated simulation codes that are needed for Stockpile Stewardship Program (SSP) maintenance, the Life Extension Programs (LEP), Significant Finding Investigation (SFI) resolution, and a host of related requirements, including transportation, dismantlements and forensics.

Sequence (Ongoing for ASC)



Benefits

- The ASC codes and computing infrastructure support DSW work such as design, analysis, baselining, and SFI resolution. Stockpile work, science and simulation are bound together through the Predictive Capability Framework (PCF).
- In the context of simulation, predictive capability can best be understood in contrast to baseline models that were carefully calibrated to the underground test results and which employed sophisticated approaches to interpolation within the underground data or minimal extrapolation from tested regimes. As long as the calculated configurations were close to the as-tested regime, one could be confident in the results. When refurbishment and aging are also included, the simulations must be able to provide accurate results for weapon behavior away from the baseline.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Demonstrated a weapons simulation on 64,000 processors, the largest simulation of its kind ever attempted • Implemented a magneto-hydrodynamics capability into a weapons code to facilitate validation via non-nuclear experiments • Implemented algorithms in an integrated weapons code on a heterogeneous architecture expected to represent future generations of supercomputers • Completed a set of high-resolution 3D calculations for code-to-code comparisons between the labs; results indicate resolution alone is not enough for accurate simulation • Implemented capabilities for engineering simulations that will correctly model the preload state of a weapon; this capability is critical for the next weapon life extension program • Developed new capability to more efficiently simulate the random vibration environment arising from atmospheric reentry	**168,559**
FY 2012	Ongoing user support • Training • Direct code usage support • Bug fixes Capability development • Deliver initial capability for effects from a low-yield urban nuclear event • Complete improvements in primary performance assessment code in support of • Level 1 milestone for early time initial conditions for boost • Begin improvements in primary performance assessment code in support of Level 1 milestone for late time initial conditions for boost	**158,202**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	Capability extension • Deliver parallel scalability enhancements in support of engineering LEP activities • Demonstrate scalability of nuclear performance codes to 100,000 processors • Complete re-factorization of transport code to take advantage of General Purpose Graphics Processing Units Skills accession • Maintain an ongoing mentoring program for early career staff • Participate in conclusion of Predictive Science Academic Alliance Program (PSAAP) Strategic research • Further refine the study of details of the thermonuclear burn process as it is relevant to simulation of weapon performance • Investigate improvements in hydrodynamic algorithms and multi-material treatments	
FY 2013	Ongoing user support • Training • Direct code usage support • Bug fixes Capability development • Complete improvements in primary performance assessment code in support of Level 1 milestone for late time initial conditions for boost • Begin improvements in nuclear performance assessment codes in support of Predictive Capability Framework (PCF) planned peg posts for boost and secondary performance • Begin improvements in safety and engineering assessment codes in support of out-year PCF planned peg posts Capability extension • Complete initial optimization of threading for homogeneous architectures • Deliver deterministic pre-conditioners to improve the performance of probabilistic calculations • Deliver improvements to support general domain-decomposed/replication hybrid parallelism Skills accession • Maintain an ongoing mentoring program for early career staff Strategic research • Investigate the use of higher-order finite element methods for various applications • Begin to evaluate options for treating physics time evolution	**148,702**
FY 2014-FY 2017	Ongoing user support • Training • Direct code usage support • Bug fixes Capability development • Deliver improvements in nuclear performance assessment codes in support of PCF planned peg posts for boost and secondary performance	**TBD**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	• Deliver improvements in safety codes to address multi-point safety issues in support of a PCF planned peg post • Deliver improvements in engineering assessment codes in support of PCF planned peg posts for normal environments and flight performance Capability extension • Deliver optimized threading capabilities for heterogeneous architectures • Deliver in-line capabilities for material property and diagnostic evaluations to reduce memory footprint • Develop capabilities for hierarchical memory access and enhance resilience Skills accession • Maintain an ongoing mentoring program for early career staff • Collaborate with PSAAP II centers on technical topics and staff recruitment • Participate in PSAAP II selection process and program start Strategic research • Investigate the utility and implementation of embedded uncertainty quantification tools • Develop mini-applications (mini-apps) in various areas to support future architecture efforts	

Physics and Engineering Models
Overview

Models are mathematical equations and tables that describe physical entities and processes; and are the vehicle by which new scientific understanding is written into the integrated codes. This subprogram funds the critical skills charged with the development, initial validation, and incorporation of new models into the Integrated Codes. Model development converts the results of theories and experiments into simulation capabilities and is inextricably linked to the Science Campaign.

Sequence (Ongoing for ASC)

Benefits

Provides the models and databases used in simulations supporting the US nuclear weapon stockpile. These models and databases describe physical and engineering processes occurring during the operation of a nuclear weapon. The capability to accurately describe 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.

Funding and Activity Schedule

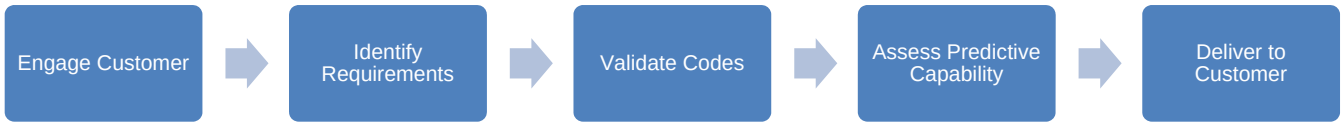
Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Delivered a new equation-of-state model crucial for simulation of safety calculations • Developed an advanced reactive flow model for insensitive high explosives burn at non-ambient temperatures • Demonstrated a prototype multi-phase equation-of-state capability for simulation of complex material hydrodynamics • Completed the assessment of prompt fission spectrum uncertainties for a critical weapons material • Completed assessment of ductile failure modeling methodologies for metals that will guide future investments • Developed next-generation compact models for circuit simulation in support of the Qualification Alternatives to the Sandia Pulsed Reactor project	**69,788**
FY 2012	DSW Support • Finish Level 1 Milestone advancing capabilities for annual assessment and resolution of significant finding investigations associated with early phase primary implosion. • Provide advanced high explosives models supporting certification for future LEPs and stockpile modifications. Material Properties • Deliver materials models required for maturation and certification of advanced safety technologies. • Deliver and assess the impact of new plutonium properties models to be used in annual assessment. Strategic Development • Provide capabilities required for assessing the impact of extreme radiation environments on weapon circuits without the use of the recently decommissioned Sandia Pulsed Reactor.	**69,932**

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2013	DSW Support • Provide mechanical/aerodynamic models enabling assessments and resolution of findings for stockpile delivery vehicles. • Deliver codes for improved treatment of equation of state in weapons regime and assess impact of improvements. Material Properties • As part of the National Boost Initiative, provide improved models for materials behavior governing the onset of boosting. • Use data from integrated plutonium experiments at Nevada to assess errors in current plutonium and high explosives models, and develop needed improvements. Strategic Development • Advance models needed for resolving significant finding investigations associated with secondary performance.	**69,932**
FY 2014-FY 2017	DSW Support • Use advanced theoretical models and results of experimental efforts in the Science Campaign to provide improved simulation capabilities for the fission process that governs energy generation in weapons. • In conjunction with efforts in the enhanced Surveillance Campaign and Science Campaign provide updated models for impact of plutonium aging and pit lifetime assessment updates. • Provide capabilities underpinning certification for the efficacy and impact on normal performance of two safety and security technologies. • Provide models for plasma formation and transport in neutron generators to enable improvements in lifetime assessments and manufacturing processes. Strategic Development • Develop predictive models for boost performance enabling continued assessment of primaries without the need for underground testing.	**TBD**

Verification and Validation
Overview

Verification and Validation (V&V) provides assurance that the models in the codes produce mathematically correct answers and that the answers 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 to 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, (NSE) it becomes increasingly important that the codes of the NSE are verified and validated so future generations of designers are comfortable relying on these foundational tools.

Sequence (Ongoing for ASC)



Benefits

Provides methods and measures necessary to assess the credibility of the ASC codes and models, quantify uncertainties in ASC calculation results, measure the progress in the ASC predictive capabilities, and provide confidence when applying simulations for stockpile deliverables.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Significantly enhanced the primary and secondary validation suites at both physics laboratories • Developed the first instantiation of common model-based nuclear test simulations for use in predictive capability assessment • Completed a study of uncertainty quantification for primaries with varying marginality; this study was the first full uncertainty quantification performed jointly for multiple nuclear test events • Extended the small scale experimental validation suite to include experiments with insensitive high explosive and other experiments relevant to the FY12 Level 1 milestone for early time boost initial conditions • Completed a comprehensive QMU assessment of thermal safety for a stockpile weapon system • Completed a verification and validation assessment of the simulation capability for electromagnetic environments, a critical qualification issue for reentry vehicles	**57,779**
FY 2012	On-going user support: • Training on the use of UQ tools. • Quality Assurance (QA) implementation. • Ensure material and nuclear databases are correctly updated and maintained. Verification and Validation • Complete verification and validation assessment of improvements in primary performance code in support of Level 1 milestone (initial conditions I for boost). • Begin outlining strategy to verify and validate improvements to primary performance code in support of Level I initial conditions II.	**57,232**

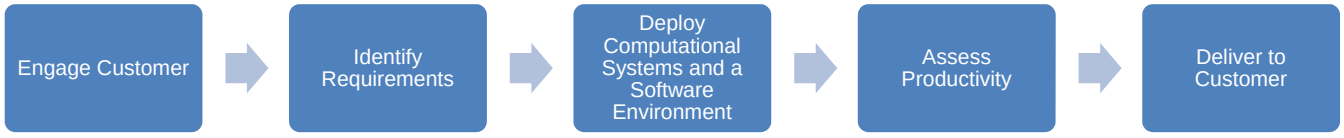
Fiscal Year	Activity	Funding (Dollars in Thousands)
	• Validate material and Pu models required to support certification of safety design options for refurbished weapons. • Provide technical support in validating models used to certify weapon systems under hostile environments in the absence of the Sandia Pulsed reactor. Predictive Capability Assessment: • Complete common modeling in support of the boost initiative. • Conduct initial assessment of calibrated predictive capability against system specific baseline models. • Complete validating primary common model against relevant datasets. • Complete validating secondary common model against relevant datasets. • Conduct sensitivity and safety studies in support of LEP work. UQ methods: • Complete participation with conclusion of PSAAP I activities. • Begin work on providing support to improve UQ methodology for use to support annual stockpile assessment activities.	
FY 2013	On-going user support: • Training on the use of UQ tools • QA implementation • Ensure material and nuclear databases are correctly updated and maintained. Verification and Validation: • Begin activities required to verify and validate improvements to primary performance code in support of Level I Initial Conditions for Boost II. • Begin verification and validation of improvements to assessment codes used in support of Level I Energy Balance II • Provide the support needed to validate improvements made to physics models used in modeling circuit responses to hostile environments. Predictive Capability Assessment: • Conduct initial assessment of un-calibrated science-based models against system specific models. • Improve the primary common model and validate the model against additional datasets. • Improve the secondary common model and validate the model against additional datasets. UQ methods: • Improve UQ method used in assessing the stockpile.	**57,232**
FY 2014-FY 2017	On-going user support: • Training on the use of UQ tools • QA implementation • Ensure material and nuclear databases are correctly updated and maintained. Verification and validation: • Complete verification and validation assessment activities in support of Level I initial conditions II. • Conduct and complete verification and validation assessment of radiation transport	**TBD**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	code in support of Level I Energy Balance II. • Complete verification and validation of the physics models used to certify LEPs under hostile conditions. Predictive Capability Assessment: • Complete initial benchmarking of science-based models against system specific models and identify recommendations for future investments to model improvements. • Build and improve the primary common model until the model has been validated against all relevant underground data sets. • Build and improve the secondary common model until the model has been validated against all relevant underground data sets. UQ methods: • Collaborate with PSAAP II centers on technical topics related to UQ methods and improvements. • Complete Level I UQ method in support of QMU analysis.	

Computational Systems and Software Environment (CSSE)
Overview

CSSE builds the computing systems needed for weapons simulations. Since the scale of the requirements of the ASC codes drives the program to 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 capability, capacity and advanced systems that the campaign fields, the supporting software infrastructure that is deployed on these platforms include many critical components, from system software, to Input/Output (I/O), storage and networking, post-processing visualization and data analysis tools, to common computing environments.

Sequence (Ongoing for ASC)



Benefits

Provides users of ASC computing resources a reliable and productive computing environment for all ASC-deployed platforms.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Performed advanced applications preparation work for Sequoia, including particular focus on threading, transactional memory (TM), and methods to exploit short vector floating point unit • Planned and executed a tri-lab procurement process for the next capacity tri-lab hardware platform; supported the systems software and tools on the current systems • Received an R&D 100 Award for the Stack Trace Analysis Tool (STAT), a highly scalable debugging technology that identifies process behavioral equivalence classes (received in collaboration with researchers at two universities) • Performed activities critical to Cielo deployment as a tri-lab user facility capability machine, including procurement, delivery, acceptance testing, and application readiness support • Developed mini-applications (mini-apps) as part of a new co-design through mini-apps effort for use as vehicles for exploring the challenges of next-generation computing technologies • Delivered visualization infrastructure enhancements, including the upgraded visualization cluster, Viewmaster 2, and visualization capabilities at distances not before reached (from the Strategic Computing Complex (SCC) to the National Security Sciences Building (NSSB)) • Received an NNSA Environmental Stewardship Award for prior-year's power-related research and development (R&D) • Collaborated to interactively explore the largest-ever adaptive mesh refinement (AMR) visualization using the CTH code, which consisted of 3 billion cells and 32 thousand files—data that was generated from a simulation run on Cielo • Expanded the capabilities of the Structural Simulation Toolkit (SST) suite with improved network congestion models; enhanced message passing interface (MPI) tracing, a new M5 processor simulator, more memory models, and several system technology models to analyze reliability, thermal, and energy usage • Released Tripod Operating System Software (TOSS) 1.4 (based on Red Hat Enterprise	**149,898**

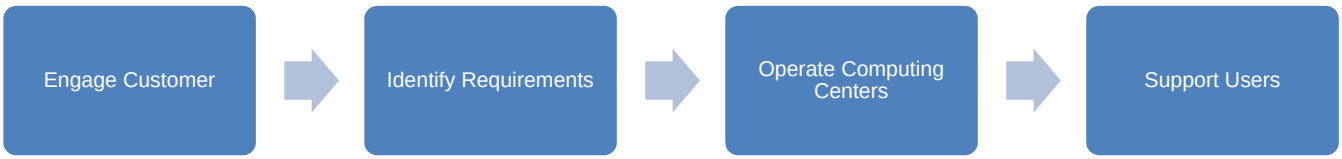
Fiscal Year	Activity	Funding (Dollars in Thousands)
	Linux (RHEL) 5.5) production version for general availability (GA) • Deployed Open|SpeedShop (O|SS) on all tri-lab production platforms and provided beta release of the framework targeted for scalability • Installed 1Gb networking infrastructure based on Interconnection Security Agreement (ISA) design and Memorandum of Understanding (MOU)	
FY 2012	Platform Operations • Continue deployment of Sequoia at LLNL • Continue operation of Cielo, and Roadrunner • Deploy Tri-Lab Linux Capacity Cluster TLCC2 systems • Retire BlueGene/L, Unclassified BlueGene uBGL, and TLCC1 systems Planning • Develop the mission need statement for ASC's next-generation advanced system as a replacement for Roadrunner Capability Development • Advance reliable, available, and secure environment for distance computing • Further development of computing environment consisted of user tools, networks, file system, archival storage, and visualization and data analysis. • Initiate the Hybrid Memory Cube (HMC) technology partnership to explore the optimization of HMC's performance and energy capabilities • Explore alternative computer technologies on scalability, reliability, packaging, and cost.	**159,697**
FY 2013	Platform Operations: • Operate Sequoia in General Availability mode • Continue operation of Cielo • Decommission of Roadrunner • Operate TLCC2 systems Planning • Complete CD-1/2/3 phases for ASC's next-generation advanced system as replacement for Roadrunner Capability Development • Advance reliable, available, and secure environment for distance computing • Further development of computing environment consisted of user tools, networks, file system, archival storage, and visualization and data analysis. • Continue oversight of the HMC partnership • Initiate other industrial partnerships to address critical Exascale R&D technology barriers	**151,121**

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2014-FY 2017	Platform Operations • Operate Sequoia • Continued operation of Cielo • Deployment of ASC's next-generation HPC systems • Operate TLCC2 systems Planning • Deploy and initiate operation of ASC's next-generation advanced system as replacement for Roadrunner Capability Development: • Advance reliable, available, and secure environment for distance computing • Further development of computing environment consisted of user tools, networks, file system, archival storage, and visualization and data analysis. • Continue oversight of the HMC partnership • Initiate other industrial partnerships to address critical Exascale R&D technology barriers	**TBD**

Facility Operations and User Support
Overview

This subprogram provides the facilities and services required to run nuclear weapons simulations around the clock. 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, and application analyst support.

Sequence (Ongoing for ASC)



Benefits

The Facility Operations and User Support subprogram provides the necessary physical facility and operational support for reliable production computing and storage environments, as well as a suite of services enabling effective use of ASC Tri-Laboratory computing resources.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Retired the Purple computer system and its associated file system, including degaussing and disposing of over 17,000 classified disk drives, as well as dismantling and disposing of more than 1,500 nodes and 200 racks; all trays and cable under the floor were also removed to clear space for Sequoia infrastructure • Completed Phase 1 planning for contingency response findings identified by the GAO. • Upgraded the facility control and monitoring system for the Terascale Simulation Facility (TSF) to improve resiliency and operation in preparation for Sequoia • Deployed an unclassified general-purpose computing on graphics processing units (GPGPU) cluster for hybrid programming investigation and production simulation; deployed a classified visualization cluster (Muir) in preparation for Sequoia visualization requirements • Engineered several security enhancements: 1) the HPC enclave is a network and system security implementation aimed at allowing sharing of expensive file system and archival storage resources among distinct user sets without compromising data security; 2) an additional one-time password service based on CRYPTOCard technology was quickly delivered when the RSA (part of EMC corporation) announced a token security issue; this will be used to further strengthen Enclave security; and 3) off-site disaster recovery backups now use tape encryption for increased security of data at rest and in transit • Under the New Mexico Alliance for Computing at Extreme Scale (ACES, with SNL), successfully completed Level 2 milestone 3952, Cielo capability computing platform integration readiness by delivering the Cielo platform and integrating it into the classified network, accrediting it for classified computing, completing Capability Computing Campaign 1 (CCC1); started CCC2 and upgraded to 1.37 petaFLOP/s; the computational environment usage model was developed, and it maps the Cielo capabilities to the tri-lab ASC Computing Environment (ACE) version 8.0 requirements • Deployed Typhoon, a 106 teraFLOP/s cluster with 13,312 processors, on the secure network for capacity workloads	**167,596**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	• Installed an automated power and temperature monitoring system that has contributed to achieving a Power Usage Effectiveness (PUE) rating of 1.3 at the SCC • Deployed Roadrunner with a proposal-based system similar to the CCC process for running the system at 60 percent for stockpile workloads and 40 percent for weapons science • Supported National Security computing needs (Cielo del Sur, Cray XE6 platform) and added additional file system and tape storage capacity to the National Security Computer Center (NSCC) • Retired the Red Storm computer system, transferred all data files to archive locations locally and remotely to LLNL and LANL, disposing of obsolete disk systems and redeploying many of the resources to support the NSCC mission	
FY 2012	User Support • Integrate TLCC2 systems • Provide analysis and software environment development • Help desks for ASC computers • Coordinate user training across user support sub-teams • Execute a strategy for a more persistent common computing environment for users to transition seamlessly between current production systems to future architectures • Support applications for large runs on Cielo, Dawn and other ASC platforms • Utilize Y12 and remote ASC cluster resources for production manufacturing problems Capability Deployment • Complete Phase 2 planning for contingency response findings identified by the GAO. • Enhance redundancy and reliability of electrical distribution systems to support future petascale and exascale system • Continue analysis of future modifications and/or expansion of facilities that will be needed by future ASC systems	**173,013**
FY 2013	User Support • TLCC2 system operations • Provide analysis and software environment development • Help desks for ASC computers • Execute a strategy for a more persistent common computing environment for users to transition seamlessly between current production systems to future architectures • Develop and initiate action plan to increase overall availability of compute cycles to end users Capability Deployment • Complete planning and exercise contingency response plans. • Deploy newer Panasas file system technology to replace aging technology and increase production capacity computing scratch file system capacity • Parallel File System deployments on Cielo, Roadrunner, Redtail, Hurricane, Typhoon, Yellowrail, Turin, Mapache, and the TLCC2 clusters for selected users. • Create initial design for NSCC expansion or alternative facility location based on site-wide National Environmental Policy Act limitations	**173,013**

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2014-FY 2017	User Support • TLCC2 system operations • Provide analysis and software environment development • Help desks for ASC computers • Execute a strategy for a more persistent common computing environment for users to transition seamlessly between current production systems to future architectures	**TBD**

Capital Operating Expenses and Construction Summary

Capital Operating Expenses[a]

(dollars in thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Capital Operating Expenses			
General Plant Projects	3,513	3,590	3,669
Capital Equipment	41,821	42,741	43,681
Total, Capital Operating Expenses	**45,334**	**46,331**	**47,350**

Outyear Capital Operating Expenses

(dollars in thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request
Capital Operating Expenses				
General Plant Projects	3,750	3,833	3,917	4,003
Capital Equipment	44,642	45,624	46,628	47,654
Total, Capital Operating Expenses	**48,392**	**49,457**	**50,545**	**51,657**

[a] Funds are appropriated for Operations and Maintenance, which includes operating expenses, capital equipment and general plant projects. The program no longer budgets separately for capital equipment and general plant projects. Funding shown reflects estimates based on actual FY 2011 obligations.

Readiness Campaign
Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Total, Readiness Campaign	**91,695**	**128,406**	**130,095**

Out-Year Funding Profile by Subprogram and Activity

The outyear numbers for Weapons Activities do not reflect programmatic requirements. Rather, they are an extrapolation of the FY 2013 request based on rates of inflation in the Budget Control Act of 2011. The Administration will develop outyear funding levels based on actual programmatic requirements at a later date.

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
Consolidated Appropriations Act, 2012 (P.L. 112-74)
National Defense Authorization Act for FY 2012 (P.L. 112-81)

Overview

The Readiness Campaign operates the capability for producing tritium to maintain the national inventory needed for the nuclear weapons stockpile and selects and matures production processes and technologies that are required for manufacturing components to meet DSW production requirements.

The Readiness Campaign mission is dedicated to investing in technologies that will be used in multiple weapon system applications, 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) 2013 and outyears are aligned with the National Nuclear Security Administration (NNSA) strategy, which is driven by the 2010 Nuclear Posture Review (NPR) direction and the Stockpile Stewardship and Management Plan program of record.

The Readiness Campaign coordinates investments, in parallel, with the Engineering and Science Campaigns to manage weapon technology and component maturation development activities in time to meet mission requirements. The Component Maturation Framework (CMF), a corollary process to the Predictive Capabilities Framework, provides a construct for the complex integration across programs and campaigns for maturing technologies and providing manufacturing capabilities for planned insertion of components into Life Extension Programs (LEPs), Limited Life Component Exchanges (LLCEs), Alterations (ALTs), and Modifications (Mods). Readiness Campaign planning also considers Readiness in Technical Base and Facilities (RTBF) facility acquisition schedules to coordinate selection and insertion of production capabilities to reduce facility lifecycle costs.

The tritium portion of the mission produces tritium for the stockpile and builds up the required production rate to meet national security needs. The Readiness Campaign coordinates with the Department of Defense (DoD) on determining Stockpile requirements, and provides annual updates to DoD on tritium production and inventory status. NNSA produces tritium by irradiating tritium-producing burnable absorber rods (TPBAR) in one or more nuclear power reactors operated by the Tennessee Valley Authority (TVA). Tritium is not consumed in the stockpile but radioactively decays at approximately 5.5% per year, requiring ongoing replenishment.

The Readiness Campaign relies upon the Office of Stockpile Materials to be responsible for establishing the life cycle management of nuclear and nonnuclear materials by identifying, assessing, and prioritizing material needs and availability for use in meeting strategic defense goals. Materials management identifies requirements and potential shortfalls as well as efficiencies and productivity improvements in material processing capabilities and supply chain needs that are required to support material and component production requirements. The Readiness Campaign program, through its interaction with the materials management organization, addresses deployment of technology development investments needed for such requirements.

Program Accomplishments and Milestones

In FY 2011, the Readiness Campaign completed the following:

(1) Completed two additional capabilities to a cumulative total of 27 by way of Advanced Inventory and Materials Management and Multi-Site Tester Architecture, which were immediately and urgently deployed to support Directed Stockpile Work (DSW) customer's nuclear weapon refurbishment needs derived from the Integrated Priority List (IPL).

(2) One capability, Collaborative Authorization for the Safety-basis Total Lifecycle Environment Weapons Response (CASTLE-WR), deployed to the stockpile programs will reduce cycle times by at least 35% (against baselined agility and efficiency) as well as provide a database which electronically facilitates standardized Safety Basis activities at the Pantex Plant and the Design Agencies.

(3) A cumulative total of 1,328 TPBARs were irradiated in TVA reactors to provide the capability of collecting new tritium to replace inventory.

Explanation of Changes

The overall increase for the Readiness Campaign is request is $1.7M or 1.3%. This is mainly Tritium Readiness which is driven by fluctuating production costs at TVA and capital projects for control system updates at the Tritium Extraction Facility (TEF).

Program Planning and Management

The Readiness Campaign, in conjunction with the Directed Stockpile Work program, validates its work and funding priorities, which facilitates clear alignment with NNSA and DOE strategic objectives. By engaging in semi-annual, bottom-up reviews of its work across the Future Years Nuclear Security Program (FYNSP), process for allocating resources consistently achieving its goal of funding the highest priority work and addressing near-term and out-year challenges using an enterprise solution approach amongst Defense Programs.

Strategic Management

The NNR subprogram deploys manufacturing technologies required to meet scheduled first production units and sustained production for the short and long term. Focusing on critical nonnuclear manufacturing technologies that will be deployed in three to five years ensures that the enterprise can manufacture all of the components required for the "first use" LEP as well as future LEPs, LLCEs, ALTs, and Mods.

The Non-nuclear readiness (NNR) subprogram provides the nonnuclear production readiness activities that will allow future manufacturing technologies to be ready for the next insertion point as identified through the CMF. All component requirements from DSW for LLCEs and LEPs need to be met to assure a robust component design, development and production enterprise. As an enabler for the CMF, the NNR subprogram offers resources for the pacing elements for nonnuclear component production.

One major objective of the Tritium Readiness subprogram is to maintain the tritium supply chain by managing a combination of commercial suppliers and vendors, and in-house infrastructure. The combination of commercial and in-house resources provides best value to the government, but only utilizing strictly in-house resources has unique challenges. Strategic management in this context means providing a stable and reliable supply chain, where the underlying infrastructure is subject to the rules, regulations, and variability of the commercial market. Where in-house resources are used, strategic management challenges include maintaining a unique, yet cost effective, base program.

The other major objective of the subprogram is to produce tritium. The amount of tritium to be produced is determined after accounting for all available tritium within the Nuclear Security Enterprise. Although the Tritium Readiness subprogram does not fund the recycling of tritium from retired and dismantled weapons, and other sources, it does account for this material when determining the required amount to be produced. Thus, strategic management includes adjusting tritium production as required to meet national security needs to maintain required tritium inventories, and determining if adjustments are needed in the supply chain.

The Tritium Readiness subprogram must be able to adjust the supply chain to changes in requirements as well as be able to adjust for dependencies and variances, in both schedules and resources, associated with managing various suppliers. These suppliers however are driven by market conditions, so the program must be able to adjust accordingly. Thus, strategic program management needs to remain forward looking, identify changes and decision points necessary to maintain the

supply chain and meet required tritium production needs.

Currently, the program is managing several technical and programmatic challenges, but has sufficient existing capacity available to meet production requirements. Program execution plans provide timelines and required resources to meet the challenges along with the required production needs. The program has 544 TPBARs, in TVA's Watts Bar Unit 1 reactor, up from 240 TPBARs in the previous reactor cycle, thus meeting it's defined near term milestones and objectives. The program continues to balance resource constraints and look for opportunities to provide best overall value to the government. Recent program changes have resulted in curtailing some planned research and development efforts necessary to support future production capabilities. The balance of resources must take into consideration the need to maintain capabilities for a safe, reliable, and well managed supply chain while being able to adapt to potential changes in tritium requirements.

It should be mentioned that helium (He-3) is a by-product of tritium decay. The material is important for Homeland Security purposes. Although the program is not responsible for maintaining helium supplies, it does forecast the availability of this material and tries to optimize operations, where possible, to provide the material for government use as well as commercial uses.

Major Outyear Priorities and Assumptions

The outyear numbers for Weapons Activities do not reflect programmatic requirements. Rather, they are an extrapolation of the FY 2013 request based on rates of inflation in the Budget Control Act of 2011. The Administration will develop outyear funding levels based on actual programmatic requirements at a later date. Major Outyear Priorities and Assumptions will be delineated in that update.

Program Goals and Funding

The outyear numbers for Weapons Activities do not reflect programmatic requirements. Rather, they are an extrapolation of the FY 2013 request based on rates of inflation in the Budget Control Act of 2011. The Administration will develop outyear funding levels based on actual programmatic requirements at a later date. Program Goals and Funding will be delineated in that update.

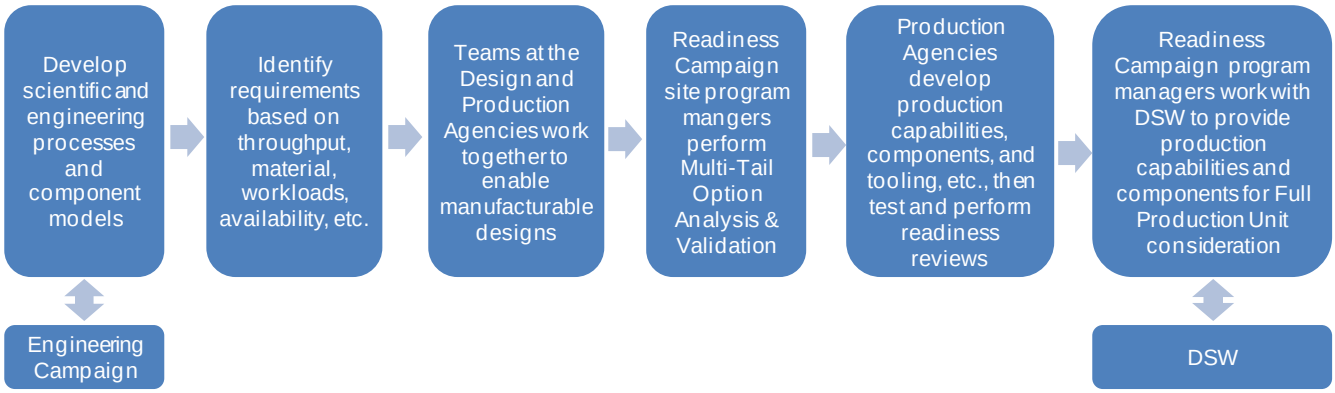
Explanation of Funding and/or Program Changes

	(Dollars in Thousands)		
	FY 2012 Enacted	FY 2013 Request	FY 2013 vs. FY 2012
Readiness Campaign			
Nonnuclear Readiness	**64,931**	**64,681**	**-250**
This minor change reflects planned program outputs for multi-weapon system component manufacturing capabilities contributing to future LEPs, LLCEs, ALTs, and Mods.			
Tritium Readiness	**63,475**	**65,414**	**+1,939**
The Tritium Readiness Program change is a function of an 18-month reactor cycle for the required fabrication of TPBARs, irradiation services (including reactor fuel at TVA), operation of the TEF (including one tritium extraction), production support of nuclear reactor operations completion of a Supplemental Environmental Impact Statement, disposal of radioactive parts from TVA, and program technical support.			
Total Funding Change, Readiness Campaign	**128,406**	**130,095**	**+1,689**

Nonnuclear Readiness
Overview

The Nonnuclear Readiness (NNR) subprogram develops and deploys multi-system weapon component manufacturing capabilities. This subprogram deploys the product development and production capabilities required to support nonnuclear product requirements for use in multiple weapon system applications that are common across the Nuclear Security Enterprise. Nonnuclear functions range from weapon command and control to examining performance during deployment simulations, including various weapon structural features.

Sequence and Integration Points



Benefits

The NNR modernizes manufacturing processes and facilities and develops the technologies necessary to deploy new or reproduced neutron generators, tritium reservoirs, detonators, component testers, and other nonnuclear components capabilities required to support the first LEP user as well as future LEPs, LLCEs, ALTs, and Mods.

Funding and Activity Schedule

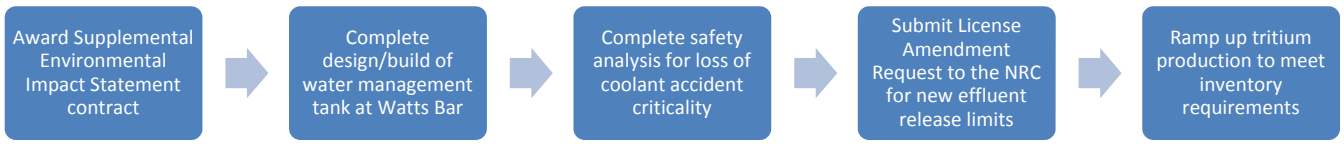
Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Completed two additional capabilities to a cumulative total of 27 by way of Advanced Inventory and Materials Management and Multi-Site Tester Architecture, which were immediately and urgently deployed to support the DSW customer's nuclear weapon refurbishment needs derived from the Production Readiness Assessment Plan. • Deployed one capability, Collaborative Authorization for the Safety-basis Total Lifecycle Environment Weapons Response (CASTLE-WR), to the stockpile programs. This capability will reduce cycle times by at least 35% (against baselined agility and efficiency) as well as provide a database which electronically facilitates standardized Safety Basis activities at the Pantex Plant and the Design Agencies.	**21,825**
FY 2012	• Address production readiness requirements and scope associated with down-select of technologies as a result of expected Nuclear Weapons Council Phase 6.3 approval for the B61 LEP. • Mature manufacturing technologies to support manufacture of limited life components (e.g. Gas Transfer Systems and Electronic Neutron Generators) for all LLCEs such as the B83 and the B61 LEP. • Mature electrical component manufacturing for Joint Test Assembly telemetry, detonators, switches, and radars for future weapon systems. • Focus on maturation of manufacturing capabilities for major component assemblies, subsystems and systems that are necessary to meet safety, security, and reliability	**64,931**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	goals for the nuclear stockpile and required by future LEPs, ALTs, and Mods.	
FY 2013	• Continue to address production readiness requirements and scope associated with down-select of technologies for the B61 LEP. • Address production readiness requirements associated with batteries and electrical components for the W88 ALT. • Continue maturation of manufacturing technologies to support the manufacture of limited life components (e.g. Gas Transfer Systems) for the B61 and W78 LEPs and all other LLCEs. • Continue to mature component manufacturing capability for nonnuclear components required for future weapon systems. • Continue focus on maturation of manufacturing capabilities for major component assemblies, subsystems and systems that are necessary to meet safety, security, and reliability goals for the nuclear stockpile and required by future LEPs, ALTs, and Mods.	**64,681**
FY 2014-FY 2017	• Continue to address production readiness requirements and scope associated with the B61 LEP and W88 ALT. • Continue to mature component manufacturing capability for nonnuclear components required for future weapon systems. • Continue to focus on maturation of manufacturing capabilities for major components for assemblies, subsystems and systems that are necessary to meet safety, security, and reliability goals for the nuclear stockpile and required by future LEPs, ALTs, and Mods.	**TBD**

Tritium Readiness
Overview

The Tritium Readiness subprogram operates the Departmental capability for producing tritium to maintain the national inventory needed for the nuclear weapons stockpile. 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 for increasing the effluent release limit at Watts Bar Unit 1, with a contingency option to use TVA's Sequoyah Unit 1 and 2 reactors to meet tritium production requirements specified in the Nuclear Weapons Stockpile Plan signed annually by the President.

Sequence



Benefits

Tritium Readiness maintains the tritium production capability to sustain the nuclear weapons stockpile. The Tritium Readiness subprogram funds all of the activities, including the Tritium Extraction Facility costs, associated with the production of tritium to meet all Defense Programs demands for tritium.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Completed irradiation of 240 TPBARs in Cycle 10 at TVA's Watts Bar and began irradiation of 544 TPBARs in Cycle 11, covered by prior year funds. • Awarded contract for Supplemental Environmental Impact Study to provide basis for TVA's license request to the NRC for increased TPBAR production quantities. • Participated in TVA procurement actions for 500,000 gallon tritiated water management tank at Watts Bar Nuclear Reactor1 for timed releases of effluent to the Tennessee River to meet NRC licensing requirements. • Conducted one extraction at the TEF and maintained Responsive Operations mode to reduce operating costs, supplemented by de-obligation of $7.1M from TPBAR transportation contract. • Completed design of test train for in-reactor evaluation of time-phased release of tritium from lithium-aluminate pellets. • Conducted Post Irradiation Examinations of Cycle 9 TPBARs and samples from previous on-reactor tests, supplemented by de-obligation of $6.8M from the multi-year contract for TPBAR fabrication.	**29,811**
FY 2012	• Provide engineering management and irradiation fees to TVA to complete irradiation of 544 TPBARs in Cycle 11 at WBN1. • Provide settlement of TVA claim of $3M for fuel problems at Sequoyah reactors attributed to tritium production agreements. • Award design-build contract for 500,000 gallon holdup tank to assist with timing of reactor coolant system water releases to the Tennessee River, supplemented by funds de-obligated from the TPBAR component contracts. • Purchase reactor fuel for Cycle 12 at WBN1 and pay enrichment price differentials for maintaining unrestricted reactor fuel at three reactors. • Formulate a contingency plan for insertion of TPBARs into Sequoyah Units 1 and 2,	**63,475**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	with 48 months notice, in case production at Watts Bar is interrupted. • Provide technical production support to the TVA operation by the design authority to ensure sufficient technical oversight. • Conduct knowledge preservation for in-reactor pellet performance testing cancelled due to fiscal constraints. • Maintain the TEF in Responsive Operations mode and conduct one TPBAR extraction, plus capital projects for design of a direct stacking capability for TEF waste gases formerly piped to the Tritium Loading Facility. • Continue conducting Supplemental Environmental Impact Statement to support TVA licensing for increasing TPBAR irradiation quantities that must be approved by the NRC before irradiation increases. • Fabricate 544 TPBARs for delivery to WBN1 for Cycle 12 irradiation. • Provide transportation for irradiated TPBARs to the TEF, supported by prior year funds on a multi-year contract. • Continue to direct resources to optimize the life-cycle management of tritium to meet other national security needs.	
FY 2013	• Pay irradiation fees and excess uranium fuel costs for 544 TPBARs in Watts Bar Unit 1 in Cycle 12. • Provide settlement of potential TVA claims from foreign equipment procurements where low cost foreign suppliers will not bid on reactors associated with tritium production. • Reimburse TVA for enrichment price differential for providing unrestricted enrichment for Sequoyah Unit 1 (SQN1) reactor. • Provide technical production support and surveillance to the TVA operation by the design authority to ensure technical oversight in support of TVA and NRC requirements. • Maintain the TEF in Responsive Operations mode, conduct one TPBAR extraction activity, and conduct high priority maintenance and equipment upgrades. • Complete the Supplemental Environmental Impact Statement and issue Record of Decision to support TVA licensing for increasing TPBAR irradiation quantities that must be approved by the NRC and provide technical and management support. • Provide commercial transportation of the irradiated TPBARs from TVA to the TEF for post irradiation examinations and to transport baseplate waste for disposal. • Continue to direct resources to optimize the life-cycle management of tritium to meet other national security needs.	**65,414**
FY 2014-FY 2017	• Continue fabrication and irradiation of TPBARs at maximum rates supported by available funding through FY 2017. • TVA submits license amendment request to the NRC to provide increased future production. • Restart TPBAR component vendors to support out-year production increases required to offset delay in tritium inventory for the stockpile.	**TBD**

Capital Operating Expenses and Construction Summary

Capital Operating Expenses[a]

(dollars in thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Capital Operating Expenses			
General Plant Projects	0	0	0
Capital Equipment	10,246	10,471	10,701
Total, Capital Operating Expenses	**10,246**	**10,471**	**10,701**

Outyear Capital Operating Expenses

(dollars in thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request
Capital Operating Expenses				
General Plant Projects	0	0	0	0
Capital Equipment	10,936	11,177	11,423	11,674
Total, Capital Operating Expenses	**10,936**	**11,177**	**11,423**	**11,674**

Major Items of Equipment (MIE)

(dollars in thousands)

	Type	Total	Prior-Year Appro-priations	FY 2011 Current	FY 2012 Enacted	FY 2013 Request	Unappro-priated Balance	Completion Date
Microwave Deployment, Y-12 National Security Complex	TPC	19,374	16,492	2,882	0	0		FY 2012
	TEC	15,613	13,831	1,782	0	0		
	OPC	3,761	2,661	1,100	0	0		
Total, Major Items of Equipment				**5,764**	**0**	**0**		

[a] Funds are appropriated for Operations and Maintenance, which includes operating expenses, capital equipment and general plant projects. The program no longer budgets separately for capital equipment and general plant projects. Funding shown reflects estimates based on actual FY 2011 obligations.

Readiness in Technical Base and Facilities
Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Readiness in Technical Base and Facilities			
Operations of Facilities	1,255,307	1,281,847	1,419,403
Program Readiness	69,736	73,962	0
Material Recycle and Recovery	77,493	77,780	0
Containers	27,820	28,892	0
Storage	23,945	31,196	0
Nuclear Operations Capability Support	0	0	203,346
Science Technology and Engineering Support	0	0	166,945
Subtotal, Operations and Maintenance	**1,454,301**	**1,493,677**	**1,789,694**
Construction	388,218	511,108	450,134
Total, Readiness in Technical Base and Facilities	**1,842,519**	**2,004,785**	**2,239,828**

Out-Year Funding Schedule by Subprogram and Activity

The outyear numbers for Weapons Activities do not reflect programmatic requirements. Rather, they are an extrapolation of the FY 2013 request based on rates of inflation in the Budget Control Act of 2011. The Administration will develop outyear funding levels based on actual programmatic requirements at a later date.

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
Consolidated Appropriations Act, 2012 (P.L. 112-74)
National Defense Authorization Act for FY 2012 (P.L. 112-81)

Overview

The Readiness in Technical Base and Facilities (RTBF) Program provides state-of-the-art facilities and infrastructure equipped with advanced scientific and technical tools to support national security operational and mission requirements for the National Nuclear Security Administration (NNSA). The RTBF Program accomplishes this mission by achieving the following goals: operate and maintain the nuclear security enterprise program facilities in a safe, secure, efficient, reliable, and compliant condition; provide facility operating costs for utilities, equipment, maintenance and environment, safety, and health (ES&H); maintain critical skills through personnel, training and development; and plan, prioritize, and construct state-of-the-art facilities, infrastructure, and scientific tools within approved baseline costs and schedule.

Program Accomplishments and Milestones

In the FY 2011 appropriation year, RTBF supported the national security operational and mission requirements in a number of ways.

Accomplishments include: 1) The Nevada National Security Site (NNSS) completed the first critical experiment at the National Criticality Experiments Research Center (NCERC); 2) Savannah River Site (SRS) completed the fabrication of the first Bulk Tritium Shipping Package; 3) Lawrence Livermore National Laboratory (LLNL) is ahead of their de-inventory schedule, having completed packaging of 96% of planned Special Nuclear Materials (SNM) with 93% shipped off-site; 4) NNSS completed the Operational Readiness Review at the Joint Actinide Shock Physics Experimental Research (JASPER) facility; 5) Sandia National Laboratories (SNL) Primary Standards Laboratory received the National Voluntary Laboratory Accreditation Program (NVLAP) reaccreditation; 6) NNSA prepared and executed a cooperative agreement with the French CEA and began the preliminary design of the facility and systems (DE-NA0000907, "Feasibility Study for MIDAS Project) to initiate the US-France collaboration on the Valduc Criticality Safety Facility Refurbishment/ Utilization program; 7) Kansas City Plant (KCP) awarded over $100,000,000 in contracts for relocation to the

Kansas City Responsive Infrastructure Manufacturing and Sourcing (KCRIMS) facility; 8) Y-12's Highly Enriched Uranium Materials Facility (HEUMF) Transition Program continued moving qualified materials from long-term storage areas in production facilities to HEUMF; 9) Completed and approved CD-4 for the Beryllium Capability Project at Y-12; 10) Completed and approved CD-4 for the Criticality Experiments Facility Project at the NNSS; 11) Completed the Ion Beam Laboratory Project at SNL; and 12) Established a revised performance baseline for the High Explosives Pressing Facility at Pantex (PX) and awarded a construction contract.

Explanation of Changes

The Department requests $2,239,828 in Fiscal Year 2013 for Readiness in Technical Base and Facilities, which is an 11.7 percent increase over the FY 2012 Enacted Appropriation.

The FY 2013 request increases the levels for Operations of Facilities (+$137,556) or 10.7%; Science, Technology and Engineering Capability Support (+$166,945); Nuclear Operations Capability Support (+$ 203,346); and reduces the levels for Program Readiness (-$73,962); Material Recycle and Recovery (-$77,780); Containers (-$28,892); Storage (-$31,196); and Construction (-$60,974).

Among other reasons described in the sections to follow, the Operations of Facilities increase of 10.7% includes new sustainment initiatives, full operations of new and existing facilities, and addresses infrastructure deficiencies across the complex. Specifically, it will include activities such as: Tritium Responsive Infrastructure Modifications (TRIM) which will reduce footprint, improve facility condition, and reduce energy usage at the Savannah River Site; recapitalization of Silicon Fabrication Facility at SNL, required to support the W88 ALT, W76 LEP and B61 LEP; full-year radiological operations of the Radiological Laboratory/Utility/Office Building (RLUOB) at LANL; and full operations at the National Criticality Experiments Research Center (NCERC) and Joint Actinide Shock Physics Experimental Research (JASPER) facility at NNSS.

In recognition of the complex and interdependent nature of the nuclear security enterprise and the infrastructure that underpins it, RTBF has proposed a modified budget structure that will allow for greater management responsiveness and provide more descriptive and accurate activity titles. The first change combines activities that are focused on supporting and maintaining science, technology, and engineering capabilities (both existing and those that are required to support evolving program needs) into a single subprogram called Science Technology and Engineering Capability Support. The second, reciprocal, change is to combine activities that are focused on support of day-to-day nuclear operations (but are not program-specific) into a single subprogram called Nuclear Operations Capability Support. The structure and focus of the subprogram for Operations of Facilities continues, but the Institutional Site Support (ISS) subprogram has been eliminated. The focus of the Construction subprogram is unchanged.

Specifically, the new Science, Technology, and Engineering Capability Support subprogram combines the current Program Readiness subprogram, Capability-Based Facilities and Infrastructure (CBFI), described in more detail below) and a portion of ISS, while the new Nuclear Operations Capability Support subprogram is comprised of the current Material Recycle and Recovery, Containers, and Storage subprograms and the remainder of ISS. The following sections of this budget request are aligned with the new structure.

NNSA has designed CMRR Nuclear Facility for the following stockpile missions: plutonium chemistry, plutonium physics, and storage for special nuclear materials. Construction has not begun on the CMRR Nuclear Facility. NNSA has determined, in consultation with the national laboratories, that existing infrastructure in the nuclear complex has the inherent capacity to provide adequate support for these missions. Therefore, NNSA proposes deferring CMRR Nuclear Facility construction for at least five years. Studies are ongoing to determine long-term requirements. NNSA will maximize use of existing facilities and relocate some nuclear materials. Estimated cost avoidance from FY 2013 to FY 2017 totals approximately $1.8 billion.

Program Planning and Management

The RTBF program will continue to institutionalize responsible and accountable corporate facilities management processes. RTBF is developing a Capabilities and Infrastructure framework that will describe how facilities and infrastructure supports key program capabilities over the longer term. In addition, RTBF is working with the field to transform Ten-Year Site Plans into Twenty-Five Year Site Plans, which will generate strategic infrastructure information for the Stockpile Stewardship and Management Plan.

Strategic Management

The RTBF program has implemented a number of management strategies which will ensure that the nuclear security enterprise facilities and infrastructure

are managed safely, efficiently and reliably. Facility and infrastructure management requires a balanced approach between robust sustainment of existing infrastructure and the replacement/refurbishment of inefficient and unreliable facilities with new construction.

In sustaining existing infrastructure, RTBF provides capabilities, facility operations and maintenance to ensure that base operations are available to execute the program of record. The program will continue to manage risk to existing infrastructure through various strategies, including: prioritization of operations and maintenance at mission critical and mission dependent facilities across the complex; execution of operating funded projects internal to each site; and CBFI, an enterprise-wide, program-informed investment approach to ensure infrastructure is in place to execute program workload.

The recapitalization and replacement of aging infrastructure is largely accomplished through the RTBF Construction subprogram including management and acquisition of capital assets. The Construction subprogram annually evaluates proposed projects that support the mitigation of identified infrastructure risks to mission functions. The ranking and consolidation of these projects results in an enterprise-wide priority list, of which the near-term projects are of the highest priority and are usually in more advanced stages of project development, in accordance with DOE Order 413.3B, *Program and Project Management for the Acquisition of Capital Assets*.

Major Outyear Priorities and Assumptions

The outyear numbers for Weapons Activities do not reflect programmatic requirements. Rather, they are an extrapolation of the FY 2013 request based on rates of inflation in the Budget Control Act of 2011. The Administration will develop outyear funding levels based on actual programmatic requirements at a later date. Major Outyear Priorities and Assumptions will be delineated in that update.

Program Goals and Funding

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Explanation of Funding and/or Program Changes

	(Dollars in Thousands)		
	FY 2012 Enacted	FY 2013 Request	FY 2013 vs. FY 2012
Operations of Facilities			
· **Kansas City Plant**	**155,759**	**163,602**	**+7,843**
The increase is to continue operating the current Bannister Road facility, while transitioning into and commissioning the new Botts Road facility. This includes the relocation of equipment and personnel as laid out in the Kansas City Responsive Infrastructure Manufacturing and Sourcing (KCRIMS) transformation plan.			
· **Lawrence Livermore National Laboratory**	**83,744**	**89,048**	**+5,304**
The increase is to provide base support for operations of nuclear facilities post de-inventory of the Superblock facility, including an increase in waste processing, handling, and off-site shipments. The increase provides infrastructure support of Stockpile Stewardship mission requirements (e.g. the W78 LEP), which include an increase in radiochemistry operations and pit research and development activities. Funding also supports increased operational pace at Site 300 in support of Stockpile Stewardship and Science, Technology, and Engineering activities.			
· **Los Alamos National Laboratory**	**317,592**	**335,978**	**+18,386**
The increase is to provide full-year radiological operations of the Radiological Laboratory/Utility/Office Building (RLUOB), increased Radioactive Liquid Waste operations and strategies within TA-50, and support closure of Area G. Specifically, this will increase support in the processing of stored and newly generated TRU waste in order to remediate and close Area G on schedule.			
· **Nevada National Security Site**	**97,273**	**115,697**	**+18,424**
The increase is to provide base support for operations of the full suite of Stockpile Stewardship mission requirements while concurrently maintaining experimental capabilities. Safety upgrades in the Device Assembly Facility (DAF) (e.g. fire protection, HEPA systems, penetrations, etc.) are supported by this increase as well as improvements to the DAF safety analysis that will support mission efficiency. In addition, the increase supports full operational capability at the National Criticality Experiments Research Center (NCERC) and full operations of the Joint Actinide Shock Physics Experimental Research (JASPER) facility.			

	(Dollars in Thousands)		
	FY 2012 Enacted	FY 2013 Request	FY 2013 vs. FY 2012
· **Pantex Plant**	**164,365**	**172,020**	**+7,655**
The increase is to provide for additional corrective maintenance to address degrading and aging infrastructure in support of the increased surveillance, LEP and dismantlement activities. The funds will address High Explosive facility sustainment, conclude flood recovery efforts, and address emerging and urgent maintenance issues associated with the facilities and infrastructure.			
· **Sandia National Laboratories**	**120,354**	**167,384**	**+47,030**
The increase supports the requirements of base operations at the site to support the B61 LEP, W88 ALT, and the W78 LEP. This increase funds a portion of the essential Silicon Fabrication retooling, such as replacement of the outdated photolithography system required to support the LEPs. The funds also support the recapitalization of the Tonopah Test Range, and support essential capabilities in microsystems and radiation hardness, engineering, and material sciences.			
· **Savannah River Site**	**97,480**	**120,577**	**+23,097**
The increase in funding supports the initial projects related to Tritium Responsive Infrastructure Modifications (TRIM), which will result in right-sized operations, relocation into existing modern facilities, and the centralization of operations control.			
· **Y-12 National Security Complex**	**245,280**	**255,097**	**+9,817**
The increase reflects needed base funding to support continued operations and will allow some investments in maintenance of aging infrastructure. Consistent with the plan to construct Uranium Processing Facility and transition operations from Building 9212, the remaining production facilities will require increased sustainment investments. Specifically, the increase provides for additional critical spare parts.			
Total, Operations of Facilities	**1,281,847**	**1,419,403**	**+137,556**
Program Readiness	**73,962**	**0**	**-73,962**
Activities have been transferred to the Science, Technology and Engineering Capability Support subprogram.			

	(Dollars in Thousands)		
	FY 2012 Enacted	FY 2013 Request	FY 2013 vs. FY 2012
Material Recycle and Recovery	**77,780**	**0**	**-77,780**
Activities have been transferred to the Nuclear Operations Capability Support subprogram.			
Containers	**28,892**	**0**	**-28,892**
Activities have been transferred to the Nuclear Operations Capability Support subprogram.			
Storage	**31,196**	**0**	**-31,196**
Activities have been transferred to the Nuclear Operations Capability Support subprogram.			
Science, Technology and Engineering Capability Support	**0**	**166,945**	**+166,945**
This subprogram includes the transfer of Program Readiness activities, projective activities for Nuclear Safety Research and Development, and a portion of activities previously conducted under Institutional Site Support. In addition to transfers of scope, the increase includes funding for the Sandia Primary Standards Lab, increased support for the Nuclear Criticality Safety Program's collaboration with France, and increased funding to acquire and maintain critical skills. The increase also supports the Capabilities Based Facilities and Infrastructure (CBFI) initiative.			
Nuclear Operations Capability Support	**0**	**203,346**	**+203,346**
This subprogram includes the transfer of Material Recycle and Recovery, Containers, Storage and a portion of activities previously conducted under Institutional Site Support. In addition to transfers of scope, increases at LANL support the accelerated de-inventory and consolidation of nuclear materials at the PF-4 vault. Capabilities at Y-12, SRS, Nevada and other facilities are also required to support processing and storage as well as resources for packaging, transportation and waste disposal of PF-4 vault materials. Alternatives for accelerated processing and storage of materials will also be evaluated. Increases will support full requirements for HEU metal production, deployment of new processing equipment for HEU purification, including an Electro-refining Cell, equipment upgrades at the Oxide Conversion Facility, and implementation of facility risk reduction activities that support both HEU and Lithium production at Y-12.			

	(Dollars in Thousands)		
	FY 2012 Enacted	FY 2013 Request	FY 2013 vs. FY 2012
The increase will also support non-nuclear material disposition activities and increased capabilities to perform characterization activities on legacy components in storage, primarily in new pit surveillance techniques using High Resolution Computed Tomography at Pantex.			
Total, Operations and Maintenance	**1,493,677**	**1,789,694**	**+296,017**
Construction	**511,108**	**450,134**	**-60,974**
Funding in FY 2013 will support several key Construction projects at the identified sites. The overall change reflects a deferral of the Chemistry and Metallurgy Research Replacement (CMRR) Nuclear Facility at LANL and the increase associated with accelerating construction of the Uranium Processing Facility at Y-12. At LANL, requested funding will support planned scope for the TA-55 Reinvestment Project Phase II, and the Transuranic (TRU) Waste Facility Project. No funding is requested for the CMRR-NF project. At LLNL, requested funding will support the new Electrical Infrastructure Upgrade Project. At Y-12, requested funding will accelerate planned construction of the UPF Project and complete construction of the Nuclear Facility Risk Reduction Project. At Pantex, requested funding will complete the High Explosive Pressing Facility (HEPF) Project. At the Sandia National Laboratories, requested funding will complete construction of the Test Capabilities Revitalization Project Phase II.			
Total Funding Change, Readiness in Technical Base and Facilities	**2,004,785**	**2,239,828**	**+235,043**

Operations of Facilities
Overview

The RTBF Operations of Facilities subprogram supports the infrastructure investment needed to provide a nuclear deterrent and sustain base operations in the nuclear security enterprise required for nuclear weapons activities, including increased surveillance, the B61 LEP, and potential LEPs on the W78 and W88. Operations of Facilities operates and maintains NNSA-owned programmatic capabilities in a state of readiness, ensuring each capability (workforce and facility) is operationally ready to execute programmatic tasks in support of the entire nuclear security enterprise in a safe, secure, reliable, and "ready for operations" manner. The subprogram provides and sustains core capabilities for, material operations capability including: plutonium, uranium, tritium and high explosive materials; component production, fabrication, and assembly/disassembly capability; testing capability, such as environmental testing, special nuclear and non-nuclear material testing; and site mission and infrastructure support.

The RTBF program continues its effort to provide better insight and granularity of the costs required to operate and maintain nuclear security enterprise facilities. The Operations of Facilities subprogram organizes work based on capabilities provided, such as material operations, component production, fabrication, assembly/disassembly, and testing. All RTBF related work performed at a specific site is contained within these and lower level, more detailed categories. Such activities include: facilities management; maintenance; utilities; environment, safety and health; capital equipment; emergency operations; waste management; maintenance of the authorization basis for each facility, National Environmental Policy Act activities; and, General Plant Projects (GPP). Operations of Facilities provides for the daily operations, infrastructure, corrective and preventive maintenance, and staffing requirements, while providing activities associated with sustaining equipment, systems, facilities, or capabilities to meet design requirements and operating conditions consistent with program requirements. In FY 2013, Operations of Facilities provides the support activities needed to address new requirements as specified in the 2010 Nuclear Posture Review and in the New START Treaty. It also provides at least a base operational state of readiness at all sites, and provides the increased infrastructure and capability support required for nuclear weapons activities.

Operations of Facilities also funds general infrastructure support activities such as GPPs and Other Project Costs (OPCs) for line item construction projects.

Sequence

This is not applicable for this section.

Benefits

Provides an important infrastructure and capability foundation for all NNSA sites. The production plants (Y-12, KCP, SRS, and PX) and NNSS are especially dependent on RTBF funding. The RTBF Operations of Facilities FY 2013 budget provides up to 36 percent of the total Defense Programs budget at these five sites. Whereas, at the three national weapons laboratories, RTBF Operations of Facilities FY 2013 budget provides approximately 18 percent of the total Defense Programs budget. Providing resources in order to maintain and sustain infrastructure is crucial to the success of the nuclear security enterprise.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
Operations of Facilities		
Kansas City Plant		
FY 2011		**184,033**
FY 2012		**155,759**
FY 2013		**163,602**
FY 2014-FY 2017		**TBD**
Kansas City Plant – Banister Road		
FY 2011	• Maintained high availability of the Bannister Road facility while operating in a "run to replacement" mode, which allowed select facility and equipment maintenance to grow, as maintenance critical for safe operations was performed.	**76,456**
FY 2012	• Continue operations and required maintenance costs at the current Bannister Road facility. In anticipation of the move to a new facility, KCP is being operated in a "run to replacement" mode, where maintenance for continued safe operations will be performed, and select facility and equipment maintenance will be allowed to grow until the replacement facility at Botts Road is operational.	**91,812**
FY 2013	• Supports continued operations and required maintenance costs at the current Bannister Road facility. The Bannister Road facility is being operated in a "run to replacement" mode, allowing certain facility and equipment maintenance to grow, while performing limited maintenance required for continued safe operations.	**93,602**
FY 2014-FY 2017	• 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.	**TBD**
Kansas City Responsive Infrastructure Manufacturing and Sourcing (KCRIMS)		
FY 2011	• KCP has awarded over $100,000,000 in contracts for relocation to KCRIMS. • Construction of the Botts Road facility was approximately 30% complete.	**107,577**
FY 2012	• Continue transition into a new facility with minimum disruptions as laid out in the KCRIMS transformation plan. Funding includes approximately $5,000,000 for the KCRIMS lease and $59,000,000 for the relocation of equipment and personnel to the new Botts Road facility. The funding requested for KCRIMS included the restoration of $20,000,000 utilized as a source to support the FY 2010 B61 reprogramming request.	**63,947**
FY 2013	• Supports continued transition into a new facility with minimum disruptions as laid out in the KCRIMS transformation plan. Funding includes approximately $50,000,000 for an entire year of the KCRIMS lease and the remaining amount to continue relocation of equipment and personnel to the new Botts Road facility.	**70,000**
FY 2014-FY 2017	• Supports continued transition and operations of the new facility as laid out in the KCRIMS transformation plan.	**TBD**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Operations of Facilities		
Lawrence Livermore National Laboratory		
FY 2011	• LLNL is ahead of their de-inventory schedule, having completed packaging of approximately 96% of planned SNM with 93% shipped off-site. • Relocated the Large Gas Gun into the High Explosives Application Facility (HEAF). • Assured facilities were available to complete 243 HE shots at HEAF and 38 at the Contained Firing Facility (CFF/B851).	**78,917**
FY 2012	• Continue to provide facility and infrastructure support for the completion of de-inventory activities. • Continue facility and infrastructure support of weapon assessment and certification; LEP research, development and design; plutonium research and technology programs; tritium recovery/loading and target manufacturing; and high explosives experimental synthesis, formulation, processing, assembly and testing. • Continue facility and infrastructure support of Nuclear Counterterrorism research, experimentation, and emergency operations. • Continue packaging design, maintenance and certification.	**83,744**
FY 2013	• Provides the capability to perform plutonium, tritium and high explosive operations; environmental tests; and regulated site-wide comprehensive waste management. • Continues to provide facility and infrastructure support of weapon assessment and certification; LEP research, development and design; plutonium research and technology programs; tritium recovery/loading and target manufacturing; and high explosives experimental synthesis, formulation, processing, assembly and testing. • Continues to provide facility and infrastructure support of Nuclear Counterterrorism research, experimentation, and emergency operations. • Continues to provide DOE's Nuclear Criticality Safety Training Course. • Continues to provide packaging design, maintenance and certification.	**89,048**
FY 2014-FY 2017	• Provides the capability to perform plutonium, tritium and high explosive operations; environmental tests; and regulated site-wide comprehensive waste management. • Continues to provide facility and infrastructure support of weapon assessment and certification; LEP research, development and design; plutonium research and technology programs; tritium recovery/loading and target manufacturing; and high explosives experimental synthesis, formulation, processing, assembly and testing. • Continues to provide facility and infrastructure support of Nuclear Counterterrorism research, experimentation, and emergency operations. • Continues to provide DOE's Nuclear Criticality Safety Training Course. • Continues to provide packaging design, maintenance and certification.	**TBD**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Operations of Facilities		
Los Alamos National Laboratory		
FY 2011	• Successfully implemented fire prevention measures and averted significant damage due to the Las Conchas Fire. • Evaporator installation was completed at the Radioactive Liquid Waste Treatment Facility (RLWTF) in order to meet the metals limit on outfall to the environment. • Implemented the new Design Safety Analysis at CMR and conducted training on revised procedures. • Restarted Tritium operations at Weapons Engineering Test Facility after improvements in formality of operations and pressure safety.	**324,822**
FY 2012	• Continue engineering, manufacturing systems and methods shops; tritium; dynamic experimentation; LANSCE; waste management; Nuclear Materials Technology (TA-55); Chemistry and Metallurgy Research (CMR); and beryllium technology. • Support solid waste risk reduction activities (including the processing of stored new generation transuranic (TRU) waste at Area G in support of a Consent Order issued by the New Mexico Environmental Department), TA-55 Seismic and Fire Safety Engineering, CMR Risk Mitigation and Consolidation and RLWTF System upgrade/replacement. • Continue funding for the Los Alamos Pueblo Project (approximately $800,000 per year).	**317,592**
FY 2013	• Provides for special material operations such as: plutonium production, research and development; chemistry and metallurgy research; weapons engineering, and tritium capability; and beryllium operations. Also includes resources for any needed Las Conchas fire damage recovery to RTBF/Mission Critical facilities (e.g., roofs, etc.), infrastructure and facility upgrades to the TA-55 Reinvestment Project, Phase II (Air Dryers and Group I Gloveboxes subproject in FY 2013) ; the Radiological Laboratory Utility Office Building construction (equipment installation and turnover for radiological operations in FY 2013); and nuclear material consolidation and repackaging efforts per DNFSB 2005-1 recommendations. • Provides for high explosives production, assembly, development and firing; component production and fabrication; and stored and newly generated radiological waste operations from explosives activities. • Supports non-nuclear testing, which includes both the Los Alamos Neutron Science Center (LANSCE) Linear Accelerator and the Dual Axis Radiographic Hydrodynamic Test Facility (DARHT). • Continues to provide capabilities and activities including: the engineering, manufacturing systems and methods shop; tritium; dynamic experimentation; LANSCE; Nuclear Materials Technology (TA-55); Chemistry and Metallurgy Research (CMR); and beryllium technology including risk reduction at LANSCE and Containment Vessel Disposition (CVD) material disposition at CMR. • Continues to provide 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 transuranic waste facility, and continued processing of stored new generation transuranic (TRU) waste at Area G) as the path forward to meet Consent Order milestones as issued by the New Mexico Environmental Department.	**335,978**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Operations of Facilities		
	• Continues to provide for TA-55 seismic and fire safety engineering (per DNFSB 2009-2) CMR Risk Mitigation; and consolidation, and design of the RLWTF System upgrade/replacement. • Continues to provide for the Los Alamos Pueblo Project at approximately $800,000 per year.	
FY 2014-FY 2017	• Provides for special material operations such as: plutonium production, research and development; chemistry and metallurgy research; weapons engineering tritium capability; and beryllium operations including continued Las Conchas fire recovery, infrastructure and facility upgrades to the TA-55 Reinvestment Project-Phase II; the operations of the Radiological Laboratory/Utility/Office Building; upgraded nuclear material repackaging capability per DNFSB 2005-1 recommendations at RTBF-related; RTBF funded upgrades of mission critical and mission dependent facilities; and reduction of LANL's deferred maintenance backlog. • Provides for high explosives production, assembly, development and firing; component production and fabrication; and stored and newly generated radiological waste operations from explosives activities. • Supports non-nuclear testing, which includes both the Los Alamos Neutron Science Center (LANSCE) Linear Accelerator and the Dual Axis Radiographic Hydrodynamic Test Facility (DARHT). • Continues to provide capabilities and activities including: the engineering, manufacturing systems and methods shop; tritium; dynamic experimentation; LANSCE; Nuclear Materials Technology (TA-55); Chemistry and Metallurgy Research (CMR); and beryllium technology. Capabilities include the continued LINAC risk reduction at LANSCE and CVD material disposition at CMR. • Cease NNSA transuranic (TRU) waste disposal operations at Area G to meet Consent Order milestones. • Continues to provide solid waste risk reduction activities (including the processing of stored new/interim solid waste capabilities for new generation low level waste and low-level mixed waste (LLW/LLMW) and Phase B of transuranic (TRU) waste facility at location other than Area G) to meet Consent Order milestones as issued by the New Mexico Environmental Department. • Continues to provide for TA-55 Seismic and Fire Safety Engineering; pursuit of seismic ruggedness; CMR Risk Mitigation; and completion of the Radioactive Liquid Waste Facility System upgrade/replacement. • Continues to provide for the Los Alamos Pueblo Project at approximately $800,000 per year.	**TBD**
Nevada National Security Site		
FY 2011	• Successfully started up and dedicated the National Criticality Experiments Research Center (NCERC). • Supported successful BAROLO experiments. • Completed the Operational Readiness Review at the Joint Actinide Shock Physics Experimental Research (JASPER) facility. • Completed JASPER return to program and readiness activities. Hot shot was successfully conducted on September 15, 2011.	**81,062**
FY 2012	• Provides for the operation of the Device Assembly Facility (DAF) (including	**97,273**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Operations of Facilities		
	NCERC) enduring operations and ensures that the U1a complex, JASPER facility, the Big Explosives Experimental Facility (BEEF) and Baker site achieve base operations capability to support Stockpile Stewardship missions. • Operate and maintain the remainder of NNSS in a base operations capability condition while maintaining safe, secure transportation and handling, and providing for experimenter and diagnostician personnel at the site.	
FY 2013	• Provides core capabilities in support of the following activities: LEP research, development and design; Security Category I/II Special Nuclear Material handling and storage; Nuclear Counterterrorism research, experimentation, and emergency operations; DOE's Nuclear Criticality Safety Program; and legacy environmental cleanup commitments. • Provides experimentation capabilities including: the DOE Nuclear Criticality Safety Program's NCERC; large scale underground sub-critical plutonium experiments; high hazard, scientific experiments with special nuclear materials (e.g., dynamic plutonium experiments); large high explosive charge experiments and testing. • Continues to provide for the operation of the DAF (including NCERC) enduring operations and ensures that the U1a complex, the JASPER facility, BEEF and Baker site achieve base operations capability to support Stockpile Stewardship missions. • Provides for essential safety systems upgrades at the DAF (e.g. fire suppression, HEPA, penetration seals, etc.) and improvements to the DAF Documented Safety Analysis (DSA) to improve mission efficiency. • Continues to operate and maintain remainder of NNSS in base operations capability condition while maintaining safe, secure transportation and handling, and providing for experimenter and diagnostician personnel at the site.	**115,697**
FY 2014-FY 2017	• Provides core capabilities in support of the following activities: LEP research, development and design; Security Category I/II Special Nuclear Material handling and storage; Nuclear Counterterrorism research, experimentation, and emergency operations; DOE's Nuclear Criticality Safety Program; and legacy environmental cleanup commitments. • Provides experimentation capabilities including: the DOE Nuclear Criticality Safety Program's NCERC; large scale underground sub-critical plutonium experiments; high hazard, scientific experiments with special nuclear materials (e.g., dynamic plutonium experiments); large high explosive charge experiments and testing. • Continues to provide for the operation of DAF (including NCERC) enduring operations and ensures that the U1a complex, the JASPER facility, BEEF and Baker site achieve base operations capability in support Stockpile Stewardship missions. • Provides for essential safety systems upgrades at the DAF (e.g. fire suppression, HEPA, penetration seals, etc.) and improvements to the DAF Documented Safety Analysis (DSA) to improve mission efficiency. • Continues to operate and maintain remainder of NNSS in base operations capability condition while maintaining safe, secure transportation and handling, and providing for experimenter and diagnostician personnel at the site.	**TBD**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Operations of Facilities		
Pantex Plant		
FY 2011	• Provided adequate facility availability to perform assembly/disassembly, surveillance and high explosive activities in support of DSW and dismantlement of the last B53 bomb. • Achieved industry standard world-class safety rating of 0.10 Lost Time Cases (LTC). • Completed various flood recovery projects, such as: Mass Property Equipment installation; Storm Drainage repair; and Utility Line erosion repair. • Completed various nuclear facility upgrades such as seismic modifications, and upgraded hoists to meet nuclear safety standards in two facilities.	**125,336**
FY 2012	• Continue risk reduction activities. • Continue recovery from the FY 2010 flood event. • Provide an operable state of readiness at the site. • Improve facilities such as the HE manufacturing facility as Pantex awaiting construction of new HE pressing facility operations.	**164,365**
FY 2013	• Provides facilities and infrastructure 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. • Maintains critical safety systems in support of Nuclear Weapons activities such as linear accelerator maintenance, Radiation Alarm Systems, Fire Suppression Systems, and HE machining capabilities. • Provides for the following activities: collection and treatment of wastewater; steam distribution and condensate return; electrical distribution; natural gas distribution; compressed air; water production, treatment, distribution to support domestic, industrial, and fire protection needs; and safety and health assurance including radiation safety, nuclear explosive safety, occupational medicine, industrial hygiene, and industrial safety. • Continues to provide risk reduction and mitigation activities. • Provides for facility management and staff to perform plant and maintenance engineering, facility utilization analysis, modification and upgrade, and facilities planning supporting a base operable state of readiness at the site. • Continues to maintain HE manufacturing facilities as the site awaits the construction of new HE pressing facility.	**172,020**
FY 2014-FY 2017	• Provides facilities and infrastructure 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. • Maintains critical safety systems in support of Nuclear Weapons activities such as linear accelerator maintenance, Radiation Alarm Systems, Fire Suppression Systems, and high explosive (HE) machining capabilities. • Provides for the following activities: collection and treatment of wastewater; steam distribution and condensate return; electrical distribution; natural gas distribution; compressed air; water production, treatment, distribution to support domestic, industrial, and fire protection needs; and safety and health assurance including Radiation Safety, Nuclear Explosive Safety, Occupational Medicine, Industrial Hygiene, and Industrial Safety.	**TBD**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Operations of Facilities		
	• Continues to provide risk reduction and mitigation activities. • Provides for facility management and staff to perform plant and maintenance engineering, facility utilization analysis, modification and upgrade, and facilities planning supporting a base operable state of readiness at the site. • Continues to maintain HE manufacturing facilities as Pantex awaits the construction of new HE pressing facility.	
Sandia National Laboratories		
FY 2011	• SNL's Primary Standards Laboratory received the National Voluntary Laboratory Accreditation Program (NVLAP) reaccreditation. • Received an R&D 100 award for Microresonator Filters and Frequency References designed and fabricated at MESA. • Tonopah Test Range (TTR) conducted 10 successful surveillance flight test events of B61 and B83 Joint Test Assemblies • Annular Core Research Reactor (ACRR) conducted its 10,000th pulse operation on September 8, 2011	**116,685**
FY 2012	• Support major environmental test facilities, including electromechanical, abnormal and normal environments, Microelectronics Development Laboratory, Tech Area IV Accelerators, Tech Area V Nuclear Reactor facilities, Electromagnetic Test Facilities, Materials Characterization Laboratories and TTR in Nevada. • Facilities operated at base operations levels with rotating staff on a planned schedule to accommodate mission needs. • Provide base operations capability level for TTR and limited recapitalization of equipment. • Provide for the initiation of recapitalization of testing equipment to support increased DSW surveillance activities for the W76 and B61, and support for the essential capabilities in microsystems and radiation hardness, engineering and material sciences that are required to support the B61 LEP and potential LEPs on the W78 and the W88.	**120,354**
FY 2013	• Provides facilities and infrastructure to support nuclear weapon assessment and certification; weapon component design, testing, and manufacturing, in support of LEPs; major environmental testing; Microelectronics and Engineering Sciences Applications; engineering and material sciences; remote testing ranges for joint test assemblies. • Continues to provide major capabilities including environmental test facilities for various environments such as electromechanical, abnormal and normal; , Microelectronics Development Laboratory, Tech Area IV Accelerators, Tech Area V Nuclear Reactor facilities, Electromagnetic Test Facilities, Materials Characterization Laboratories and TTR in Nevada. • Continues to operate facilities at a base operational level while rotating staff on a planned schedule to accommodate mission needs. • Continues to provide base operations capability at TTR while providing for limited recapitalization of equipment. • Provide for the recapitalization of Silicon Fabrication Facility including replacing outdated tools and equipment to support increased microsystems and radiation hardness needs for the W88 ALT, W76 LEP and B61 LEP, as well as increased	**167,384**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Operations of Facilities		
	DSW surveillance activities.	
FY 2014-FY 2017	• Provides facilities and infrastructure to support including: nuclear weapon assessment and certification; weapon component design, testing, and manufacturing, in support of LEPs; major environmental testing; Microelectronics and Engineering Sciences Applications; engineering and material sciences; remote testing ranges for joint test assemblies. • Continues to provide major capabilities including environmental test facilities for various environments such as electromechanical, abnormal and normal; , Microelectronics Development Laboratory, Tech Area IV Accelerators, Tech Area V Nuclear Reactor facilities, Electromagnetic Test Facilities, Materials Characterization Laboratories and TTR in Nevada. • Continues to operate facilities at a base operational level while rotating staff on a planned schedule to accommodate mission needs. • Continues to provide base operations capability at TTR while providing for limited recapitalization of equipment. • Continues to provide for the recapitalization of the Silicon Fabrication Facility and testing equipment to support increased Stockpile Stewardship needs for the W88 ALT, W76 and B61 LEP's as well as DSW surveillance activities.	**TBD**
Savannah River Site		
FY 2011	• Provided adequate facilities, infrastructure, and base capabilities to complete all LLCE, LEP, and Surveillance work in support of DSW. • Completed deactivation activities for Old Construction Building (232-1H) • Completed project for transfer of H-Area Old Manufacturing alarms to H-Area New Manufacturing (HANM), in support of a single HANM centric control room.	**91,850**
FY 2012	• Supports activities leading to the replacement of Thermal Cycle Absorption Process hybrid beds, starts modernization activities of the existing facilities to support infrastructure initiatives, and supports the DSW Limited Life Components (LLCs) schedule. • Provide adequate facilities, infrastructure, and base capabilities to support: production, reclamation of gas transfer systems for limited life component exchange and LEPs; production, recycling, and recovery of tritium and deuterium gases; surveillance of Gas Transfer Systems; packaging design, maintenance, and certification; and storage of national security legacy components and materials.	**97,480**
FY 2013	• Provides adequate facilities, infrastructure, and base capabilities to support: production, reclamation of gas transfer systems for limited life component exchange and LEPs; production, recycling, and recovery of tritium and deuterium gases; surveillance of Gas Transfer Systems; packaging design, maintenance, and certification; and storage of national security legacy components and materials. Continues to support activities leading to the replacement of Thermal Cycle Absorption Process hybrid beds, continues modernization activities of the existing facilities to support infrastructure initiatives, and supports the DSW LLCs schedule. • Provides for the first year of Tritium Responsive Infrastructure Modifications (TRIM) which when complete allows SRS to reduce infrastructure risk, deferred maintenance, Hazard Category 2/3 facilities (from 8 to 5), energy usage, annual costs, and right size mission critical footprint.	**120,577**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Operations of Facilities		
FY 2014-FY 2017	• Provides adequate facilities, infrastructure, and base capabilities to support: production, reclamation of gas transfer systems for limited life component exchange and LEPs; production, recycling, and recovery of tritium and deuterium gases; surveillance of Gas Transfer Systems; packaging design, maintenance, and certification; and storage of national security legacy components and materials. Continues to support activities leading to the replacement of Thermal Cycle Absorption Process hybrid beds, continues modernization activities of the existing facilities to support infrastructure initiatives, and supports the DSW LLCs schedule. • Provides for the first year of Tritium Responsive Infrastructure Modifications (TRIM) which when complete allows SRS to reduce infrastructure risk, deferred maintenance, Hazard Category 2/3 facilities (from 8 to 5), energy usage, annual costs, and right size mission critical footprint.	**TBD**
Y-12 National Security Complex		
FY 2011	• Completed several Facility Risk Reduction investments in Building 9212 • Completed the 9201-5 Brine Line Isolation project to eliminate environmental risk and obtain energy savings. • Bear Creek Bypass Project designed and constructed a new portion of Bear Creek Road, moving traffic away from production facilities and behind new security fencing. • The Carbon Burner Project readiness activities have been completed and operations were initiated in May.	**211,715**
FY 2012	• Provide multiple facilities, infrastructure, and base capabilities in support of the nuclear security enterprise, 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. • Supports Y-12 base operations with facilities and infrastructure in a state of readiness. • Continue management of the thirteen production and support facilities and related facility systems, including newly generated waste.	**245,280**
FY 2013	• Provides core capabilities, facilities and infrastructure to support: 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. • Supports Y-12 base operations with facilities and infrastructure in a state of readiness. • Continues management of the thirteen production and support facilities and related facility systems, including newly generated waste.	**255,097**
FY 2014-FY 2017	• Provides core capabilities, facilities and infrastructure to support: 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. • Supports Y-12 base operations with facilities and infrastructure in a state of readiness. • Continues management of the thirteen production and support facilities and	**TBD**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Operations of Facilities		
	related facility systems, including newly generated waste.	
Institutional Site Support		
FY 2011	• Addressed multiple unplanned events that were otherwise outside of the normal Operations of Facilities scope across the complex. Such activities included: o Initiated DAF Fire Suppression projects at NNSS; o JASPER returned to operations after the successful development of safety authorization basis at NNSS; o Installed cathodic protection of fuel tanks at Pantex; o Successfully completed various flood recovery projects at Pantex.	**40,887**

Program Readiness
Overview

The Program Readiness subprogram has been focused on implementing a multi-year strategy to provide capabilities (skilled worker expertise, advanced technologies, and innovative approaches) that support the programmatic needs of the NNSA. These crosscutting investments address needs beyond any single facility, Campaign, or weapon system and are essential to achieving the objectives of Stockpile Stewardship. Starting in FY 2013, this subprogram has been moved to Science, Technology, and Engineering Capability Support.

Sequence
This is not applicable for this section.

Benefits
The scope of this activity has been moved to Science, Technology, and Engineering Capability Support in FY 2013.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Nuclear Criticality Safety Program (NCSP) completed the first critical experiment at NCERC. • NNSA prepared and executed a cooperative agreement with the French CEA and began the preliminary design of the facility and systems (DE-NA0000907, "Feasibility Study for MIDAS Project) to initiate the US-France collaboration on the Valduc Criticality Safety Facility Refurbishment/Utilization program. • The Weapon Intern Program (WIP) at SNL graduated its largest class (24 participants) since its inception in 1999, with participants from the National Labs, the US Air Force, the Air Force Nuclear Weapons Center, the Kansas City Plant, Pantex, and Y-12. • Obtained DOE authorization to achieve criticality and conducted a pilot hands-on training class on the SNL NCSP reactor.	**69,736**
FY 2012	• The NCSP provides sustainable expert leadership, direction, and the technical infrastructure necessary to develop, maintain and disseminate the essential technical tools, training and data required to support safe, efficient fissionable material operations within DOE. The NCSP will continue collaboration by executing the CEA/NNSA "Feasibility Study for MIDAS Project" which will lead toward joint operations of unique critical experiments capability (e.g., a mixed actinide super prompt critical solution assembly) for validating criticality safety design codes for a variety of applications important to the DOE including new reactor designs and alternative fuel cycles. • Continue efforts on the Nevada State Regulatory environmental compliance issues that resulted from years of nuclear testing activities in Nevada to geologic studies performed by the U.S. Geological Survey Department. • Continue 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. • Continue the training, development, and technical apprenticeship of new associates for critical skills at NNSA production plants, along with the technical resource pipeline and production assurance required to sustain critical production and engineering capabilities. • Continue the capabilities needed for integrated and engineered Nuclear Warhead Certification at SNL. Specific activities supported by Program Readiness at Sandia	**73,962**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	include: WIP, which is important in developing and maintaining critical skills; Technology Readiness, necessary to support any future LEPs; NNSS Radiography (e.g., Cygnus Operators and Scientists); and Qualification Alternatives to the Sandia Pulsed Reactor (QASPR) applications consistent with developing and maturing technology.	
FY 2013	• This activity has been moved to Science, Technology, and Engineering Capability Support starting in FY 2013.	**0**
FY 2014-FY 2017	• This activity has been moved to Science, Technology, and Engineering Capability Support starting in FY 2013.	**0**

Material Recycle and Recovery
Overview

The RTBF Material Recycle and Recovery (MRR) subprogram has provided for recycling and recovery of plutonium, enriched uranium, and tritium from fabrication and assembly operations, limited life components, and dismantlement of weapons and components. The MRR subprogram supported the implementation of new or improved processes for fabrication and recovery operations, material stabilization, conversion, and storage. The MRR subprogram supported the process of recycling and purifying materials to meet specifications for safe, secure, and environmentally acceptable storage, and to meet the directive schedule for tritium reservoir refills. Starting in FY 2013, this subprogram has been moved to Nuclear Operations Capability Support. Recycling and recovery activities will be supported by DSW when the scope exceeds the base capability provided by the MRR program. The MRR is principally accomplished at LANL, the SRS Tritium Extraction Facility and Y-12.

Sequence
This is not applicable for this section.

Benefits
The scope of this activity has been moved to Nuclear Operations Capability Support in FY2013.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Supplied adequate enriched uranium to support the DSW program. • Significantly decreased the Material-At-Risk at LANL. • Completed Containment Vessel Disposition (CVD) enclosure construction and initiated acceptance testing in preparation for a readiness assessment. • Re-established pure HEU metal production at Y-12.	**77,493**
FY 2012	• Support the process of recycling and purifying materials to meet specifications for safe, secure, and environmentally acceptable storage, and to meet the directive schedule for tritium reservoir refills. • Provide additional recycling and recovery activities 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 material stabilization/decontamination/repackaging, nuclear materials information management, the Special Recovery Line, and nuclear materials planning and reporting. o 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. o 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, processing enriched uranium chips and scraps, chemical conversion of lithium, salvage operations, and filter teardowns. • Includes the deactivation of Building 9206 and operations of 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.	**77,780**

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2013	• This activity has been moved to Nuclear Operations Capability Support starting in FY 2013.	**0**
FY 2014-FY 2017	• This activity has been moved to Nuclear Operations Capability Support starting in FY 2013.	**0**

Containers
Overview

The RTBF containers subprogram has provided 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. New container systems such as the DPP-1, DPP-3, ES-4100, and 9977/9978 are being developed to improve safety, security, ability to be maintained, meet updated regulatory requirements, and accept a broader array of contents to minimize the number of specialized containers that have to be maintained. These efforts include efficiencies provided by close coordination of planning and operations with users/customers. Supports the emphasis on nuclear material consolidation, and de-inventory activities to ensure needed transportation containers are certified and available to accommodate proposed material movements. This includes supporting the de-inventory of LLNL Category I and II nuclear materials through the certification and supply of containers. DSW also provides support for container activity when weapon system scope exceeds the level initially identified by the container subprogram. Starting in FY 2013, this subprogram has been moved to Nuclear Operations Capability Support.

Sequence

This is not applicable for this section.

Benefits

The scope of this activity has been moved to Nuclear Operations Capability Support in FY2013.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Completed fabrication of the first Bulk Tritium Shipping Package (BTSP) at SRS. • Received regulatory approval of the PAT-1 (Plutonium Air Transport) safety analysis report from the Nuclear Regulatory Commission (NRC), allowing for the air transport of plutonium metal as a new payload for the PAT-1 package. • Completed the startup activities for the conversion of the 9977 container to the H1700 container for use supporting Limited Life Component Exchange at Pantex.	**27,820**
FY 2012	• Support the emphasis on nuclear material consolidation, and de-inventory activities to ensure needed transportation containers are certified and available to accommodate proposed material movements, including the LLNL Category I and II nuclear materials.	**28,892**
FY 2013	• This activity has been moved to Nuclear Operations Capability Support starting in FY 2013.	**0**
FY 2014-FY 2017	• This activity has been moved to Nuclear Operations Capability Support starting in FY 2013.	**0**

Storage
Overview

The RTBF storage subprogram has provided for effective storage and management of national security and surplus pits, HEU, and other weapons and nuclear materials. Funding supports receipt, storage, and inventory of nuclear materials, non-nuclear materials, HEU, enriched lithium, and components from dismantled warheads. Storage also provides programmatic planning for nuclear material requirements, including analysis, forecasting, and reporting functions, as well as emergent analyses of nuclear materials as designated by the NNSA and others. The Nuclear Materials Integration subprogram under Site Stewardship is also supported by having the requisite facilities available so they can execute their responsibility. Starting in FY 2013, this subprogram has been moved to Nuclear Operations Capability Support. Storage activities will be supported by DSW when the scope exceeds the base capability provided by the Storage program.

Sequence

This is not applicable for this section.

Benefits

The scope of this activity has been moved to Nuclear Operations Capability Support in FY2013.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Y12's HEUMF Transition Program successfully moved qualified materials from long-term storage areas in production facilities to HEUMF. • Produced a prototype storage can, compliant with DOE O 441.1-1.	**23,945**
FY 2012	• Funding includes the cost of receipt, storage, and inventory of nuclear materials, non-nuclear materials, HEU, enriched lithium, and components from dismantled warheads. • Provides programmatic planning for nuclear material requirements, including analysis, forecasting, and reporting functions, as well as emergent analyses of nuclear materials as designated by the NNSA and others. • Successfully supported the Nuclear Materials Integration subprogram under Site Stewardship by having the requisite facilities available. o At Pantex, activities included 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. Provides for additional capability for High Resolution Computed Tomography. o Pit Disassembly and Inspection Surveillance included surveillance activities associated with pits in storage. Activities included weight and leak testing, visual inspections, and radiography. Improvements to surveillance of pits will be provided such as Low Energy Radiography; Acoustic Resonance Spectroscopy; a second Laser Gas Sampling System; High Resolution Computed Tomography; Non-Destructive Laser Gas Sampling; Dimensional Inspection; and Pit Characterization Lab. Increased in non-nuclear material disposition activities at Pantex and increased capabilities to perform characterization activities on legacy components in storage are also supported, including the ultimate disposal of backlogged components in scrap status. o At Y-12, activities included the overall management and storage of uranium,	**31,196**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	lithium, and other nuclear and weapons materials, including the nation's strategic reserve of HEU. In addition, the Y-12 Nuclear Materials Management, Storage, and Disposition subprograms provide programmatic guidance and support of these materials and services throughout the nuclear security enterprise. The Storage subprogram supports the loading, operating, and maintaining of HEUMF. 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.	
FY 2013	• This activity has been moved to Nuclear Operations Capability Support starting in FY 2013.	**0**
FY 2014-FY 2017	• This activity has been moved to Nuclear Operations Capability Support starting in FY 2013.	**0**

Nuclear Operations Capability Support
Overview

Nuclear Operations Capability Support provides the critical cross-cutting support for the safe, secure and effective processing, transportation and storage of nuclear materials. The scope includes Material Recycle and Recovery (MRR), Containers, and Storage activities.

The Nuclear Operations Capability subprogram provides recycling and recovery of plutonium, enriched 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 or improved processes for fabrication and recovery operations, material stabilization, conversion, and storage.

The subprogram provides 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. New container systems such as the DPP-1, DPP-3, ES-4100, and 9977/9978 are being developed to improve safety, security, ability to be maintained, meet updated regulatory requirements, and accept a broader array of contents to minimize the number of specialized containers that have to be maintained.

Finally, this subprogram provides effective storage and management of national security and surplus pits, enriched and depleted uranium, lithium, tritium, heavy water, and other weapons and nuclear materials.

Sequence

This is not applicable for this section.

Benefits

- Provides a more responsive capability to better meet the nuclear materials management needs of the nuclear security enterprise. Ongoing activities, such as uranium stabilization, decontamination, and repackaging, and tritium recycling support LEPs and the limited life program for DSW.
- Allows component, assembly, and unit transportation required to conduct the LEPs and allows the removal of material from the production floor to designated storage locations, providing the necessary security, safety, and footprint requirements to meet the DSW required production schedules.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
Nuclear Operations Capability Support		
FY 2011	• This subprogram begins in FY2013. Activities were conducted under the Material Recycle and Recovery (MRR), Containers, and Storage subprograms.	**0**
FY 2012	• This subprogram begins in FY2013. Activities were conducted under the Material Recycle and Recovery (MRR), Containers, and Storage subprograms.	**0**
FY 2013	• 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 components. • Implements new or improved processes for fabrication and recovery operations, material stabilization, conversion, and storage. • Continues to support the process of recycling and purifying materials to meet specifications for safe, secure, and environmentally acceptable storage, and to meet the directive schedule for tritium reservoir refills. • Continues to provide additional recycling and recovery activities to support the	**203,346**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	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, and nuclear materials planning and reporting. Accelerated vault de-inventory reduces nuclear safety risks and supports current and future needs for material storage in the Advanced Recovery and Integrated Extraction System (ARIES), Pu-238 operations, DSW, Campaigns and other defense program missions in PF-4. o 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. o 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, processing enriched uranium chips and scraps, chemical conversion of lithium, salvage operations, and filter teardowns. • Identifies Pu storage alternatives including NNSS DAF. • Continues to provide for deactivation of Building 9206 and operation of 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. • 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. • Develops and fabricates new container systems such as the DPP-1, DPP-3, and ES-4100 to improve safety, security, ability to be maintained, meet updated regulatory requirements, and accept a broader array of contents to minimize the number of specialized containers that have to be maintained. • Continues to support the emphasis on nuclear material consolidation, and de-inventory activities to ensure needed transportation containers are certified and available to accommodate proposed material movements, including LANL vault de-inventory, the Idaho material relocation efforts to support the National Criticality Experiments Research Center (NCERC) and Sandia National Laboratories material relocation planning. • Fabricates certified containers to expand usage for material of national security including the phased DPP-2 mission expansion to replace the DT-22 container and the ES-4100 and 9977/78 container missions. • 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 for effective storage and management of national security and surplus pits, HEU, and other weapons and nuclear materials. Includes: receipt, storage, and inventory of nuclear materials, non-nuclear materials, HEU, enriched lithium,	

Fiscal Year	Activity	Funding (Dollars in Thousands)
	and components from dismantled warheads. • Continue to provide programmatic planning for nuclear material requirements, including analysis, forecasting, and reporting functions, as well as emergent analyses of nuclear materials as designated by the NNSA and others. • Continue to support the Nuclear Materials Integration subprogram under Site Stewardship by having the requisite facilities available so they can execute their responsibility. o 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. o At Y-12, activities include the overall management and storage of uranium, lithium, and other nuclear and weapons materials, including the nation's strategic reserve of HEU. In addition, the Y-12 Nuclear Materials Management, Storage, and Disposition program provided programmatic guidance and support of these materials and services throughout the nuclear security enterprise. The Storage program supported the loading, operating, and maintaining of HEUMF. This program also provided the long-term planning and analysis of materials required for the Y-12 manufacturing strategy in support of the nuclear weapons stockpile.	
FY 2014-FY 2017	• Provides for recycling and recovery of plutonium, enriched uranium, and tritium from fabrication and assembly operations, limited life components, and dismantlement of weapons and components. • Implements new or improved processes for fabrication and recovery operations, material stabilization, conversion, and storage. • Continues to support the process of recycling and purifying materials to meet specifications for safe, secure, and environmentally acceptable storage, and to meet the directive schedule for tritium reservoir refills. • Continues to provide additional recycling and recovery activities 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, and nuclear materials planning and reporting. o 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. o 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, processing enriched uranium chips and scraps, chemical conversion of lithium, salvage operations, and filter teardowns. • Continues to provide for deactivation of Building 9206 and operation of the	**TBD**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	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 nuclear security enterprise. • 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 years or so with last update 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. • Provides for effective storage and management of national security and surplus pits, HEU, and other weapons and nuclear materials. Includes: receipt, storage, and inventory of nuclear materials, non-nuclear materials, HEU, enriched lithium, and components from dismantled warheads. • Continues to provide programmatic planning for nuclear material requirements, including analysis, forecasting, and reporting functions, as well as emergent analyses of nuclear materials as designated by the NNSA and others. • Continues to support the Nuclear Materials Integration subprogram under Site Stewardship by having the requisite facilities available so they can execute their responsibility. o 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. o At Y-12, activities include the overall management and storage of uranium, lithium, and other nuclear and weapons materials, including the nation's strategic reserve of HEU. In addition, the Y-12 Nuclear Materials Management, Storage, and Disposition program provided programmatic guidance and support of these materials and services throughout the nuclear security enterprise. The Storage program supported the loading, operating, and maintaining of HEUMF. This program also provided the long-term planning and analysis of materials required for the Y-12 manufacturing strategy in support of the nuclear weapons stockpile.	

Science, Technology, and Engineering Capability Support
Overview

Science, Technology and Engineering (ST&E) Capability Support provides the critical science, technology, and engineering capabilities to sustain the nation's nuclear deterrent into the future. The subprogram includes Program Readiness and the Capability Based Facilities and Infrastructure (CBFI) initiative.

This 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 programmatic needs of the NNSA. These crosscutting investments address needs beyond any single facility, Campaign, or weapon system and are essential to achieving the objectives of the NNSA nuclear security enterprise. Program Readiness supports these objectives by providing the funding for the DOE Nuclear Criticality Safety Program (NCSP); supporting the DOE Nuclear Safety R&D effort; programmatic investments at SNL and NNSS; and providing the critical worker skills needed at laboratories, plants, and experiment site.

CBFI is a facility investment strategy that provides targeted, incremental investments for life-extension of enduring facilities and infrastructure required to sustain required program capability. CBFI will execute infrastructure improvements needed to support validated DSW and Campaign program requirements.

CBFI is differentiated from the current Operations of Facilities subprogram, as it focuses on life-extension of critical DSW and Campaign program infrastructure in support of workload and capability sustainment. Meanwhile, Operations of Facilities provides for the daily operations, infrastructure, maintenance, staffing, and safety requirements.

Sequence

This is not applicable for this section.

Benefits

- Provides cross-cutting, multi-program technical and infrastructure support to the nuclear security enterprise.
- Program Readiness ensures that the critical skills required to execute DSW and Campaign activities are current and available, while providing the expertise in the field of Nuclear Criticality Safety to support safe, efficient, fissionable material operations within the DOE. Such nuclear safety expertise provides activities to influence the technical foundation for authorization basis and decision making.
- The CBFI subprogram focuses on execution of prioritized infrastructure improvements to sustain core nuclear weapon capabilities needed for nuclear weapons mission.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• This subprogram begins in FY 2013. Activities were conducted under the Program Readiness subprogram.	**0**
FY 2012	• This subprogram begins in FY 2013. Activities were conducted under the Program Readiness subprogram.	**0**
FY 2013	• The DOE NCSP continues to sustain expert leadership, direction, and technical infrastructure necessary to develop, maintain and disseminate the essential technical tools, training and data required to support safe, efficient fissionable material operations within DOE. A major function of the NCSP is to provide integral nuclear data experimental capability and nuclear criticality safety training for criticality safety engineers by operating NCERC at the NNSS and the Sandia Critical Experiments Facility. In addition, the NCSP has entered into collaboration with France to establish and jointly operate a solution criticality experiments facility in Valduc.	**166,945**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	• At NNSS, Program Readiness supports the operations of the three major laboratories at the site (LLNL, LANL, and SNL). This support includes NSTec personnel both at the NNSS and NLV; vehicles; communication recharges; materials and equipment subcontracts; Defense Experimentation & Stockpile Stewardship management and personnel assigned to multiple projects across the NNSS and North Las Vegas complex; Test Readiness; and Legacy Compliance including environmental remediation of legacy facility-related contaminations. • Continues to 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. • Continues to provide the training, development, and technical apprenticeship of new associates for critical skills at NNSA laboratories and production plants, along with the technical resource pipeline and production assurance required to sustain critical production and engineering capabilities. At Sandia, Program Readiness provides major funding for technology development R&D to innovate and move new NSE technologies from concept through reducing the Technical Risk Levels until they are ready for mission application. In addition, Program Readiness plays a key role in QASPR, supports the WIP, and provides operational funding for the Cygnus x-ray capability at the NNSS U1a. • Provides for the operation of the Primary Standards Laboratory (PSL) in FY 2013 due to the crosscutting mission at PSL for all of DOE. • At the Kansas City Plant, Program Readiness provides funding to hire, train and qualify the new technical workers needed to support the transition from the Bannister facility to the Botts Road facility. • Provides Infrastructure investment for life extension of existing facilities and infrastructure to sustain the capability with a corresponding reduction in the infrastructure risk to the mission. CBFI will provide funding to implement projects across the nuclear security enterprise, such as: o At LANL, critical facility Fire Detection and Alarm System Replacement, and Mission Critical Electrical Breaker Installation. o At LLNL, mission critical chiller replacements (Bldg 581 and B453). o At NNSS, DAF fire system upgrades, modernization of DAF Linac equipment and U1a Upgrades, and replace DAF Fire Suppression Systems Lead-in Piping. o At Pantex, revitalization of the infrastructure for weapons operations during assembly/disassembly operations. o At Sandia, improvements to the silicon fabrication capability, and infrastructure improvements at TTR. o At SRS, revitalization of systems and equipment in H-Area New Manufacturing (HANM). o At Y12, mission critical infrastructure needed to support continuity of enriched uranium (EU) capability and upgrade of critical nuclear utilities. • CBFI will provide for priority roof replacement projects executed using the established process for the Roof Asset Management Program (RAMP).	
FY 2014-FY 2017	• The DOE NCSP continues to sustain expert leadership, direction, and technical infrastructure necessary to develop, maintain and disseminate the essential technical tools, training and data required to support safe, efficient fissionable material operations within DOE. A major function of the NCSP is to provide integral nuclear data experimental capability and nuclear criticality safety training for criticality safety engineers by operating the NCERC at the NNSS and the Sandia	**TBD**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	Critical Experiments Facility. In addition, the NCSP has entered into collaboration with France to establish and jointly operate a solution criticality experiments facility in Valduc. • At NNSS, Program Readiness supports the operations of the three major laboratories at the site (LLNL, LANL, and SNL). This support includes NSTec personnel both at the NNSS and NLV; vehicles; communication recharges; materials and equipment subcontracts; Defense Experimentation & Stockpile Stewardship management; and personnel assigned to multiple projects across NNSS and North Las Vegas complex; Test Readiness; and Legacy Compliance including environmental remediation of legacy facility-related contaminations. • Continues to 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. • Continues to provide the training, development, and technical apprenticeship of new associates for critical skills at NNSA production plants, along with the technical resource pipeline and production assurance required to sustain critical production and engineering capabilities. • At Sandia, Program Readiness provides major funding for technology development R&D to innovate and move new nuclear security enterprise technologies from concept through reducing the Technical Risk Levels until they are ready for mission application. In addition, Program Readiness plays a key role in QASPR, supports the WIP, and provides operational funding for PSL, and the Cygnus x-ray capability at the NNSS U1a. • Provides Infrastructure investment for life extension of existing facilities and infrastructure to sustain the capability with a corresponding reduction in the infrastructure risk to the mission. CBFI will provide funding to implement projects across the nuclear security enterprise, such as: o At LANL, critical Radioactive Liquid Waste Treatment processing systems, LINAC cooling water revitalization, static variable compensator controls replacement and code compliance in plutonium operations. o At LLNL, inert High Explosive (HE) machine shop refurbishment, HE synthesis pilot plant refurbishment, multiple boiler replacements, and Mission Essential HVAC and electrical facility revitalization. o At NNSS, DAF fire system upgrades, modernization of U1a infrastructure to support subcritical experiments, electrical system upgrades, fire alarms and DAF Fire Suppression Systems Lead-in Piping. o At Pantex, revitalization of the infrastructure for weapons operations during assembly/disassembly operations, metrology lab environmental controls, and production facility environmental controls to support LEPs. o At Sandia, improvements to the silicon fabrication capability, infrastructure improvements at TTR, standby generator upgrades, and sanitary sewer system improvements. o At SRS, revitalization of systems and equipment in HANM. o At Y12, mission critical infrastructure needed to support continuity of EU capability and upgrade of critical nuclear utilities, facility relocation to support reduction of high security area, and replacement of environmental control equipment in assembly facilities. • CBFI will provide for priority roof replacement projects executed using the established process for the RAMP.	

Construction
Overview

The RTBF Construction subprogram plays a critical role in revitalizing the nuclear weapons manufacturing and research and development infrastructure. Investments from this program 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 required to support the weapons programs, and (2) development and execution of these projects within approved cost and schedule baselines.

The funding request for FY 2013 reflects an acceleration of planned UPF building construction, and defers construction of the CMRR Nuclear Facility for at least five years. 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. The funding profile for UPF construction in the outyears will be updated and communicated to Congress separately in the next revision to the SSMP. NNSA has designed CMRR Nuclear Facility for the following stockpile missions: plutonium chemistry, plutonium physics, and storage of special nuclear materials. Construction has not begun on the CMRR Nuclear Facility. NNSA has determined, in consultation with the national laboratories, that existing infrastructure in the nuclear complex has the inherent capacity to provide adequate support for plutonium chemistry, plutonium physics, and special nuclear materials. NNSA proposes deferring CMRR Nuclear Facility construction for at least five years. Studies are ongoing to determine long-term requirements. Instead of the CMRR Nuclear Facility, NNSA will maximize use of existing facilities and relocate some nuclear materials. Estimated cost avoidance from FY 2013 to FY 2017 totals approximately $1.8 billion.

In place of the CMRR Nuclear Facility for plutonium chemistry, NNSA will maximize use of the recently constructed Radiological Laboratory and Utility Office Building that will be fully equipped in April 2012, approximately one year ahead of schedule. In place of CMRR Nuclear Facility for plutonium physics, NNSA has options to share workload between other existing plutonium-capable facilities at Los Alamos and Lawrence Livermore National Laboratories.

In place of CMRR Nuclear Facility for nuclear material storage, the budget request includes $35 million to accelerate actions that process, package, and dispose of excess nuclear material and reduce material at risk in the plutonium facility at Los Alamos. If additional space for special nuclear material is required, NNSA can stage plutonium for future program use in the Device Assembly Facility in Nevada. The Office of Secure Transportation Asset will execute shipments as needed.

Sequence

This is not applicable for this section.

Benefits

The RTBF Construction subprogram is important to the continuity of capabilities for nuclear weapons manufacturing and research and development mission requirements. Construction investments support design and construction of facilities that support the nuclear security enterprise, improving the responsiveness and/or functionality of the infrastructure and its technology base. Construction is a vital element of the revitalization of the infrastructure of the nuclear security enterprise.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Completed and approved CD-4 for the Beryllium Capability Project at Y-12. • Completed and approved CD-4 for the Criticality Experiments Facility Project at the NNSS. • Completed the Ion Beam Laboratory Project at SNL. • Established a revised performance baseline for the High Explosives Pressing Facility at PX and awarded a construction contract. • Approved CD-0, Mission Need, for one new project: electrical utility upgrade	**388,218**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	project at LANL and LLNL. • Established baseline for Phase A (Site Development) of the Transuranic (TRU) Waste Facility at LANL.	
FY 2012	• Construction of the Radiological Laboratory/Utility/Office Building (RLUOB) was completed in FY 2010, and installation of associated equipment is underway and ahead of schedule. • The UPF project planning activities include several packages for smaller, more manageable construction subprojects with individual performance baselines. • Started construction work on Phase A (Site Development), and established baseline for Phase B (Staging and Characterization Facilities) of the TRU Waste Facility at LANL. • The TA-55 Reinvestment Project Phase II (TRP II) activities consist of the final design scope for TRP II. • The Nuclear Facility Risk Reduction (NFRR) Project at Y-12 construction activities are underway. • The Test Capabilities Revitalization–Phase II (TCR-II) Project at SNL construction activities continue in FY 2012. • The High Explosive Pressing Facility (HEPF) at Pantex construction activities are ramping up to the full tempo.	**511,108**
FY 2013	• Approve total project baseline. Accelerate planned construction activities for the UPF at Y-12. • Continue Phase A and Phase B and start Phase C construction activities for the TRP II, at LANL. • Start construction of TRU Waste Facility Phase B. • Continue construction activities for NFRR at Y-12, TCR-II at SNL, and HEPF at Pantex. • Begin design activities associated with the Lawrence Livermore National Laboratory associated scope of the Electrical Infrastructure Upgrades Project.	**450,134**
FY 2014-FY 2017	• Continue construction for the Uranium Processing Facility at Y-12. • Plan to start the TA-55 Reinvestment Project Phase III in FY 2015. • In FY 2016, for the TRU Waste Facility project, complete construction and begin operations, and close out of the project in FY 2017.	**TBD**

Capital Operating Expenses and Construction Summary

Capital Operating Expenses[a]

(dollars in thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Capital Operating Expenses			
General Plant Projects	15,869	16,218	16,575
Capital Equipment	28,920	29,556	30,206
Total, Capital Operating Expenses	**44,789**	**45,774**	**46,781**

Outyear Capital Operating Expenses

(dollars in thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request
Capital Operating Expenses				
General Plant Projects	16,940	17,313	17,694	18,083
Capital Equipment	30,871	31,550	32,244	32,953
Total, Capital Operating Expenses	**47,811**	**48,863**	**49,938**	**51,036**

[a] Funds are appropriated for Operations and Maintenance, which includes operating expenses, capital equipment and general plant projects. The program no longer budgets separately for capital equipment and general plant projects. Funding shown reflects estimates based on actual FY 2011 obligations.

Construction Projects[a]

(dollars in thousands)

	Total Estimated Cost (TEC)	Prior Year Appro-priations	FY 2011 Current	FY 2012 Enacted	FY 2013 Request	Unappropriated Balance
13-D-301, Electrical Infrastructure Upgrades, LLNL/LANL	48,000	0	0	0	23,000	25,000
12-D-301, TRU Waste Facilities, LANL	65,807	0	0	9,881	24,204	31,722
11-D-801, TA-55 Reinvestment Project, Phase 2, LANL	69,528	0	19,960	10,000	8,889	30,679
10-D-501, Nuclear Facility Risk Reduction (NFRR), Y-12	65,796	12,500	0	35,387	17,909	0
09-D-404, Test Capabilities Revitalization-II, SNL	42,804	6,304	0	25,168	11,332	0
08-D-802, High Explosive Pressing Facility, PX [b]	132,509	613	29,940	66,960	24,800	10,196
07-D-220, Radioactive Liquid Waste Treatment Facility Upgrade, LANL [c]	TBD	10,000	0	0	0	TBD
07-D-140, Project Engineering & Design, VL	18,193	9,675	4,990	3,518	0	0
06-D-141, PED/Construction, Uranium Processing Facility, Y-12	TBD	94,000	114,786	160,194	340,000	TBD
06-D-140, Project Engineering & Design, VL	192,929	188,929	3,992	0	0	0
04-D-125, Chemistry and Metallurgy Research Facility Replacement (CMRR), LANL	TBD	425,832	214,550	200,000	0	TBD
			388,218	**511,108**	**450,134**	

Outyear Construction Projects

The outyear numbers for Weapons Activities do not reflect programmatic requirements. Rather, they are an extrapolation of the FY 2013 request based on rates of inflation in the Budget Control Act of 2011. The Administration will develop outyear funding levels based on actual programmatic requirements at a later date.

[a] The TEC estimate is for design only for the PED projects included in 07-D-140 and 06-D-140.

[b] $41,781 in previously appropriated funding for 08-D-802, High Explosive Pressing Facility, PX were directed to be used as a use of prior year balance offset by the Energy and Water Development and Related Agencies Appropriations Act, 2010 (P.L. 111-85).

[c] $30,332 in prior year appropriations were rescinded in FY 2011. Future funding requirements for RLWTF are yet to be determined.

Major Items of Equipment (MIE)

(dollars in thousands)

	Type	Total	Prior-Year Appro-priations	FY 2011 Current	FY 2012 Enacted	FY 2013 Request	Unappro-priated Balance	Completion Date
Calciner, Y-12	TPC	11,500	0	0	0	5,000	6,500	2015
	TEC	10000						
	OPC	1,500						
Electrorefiners, Y-12	TPC	19,900	0	0	0	7,000	12,900	2015
	TEC	14,900						
	OPC	5,000						
Total, Major Items of Equipment				**0**	**0**	**12,000**		

Outyear Major Items of Equipment (MIE)

(dollars in thousands)

	Type	Total	FY 2014	FY 2015	FY 2016	FY 2017
Calciner, Y-12	TPC	11,500	TBD	TBD	TBD	TBD
	TEC	10000				
	OPC	1,500				
Electrorefiners, Y-12	TPC	19,900	TBD	TBD	TBD	TBD
	TEC	14,900				
	OPC	5,000				
Total, Outyear Major Items of Equipment			TBD	TBD	TBD	TBD

13-D-301, Electrical Infrastructure Upgrades,
Lawrence Livermore National Laboratory, Livermore, California
Los Alamos National Laboratory, Los Alamos, New Mexico
Project Data Sheet (PDS) is for Design and Construction

1. Significant Changes

The most recent DOE O 413.3B approved Critical Decision (CD) is CD-0, approved on August 31, 2011, with a preliminary cost range of $33,400 to $55,400 and CD-4 of FY 2016.

A Federal Project Director has been assigned to this project.

This 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	PED Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2013	08/31/11	2Q FY2012	2Q FY 2015	2Q FY 2014	2Q FY 2014	2Q FY 2016	2Q FY 2016	3Q FY 2016

Subproject 13-D-301-01, LLNL

(fiscal quarter or date)[a]

	CD-0	CD-1	PED Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2013	08/31/11	2Q FY 2012	2Q FY 2014	2Q FY 2013	2Q FY 2013	2Q FY 2015	NA	NA

Subproject 13-D-301-02, LANL

(fiscal quarter or date)[a]

	CD-0	CD-1	PED Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2013	08/31/11	2Q FY 2012	2Q FY 2015	2Q FY 2014	2Q FY 2014	2Q FY 2016	2Q FY 2016	3Q FY 2016

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 schedules are only estimates and are consistent with the high end of the schedule ranges.

3. Baseline and Validation Status

(dollars in thousands)[a]

	TEC, PED	TEC, Construction	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
FY 2013	5,000	43,000	48,000	5,400	NA	5,400	53,400

Subproject 13-D-301-01, LLNL

(dollars in thousands) [a]

	TEC, PED	TEC, Construction	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
FY 2013	2,000	21,000	23,000	2,400	NA	2,400	25,400

Subproject 13-D-301-02, LANL

(dollars in thousands) [a]

	TEC, PED	TEC, Construction	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
FY 2013	3,000	22,000	25,000	3,000	0	3,000	28,000

4. Project Description, Justification, and Scope

Mission Need

Provide reliable and efficient electrical distribution systems with sufficient electrical capacity to support the national security missions at both sites. The electrical distribution systems and infrastructures were built over 50 years ago. As a result, the system are at capacity and have substantial distribution imbalances based on the power demands from mission growth over the many years of operations and struggle to meet the Laboratories' current demand for power . In addition, the Department is required to supply power to the Los Alamos County, where the power demand is steadily growing as well. If these systems are not upgraded and updated, then current development and progress will be hampered.

Scope and Justification - 13-D-301, Electrical Infrastructure Upgrades

The scope will include replacing the Technical Area (TA)-3 substation at LANL with a larger, modern substation and components designed to provide increased distribution capacity, improved reliability, reduced maintenance, and support for greater operational flexibility. It also includes expansion of the electrical distribution systems at LLNL along the east side of the site with underground duct bank and load grid switchgear. An alternate source of power will also be provided to the Sandia-CA site.

The electrical infrastructure upgrades may require several improvements to fully support future mission assignments. This first upgrade is intended to address the most urgent electrical infrastructure need at each Laboratory. Electrical upgrades may be required at both Laboratories in the future, as electrical power needs increase with mission projections. This project is an important step in revitalizing the electrical infrastructure to provide reliable service and capacity; and to enable DOE and NNSA to carry out mission critical programs at both sites.

The capability to safely and reliably distribute adequate electrical power is critical to the successful accomplishment of the LLNL and LANL Stockpile Stewardship missions. This capability is considered key to the infrastructure needs of the site, and it must operate continuously without interruption. Consistent with the long-term mission requirement, this capability must have a minimum service life of 40 years to align its availability with planned strategic mission timeframes.

[a] The numbers are only estimates and are consistent with the high end of the cost ranges of the approved CD-1.

In addition, this upgrade will provide the versatility to adapt to increasingly stringent safety, security, environmental regulations, and new technology. Inherent in this capability is the minimization (to the greatest extent possible) of environmental impacts and construction waste produced as a result of this upgrade.

Subproject 13-D-301-01, Electrical Infrastructure Upgrades, LLNL

Supplement the existing distribution system with new 15kV underground electrical distribution systems, load grid switchgear, and connection for additional future electrical supply. These upgrades will correct single-point-of-failure electrical distribution concerns and provide additional capacity on the site's east side. The new underground 15kV electrical distribution system will serve the eastern side of the Lawrence Livermore Laboratory site.

Subproject 13-D-301-02, Electrical Infrastructure Upgrades, LANL

Replace the existing Technical Area (TA)-3 substation with a larger, modern substation and components designed to provide increased distribution capacity, improved reliability, reduced maintenance, and greater operational flexibility. Increase TA-3 Substation capacity to 112 MVA (Megavolt Ampere). A new substation with increased capacity, reduced maintenance, and increased worker safety that will provide separate power feeds to both the Laboratory and to Los Alamos County.

	Key Performance Parameter
TA-3 Substation Limit (LANL)	Increased distribution and improved reliability
Power Demand (LLNL)	Increased electrical capacity and reliability

Risk Driver	Risk Description	Risk Handling
Technical Risks	Increased electrical load requirements before upgrade is completed.	Accept, but perform more accurate estimate during the conceptual phase.
Capacity Risk	Programmatic need date is accelerated.	Accept. Work with the program staff and forecast program needs in the next four to five years during the conceptual phase.
Project Execution Risk	Working in existing facilities and sequencing installation, testing and turnover.	Accept. Attend facilities plan of the day, plan of the week meetings and develop interface plan during the conceptual phase.

More detailed risk analysis will be performed as the project transition to the conceptual and execution phases.

No construction funds will be used until the project performance baseline has been validated and CD-3 has been approved.

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

Subproject 13-D-301-01, LLNL

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED			
FY 2013	2,000	2,000	1,500
FY 2014	0	0	500
Total, Design	2,000	2,000	2,000
Construction			
FY 2013	21,000	21,000	15,000
FY 2014	0	0	5,000
FY 2015	0	0	1,000
Total, Construction	21,000	21,000	21,000
TEC			
FY 2013	23,000	23,000	16,500
FY 2014	0	0	5,500
FY 2015	0	0	1,000
Total, TEC	23,000	23,000	23,000
Other Project Cost (OPC)			
OPC except D&D			
FY 2011	250	250	250
FY 2012	750	750	750
FY 2013	500	500	500
FY 2014	800	800	800
FY 2015	100	100	100
Total, OPC except D&D	2,400	2,400	2,400
D&D			
Total, D&D	NA	NA	NA
Total OPC	2,400	2,400	2,400
Total Project Cost (TPC)			
FY 2011	250	250	250
FY 2012	750	750	750
FY 2013	23,500	23,500	17,000
FY 2014	800	800	6,300
FY 2015	100	100	1,100
Total, TPC	25,400	25,400	25,400

Subproject 13-D-301-02, LANL

(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED			
FY 2014	3,000	3,000	2,500
FY 2015	0	0	500
Total, Design	3,000	3,000	3,000
Construction			
FY 2014	22,000	22,000	15,000
FY 2015	0	0	5,000
FY 2016	0	0	2,000
Total, Construction	22,000	22,000	22,000
TEC			
FY 2014	25,000	25,000	17,500
FY 2015	0	0	5,500
FY 2016	0	0	2,000
Total, TEC	25,000	25,000	25,000
Other Project Cost (OPC)			
OPC except D&D			
FY 2011	250	250	250
FY 2012	150	150	150
FY 2013	1,000	1,000	1,000
FY 2014	800	800	800
FY 2015	100	100	100
FY 2016	700	700	700
Total, OPC except D&D	3,000	3,000	3,000
D&D			
Total, D&D	0	0	0
Total OPC	3,000	3,000	3,000
Total Project Cost (TPC)			
FY 2011	250	250	250
FY 2012	150	150	150
FY 2013	1,000	1,000	1,000
FY 2014	25,800	25,800	18,300
FY 2015	100	100	5,600
FY 2016	700	700	2,700
Total, TPC	28,000	28,000	28,000

6. Details of Cost Estimate

Subproject 13-D-301-01, LLNL

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED)			
Design	1,500	NA	NA
Contingency	500	NA	NA
Total, PED	2,000	NA	NA
Construction			
Site Preparation	500	NA	NA
Equipment	3,000	NA	NA
Other Construction	15,000	NA	NA
Contingency	2,500	NA	NA
Total, Construction	21,000	NA	NA
Total, TEC	23,000	NA	NA
Contingency, TEC	3,000	NA	NA
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	250	NA	NA
Conceptual Design	770	NA	NA
Start-up	800	NA	NA
Contingency	580	NA	NA
Total, OPC except D&D	2,400	NA	NA
D&D	NA	NA	NA
D&D	NA	NA	NA
Contingency	NA	NA	NA
Total, D&D	NA	NA	NA
Total, OPC	2,400	NA	NA
Contingency, OPC	580	NA	NA
Total, TPC	25,400	NA	NA
Total, Contingency	3,580	NA	NA

Subproject 13-D-301-02, LANL

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED)			
Design	2,500	NA	NA
Contingency	500	NA	NA
Total, PED	3,000	NA	NA
Construction			
Site Preparation	500	NA	NA
Equipment	8,000	NA	NA
Other Construction	11,000	NA	NA
Contingency	2,500	NA	NA
Total, Construction	22,000		0
Total, TEC	25,000	NA	NA
Contingency, TEC	3,000	NA	NA
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	250	NA	NA
Conceptual Design	770	NA	NA
Start-up	1,000	NA	NA
Contingency	980	NA	NA
Total, OPC except D&D	3,000	NA	NA
D&D			
D&D	0	0	0
Contingency	0	0	0
Total, D&D	0	0	0
Total, OPC	3,000	NA	NA
Contingency, OPC	980	NA	NA
Total, TPC	28,000	NA	NA
Total, Contingency	3,980	NA	NA

7. Schedule of Appropriation Requests

Subproject 13-D-301-01, LLNL

(dollars in thousands)

		Prior Years	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Outyears	Total
FY 2013	TEC	0	0	23,000	0	0	0	0	0	23,000
	OPC	250	750	500	800	100	0	0	0	2,400
	TPC	250	750	23,500	800	100	0	0	0	25,400

Subproject 13-D-301-02, LANL

(dollars in thousands)

		Prior Years	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Outyears	Total
FY 2013	TEC	0	0	0	25,000	0	0	0	0	25,000
	OPC	250	150	1,000	800	100	700	0	0	3,000
	TPC	250	150	1,000	25,800	100	700	0	0	28,000

8. Related Operations and Maintenance Funding Requirements

Start of Operation of Beneficial Occupancy (fiscal quarter or date)	4Q FY2014
Expected Useful Life (number of years)	40
Expected Future Start of D&D of this capital asset (fiscal quarter)	NA

(Related Funding Requirements)[a]

Subproject 13-D-301-01, LLNL

(dollars in thousands)

	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	500	NA	20,000	NA
Maintenance	500	NA	20,000	NA
Total, Operations and Maintenance	1,000	NA	40,000	0

Subproject 13-D-301-02, LANL

(dollars in thousands)

	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	1,000	NA	40,000	NA
Maintenance	1,000	NA	40,000	NA
Total, Operations and Maintenance	2,000	NA	80,000	NA

[a] This upgrade will increase the electrical systems capacity at the two sites. The maintenance and operations cost may not be significantly increased over the current amounts because more efficient system will be installed. However, a life-cycle cost analysis will be performed during the conceptual design to select the most cost-effective alternative. Upon completion of the alternative analysis, the costs for the operations and maintenance will be established.

9. Required D&D Information

Area	Square Feet
Area of new construction	NA
Area of existing facility(s) being replaced	NA
Area of additional D&D space to meet the "one-for-one" requirement	NA

Name(s) and site location(s) of existing facility(s) to be replaced: TA-3 substation at LANL

10. Acquisition Approach

The upgrade may be managed by the Management and Operating (M&O) Contractors as two separate awards. Both a design-build and design-bid-build to budget options will be evaluated.

The demolition of the existing TA-3 substation at LANL will not be managed by the M&O contractor. It will be executed by private salvage companies that may need the materials.

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

1. 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 August 10, 2010, with the preliminary cost range of $71,000 to $124,000 and a preliminary CD-4 range of FY 2015 to FY 2018.

The most recent DOE O 413.3B approved CD for Phase A Site Development is CD-2, Approve Performance Baseline. This was approved on July 18, 2011, with the Total Project Cost (Phase A) of $9,212 and CD-4 date of July 9, 2013.

The CD-2 for Phase B, Staging and Characterization Facilities, cost and schedule were reviewed and accepted by the Technical Independent Review team in October 2011. The reviewed Total Project Cost (Phase B) is $84,778 and CD-4 is August 22, 2017. CD-2 will be approved upon completion of the 90 percent final design, a commitment the Administrator of the National Nuclear Security Administration made to the Congress in March 2011.

The Resource Conservation and Recovery Act (RCRA) Permit was submitted to the State of New Mexico in August 2011. The permit is expected to be issued in the fourth quarter of FY 2012.

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 2012 PDS.

2. Design, Construction, and D&D Schedule

(fiscal quarter or date)

	CD-0	CD-1	PED Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2012	2/07/2006	8/10/2010	TBD	TBD	TBD	TBD	N/A	N/A
FY 2013[a]	2/07/2006	8/10/2010	6/15/2013	8/22/2012	8/23/2013	8/22/2017	N/A	N/A

Phase A: Site Development

(fiscal quarter or date)

	CD-0	CD-1	PED Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2012	2/07/2006	8/10/2010	7/06/2011	3/09/2011	1/09/2012	2/01/2013	N/A	N/A
FY 2013	2/07/2006	8/10/2010	9/30/2011	7/18/2011	2/24/2012	7/09/2013	N/A	N/A

Phase B: Staging and Characterization Facilities[a]

(fiscal quarter or date)

	CD-0	CD-1	PED Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2012	2/07/2006	8/10/2010	TBD	TBD	TBD	TBD	N/A	N/A
FY 2013	2/07/2006	8/10/2010	6/15/2013	8/22/2012	8/23/2013	8/22/2017	N/A	N/A

[a] The schedule of critical decisions is only an estimate and is consistent with the high end of the schedule range.

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

(fiscal quarter or date)

	TEC, PED	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

Phase A: Infrastructure and Site Improvements

(fiscal quarter or date)

	TEC, PED	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	3,136	5,636	8,772	440	N/A	440	9,212

Phase B: Staging and Characterization Facilities

(fiscal quarter or date)

	TEC, PED	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

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. Closure of MDA G is scheduled to start in FY 2013 and existing facilities and waste handling capabilities will be used on an interim basis for newly generated TRU waste until the replacement facilities become operational.

Phase A: Site Development Scope

The scope will be limited to infrastructure development (such as construction of site utilities) to prepare the selected site for the construction of Phase B Staging and Characterization Facilities. Construction of the Staging and Characterization Facilities 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 can be completed without a RCRA Permit and is required to facilitate approval of the permit.

FY 2013 activities include completion of Phase A activities.

Phase B: Staging and Characterization Facilities Scope
The scope involves the design, construction, and installation of facilities to store and characterize newly generated TRU waste prior to transport to the Waste Isolation Pilot Plant (WIPP) in Carlsbad, New Mexico. The facilities are 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 and Non-Defense Programs projected generation waste.

FY 2013 activities include completing design, obtaining authorizations for RCRA permit modifications and CD-3, Start of Construction.

Key Performance Parameters
Phase A

Utility Relocation – Utilities shall be relocated so as not to impact critical missions or programs at LANL. Existing utility sizing provides sufficient capacity to accommodate the new TRU Waste Facility.

Phase B

RCRA permit modification is approved by the State of New Mexico Environmental Department.

The TRU Waste capability must be able to characterize and certify that TRU waste containers meet the WIPP waste acceptance criteria.

Risks

Risk Driver	Handling Strategy
A RCRA Permit modification is not approved by the state to support CD-3 Start of Construction	1. Mitigate: Since the issuance of CD-1, the project team has been meeting with State Environmental Division. 2. Permit approval is expected no later than 4Q FY2012. 3. Construction may begin on a Class 2 permit modification if the State does not respond within regulatory time limits.

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 to provide independent assessments of the planning and execution of this project.

5. Financial Schedule

(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	6,170
FY 2012	3,518	3,518	9,997
FY 2013	0	0	1,667
Total, PED (07-D-140-02)	18,183	18,183	18,183
Construction			
FY 2012	9,881	9,881	6,467
FY 2013	24,204	24,204	26,000
FY 2014	31,722	31,722	25,000
FY 2015	0	0	8,340
Total, Construction	65,807	65,807	65,807
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	6,170
FY 2012	13,399	13,399	16,464
FY 2013	24,204	24,204	27,667
FY 2014	31,722	31,722	25,000
FY 2015	0	0	8,340
Total, TEC	83,990	83,990	83,990
Other Project Cost (OPC)			
OPC except D&D			
FY 2007	1,297	1,297	1,297
FY 2008	1,784	1,784	1,784
FY 2009	959	959	959
FY 2010	2,417	2,417	2,417
FY 2011	1,661	1,661	1,661
FY 2012	942	942	942
FY 2013	100	100	100
FY 2014	100	100	100
FY 2015	740	740	740
Total, OPC except D&D	10,000	10,000	10,000
D&D			
FY 2012	N/A	N/A	N/A
Total, D&D	N/A	N/A	N/A

	(dollars in thousands)		
	Appropriations	Obligations	Costs
OPC			
FY 2007	1,297	1,297	1,297
FY 2008	1,784	1,784	1,784
FY 2009	959	959	959
FY 2010	2,417	2,417	2,417
FY 2011	1,661	1,661	1,661
FY 2012	942	942	942
FY 2013	100	100	100
FY 2014	100	100	100
FY 2015	740	740	740
Total, OPC	10,000	10,000	10,000
Total Project Cost (TPC)			
FY 2007	1,297	1,297	1,297
FY 2008	4,236	4,236	1,784
FY 2009	8,182	8,182	959
FY 2010	2,417	2,417	2,766
FY 2011	6,651	6,651	7,831
FY 2012	14,341	14,341	17,406
FY 2013	24,304	24,304	27,767
FY 2014	31,822	31,822	25,100
FY 2015	740	740	9,080
Total, TPC	93,990	93,990	93,990

6. Details of Cost Estimate

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED) (07-D-140-02)			
Design	14,675	14,675	14,675
Contingency	3,508	3,518	3,508
Total, PED	18,183	18,193	18,183
Construction			
Site Preparation	6,772	9,881	6,772
Equipment	6,000	TBD	6,000
Other Construction	37,140	TBD	37,140
Contingency	15,895	TBD	15,895
Total, Construction	65,807	TBD	65,807
Total, TEC	83,990	TBD	83,990
Contingency, TEC	19,403	TBD	19,403
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	1,500	1,500	1,500
Conceptual Design	2,700	2,700	2,700
Start-up	4,000	TBD	4,000
Contingency	1,800	TBD	1,800
Total, OPC except D&D	10,000	TBD	10,000
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	10,000	TBD	10,000
Contingency, OPC	1,800	TBD	1,800
Total, TPC	93,990	TBD	93,990
Total, Contingency	21,203	TBD	21,203

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

8. Related Operations and Maintenance Funding Requirements

Start of Operation of Beneficial Occupancy (fiscal quarter or date)	2Q FY 2016
Expected Useful Life (number of years)	50
Expected Future Start of D&D of this capital asset (fiscal quarter)	FY 2066

(Related Funding Requirements)

(dollars in thousands)

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

9. Required D&D Information

Area	Square Feet
Area of new construction	29,500
Area of existing facility(s) being replaced	550,698
Area of additional D&D space to meet the "one-for-one" requirement	None

Name(s) and site location(s) of existing facility(s) to be replaced: TA-54 Disposal Area G. Cost for this disposal 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, Staging and Characterization Facilities, and will be executed through the Management and Operating contractor organization for engineering design and a firm-fixed price construction contract. Phase B will provide the Staging and Characterization Facilities for the new TRU waste operations and will be executed through firm-fixed price design-bid-build contracts. The Management and Operating contractor will provide project, design, and construction management oversight; procure the design and construction services; and perform transition to operations activities.

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

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. At that time, the project 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. A Baseline Change was approved for the following reasons:

1. FY 2011 funding was not released to the project team until August 2011, and

2. The Documented Safety Analysis (DSA) safety strategy for TA-55 showed that only gloveboxes which handle molten plutonium require seismic stiffening. As a result, the number and phasing of gloveboxes was reduced significantly as described in each of the three phases below.

Phase A: Glovebox #1 and Air Dryers
The most recent DOE O 413.3B approved CD is CD-3 for Phase A, Approve Start of Construction that was approved on November 22, 2011 with a Total Project Cost (TPC) of $13,654 and a CD-4 date of September 2013, consistent with the latest approved baseline change on November 18, 2011. The revised scope includes seismic upgrade of only one glovebox stand, installation of three Air Dryers and demolition of the forth.

Phase B: Glovebox #2 and Confinement Doors
The most recent DOE O 413.3B approved CD is CD-2 for Phase B, Approve Performance Baseline that was approved on June 3, 2010 with a TPC of $18,203 and a CD-4 date of February 2014. The latest approved baseline change was on November 18, 2011 with a TPC $11,238 and a CD-4 date of December 2013. The scope includes seismic upgrade of one glovebox stand and replacing six confinement doors. The scope associated with the PF-7 demolition, originally a part of Phase B, will be deferred until Phase C.

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 that was approved on July 15, 2008 with a TPC not to exceed the upper range of the overall project's preliminary cost range of $99,900. That amount is currently $75,008. A performance baseline (CD-2) is anticipated in FY 2012. The Phase C project plan is being updated to reflect the revised funding profile for FY 2012 – FY 2015. The change in cost is to accommodate the demolition of PF-7, which was moved from Phase B, and the late receipt of FY 2011 funding.

This phased critical decision approach and schedule is consistent with the tailoring strategy that has been approved by the NNSA Acquisition Executive.

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 2012 PDS.

2. Design, Construction, and D&D Schedule

(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	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

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

Phase B: Glovebox 2 and Confinement Doors

(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	3QFY2010	TBD	TBD	N/A	N/A
FY 2012	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

Phase C: Glovebox 3, Exhaust Stack, UPS, Criticality Alarm System, Vault Water Tanks, and PF-7Demolition

(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	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

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, Prelim Design	TEC, Final 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

Phase A: Glovebox #1 and Air Dryers

(dollars in thousands)

	TEC, Prelim Design	TEC, Final 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

Phase B: Glovebox 2 and Confinement Doors

(dollars in thousands)

	TEC, Prelim Design	TEC, Final 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

Phase C: Glovebox 3, Exhaust Stack, UPS, Criticality Alarm System, Vault Water Tanks, and PF-7 Demolition

(dollars in thousands)

	TEC, Prelim Design	TEC, Final 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

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 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 Phase I, TRP Phase II, and TRP Phase III.

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 to provide independent assessments of the planning and execution of this line item project.

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. Upgrade 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.

Key Performance Parameters for Phase A

1. Verify replacement and successful start-up of key system components Air Dryers
2. Seismically upgrade identified GB #1 stand to Performance Category (PC) -3 requirements

Phase B: Glovebox Stand 2 and Confinement Doors:

Glovebox Stands Group 2 – Seismically upgrade the GB #2 stand.
Replace existing Plutonium Facility (PF)-4 confinement doors.

Key Performance Parameters for Phase B

1. Replacement and the acceptance of confinement doors into operations
2. Seismically upgrade identified GB #2 stand to Performance Category (PC) -3 requirements

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.

Key Performance Parameters for Phase C will be developed once the phase has been baselined at CD-2.

Risks

Risk Driver	Handling Strategy
Ongoing facility and program operations in PF-4 have the potential to impact TRP II execution	Mitigate: The project team completed interface agreements with the facility and TRP II work has been integrated.
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.
CR 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.

5. Financial Schedule

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED (06-D-140-02)			
FY 2008 [a]	1,500	1,500	24
FY 2009 [b]	8,245	8,245	3,468
FY 2010 [bc]	5,000	5,000	5,984
FY 2011	0	0	4,978
FY 2012	0	0	291
Total, PED (06-D-140-02)	14,745	14,745	14,745
Final Design (11-D-801)			
FY 2011	1,502	1,502	171
FY 2012	5,162	5,162	4,000
FY 2013	0	0	2,493
Total, Final Design	6,664	6,664	6,664
Total, Design	21,409	21,409	21,409
Construction			
FY 2011	18,458	18,458	0
FY 2012	4,838	4,838	10,773
FY 2013	8,889	8,889	16,045
FY 2014	30,679	30,679	18,179
FY 2015	0	0	13,744
FY 2016	0	0	3,271
FY 2017	0	0	852
Total, Construction	62,864	62,864	62,864
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	15,064
FY 2013	8,889	8,889	18,538
FY 2014	30,679	30,679	18,179
FY 2015	0	0	13,744
FY 2016	0	0	3,271
FY 2017	0	0	852
Total, TEC	84,273	84,273	84,273

[a] FY 2008 PED appropriation includes $421 that was transferred from TA-55 Reinvestment Project Phase I. Funding for both PED projects were appropriated under the same project line within Project 06-D-140.

[b] The actual PED costs for FY 2009 and FY 2010 were incorrectly reported in FY 2012 budget submittal.

[c] FY 2010 PED appropriations includes $1,000 that was transferred from 06-D-140-03, PED Radioactive Liquid Waste Treatment Facility Upgrade. Funding for both PED projects were appropriated under the same project data sheet.

	(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	1,343	1,343	1,343
FY 2009	90	90	90
FY 2010	319	319	319
FY 2011	1,862	1,862	1,862
FY 2012	1,500	1,500	1,500
FY 2013	1,133	1,133	1,133
FY 2014	1,783	1,783	1,783
FY 2015	2,125	2,125	2,125
FY 2016	806	806	806
FY 2017	485	485	485
Total, OPC except D&D	15,199	15,199	15,199
D&D			
FY 2017	428	428	428
Total, D&D	428	428	428
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	1,500	1,500	1,500
FY 2013	1,133	1,133	1,133
FY 2014	1,783	1,783	1,783
FY 2015	2,125	2,125	2,125
FY 2016	806	806	806
FY 2017	913	913	913
Total, OPC	15,627	15,627	15,627

	(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	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	11,500	11,500	16,564
FY 2013	10,022	10,022	19,671
FY 2014	32,462	32,462	19,962
FY 2015	2,125	2,125	15,869
FY 2016	806	806	4,077
FY 2017	913	913	1,765
Total, TPC	99,900	99,900	99,900

6. Details of Cost Estimate

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED) (06-D-140-02)	13,613	12,619	13,613
Contingency	1,132	2,065	1,132
Final Design (11-D-801)	5,243	9,930	5,243
Final Design Contingency	1,421	2,770	1,421
Total Design	21,409	27,384	21,409
Construction			
Site Preparation	0	TBD	0
Equipment	0	TBD	0
Other Construction	50,444	TBD	50,444
Contingency	12,420	TBD	12,420
Total, Construction	62,864	56,715	62,864
Total, TEC	84,273	84,099	84,273
Contingency, TEC	14,973	TBD	14,973
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	0	TBD	0
Conceptual Design	5,071	TBD	5,071
Start-up	7,774	TBD	7,774
Contingency	2,354	TBD	2,782
Total, OPC except D&D	15,199	15,477	15,627
D&D			
D&D	300	N/A	N/A
Contingency	128	N/A	N/A
Total, D&D	428	N/A	N/A
Total, OPC	15,627	15,477	15,627
Contingency, OPC	2,482	TBD	2,782
Total, TPC	99,900	99,576	99,900
Total, Contingency	17,455	TBD	17,755

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 2011	TEC	33,684	19,640	20,221	20,468	42,480	TBD	TBD	TBD	TBD
	OPC	9,388	2,800	2,600	TBD	TBD	TBD	TBD	TBD	TBD
	TPC	43,072	22,440	22,821	20,468	42,480	TBD	TBD	TBD	TBD
FY 2012	TEC	34,684	19,402	8,889	8,624	12,500	0	0	0	84,099
	OPC	6,190	2,100	1,500	2,577	2,200	910	0	0	15,477
	TPC	40,874	21,502	10,389	11,201	14,700	910	0	0	99,576
FY 2013	TEC	34,705	10,000	8,889	30,679	0	0	0	0	84,273
	OPC	7,273	1,500	1,133	1,783	2,125	806	1,007	0	15,627
	TPC	41,978	11,500	10,022	32,462	2,125	806	1,007	0	99,900

8. Related Operations and Maintenance Funding Requirements

Start of Operation of Beneficial Occupancy (fiscal quarter or date)	4QFY17
Expected Useful Life (number of years)	25
Expected Future Start of D&D of this capital asset (fiscal quarter)	4QFY40

(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 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.

10-D-501, Nuclear Facility Risk Reduction, Y-12 National Security Complex,
Oak Ridge, Tennessee
Project Data Sheet (PDS) is for Design and Construction

1. Significant Changes

The most recent DOE O 413.3B approved Critical Decision (CD) is CD-3 Approve Start of Construction that was approved on October 20, 2011 with a Total Project Cost (TPC) of $75,796 and CD-4 of 12/7/2015. Part of the contingency, established at the CD-2 time-line, was used to pay for the labor-rate increase which was identified as a potential risk when the CD-2/3A was approved.

Stack 38/48 scope was revised to a more cost effective design solution by replacing parts within the existing stacks and location. In addition, this design solution eliminated material accountability issue that would have been caused by relocating the ducts in a new location.

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 2012 PDS.

2. Design, Construction, and D&D Schedule

(fiscal quarter or date)

	CD-0	CD-1	PED Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2010	10/20/2008	TBD	TBD	TBD	TBD	TBD	TBD	TBD
FY 2012	10/20/2008	10/20/2009	12/29/2011	10/28/2010	09/30/2011	12/07/2015	N/A	N/A
FY 2013	10/20/2008	10/20/2009	09/30/2011	10/28/2010	10/20/2011	12/07/2015	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 2012	10/28/2010

CD-3A – Approve Long-Lead Equipment Procurement and minor construction and demolition

3. Baseline and Validation Status

(fiscal quarter or date)

	TEC, PED	TEC, Construction	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
FY 2010	12,500	TBD	TBD	TBD	TBD	TBD	TBD
FY 2012	6,665	59,141	65,796	10,000	N/A	10,000	75,796
FY 2013	6,255	59,541	65,796	10,000	N/A	10,000	75,796

4. Project Description, Justification, and Scope

This project is intended to extend the life of Buildings 9212 and 9204-2E at the Y-12 National Security Complex until the Uranium Processing Facility becomes operational. The mission critical equipment that will be upgraded was selected through a risk-informed analysis that was performed by a team of internal and external experts over a two-year period. The team reviewed the conditions of over 50 systems serving the two buildings and selected ten from the list that were found to be most important to the two buildings safety and operational efficiency.

Buildings 9212 and 9204-2E are needed to continue NNSA missions at Y-12. The 9212 facility represents the heart of the enriched uranium operations at Y-12. Process support systems in both facilities are showing significant age-related deficiencies that have impacted reliability and, in some cases, prevented operation of many of the processes or obtaining desired production capabilities.

Continued safe operation of 9212 and 9204-2E supports Defense Program missions, non-proliferation mission, and Naval Reactor mission. Although the 9204-2E facility is a newer facility, its process support systems are of an equivalent age and are also experiencing age-related failures. Replacement parts are no longer available for several of the failing components causing extended delays in repairing and returning to service failed systems. Some components are failing in a manner that is adversely impacting the 9204-2E structure. Other systems are experiencing failures that are adversely impacting 9204-2E missions.

Building 9204-2E houses operations essential to weapons production, certification, evaluation, life-extension, storage, and retirement. Continued safe operation of Building 9204-2E is essential for continued viability of the on-going weapon stockpile including disassembly, quality evaluation, and life-extension operations, availability of feedstock for 9212 in support of its missions including dismantlement of retired nuclear weapons, and alleviation of current and future material storage constraints.

Scope

	Brief Description
System	**Building 9212 Scope**
Steam distribution system	Replace degraded steam line and pressure-reducing stations in Building 9212.
Cooling Tower water	Dismantle and remove (D&R) final tie-ins and replace at same location; Install new piping and valves in an alternate location. Not included in the scope is the removal of the abandoned equipment.
Motor Control Centers (MCC) 231-1A, 354-1A	D&R the old MCC (231-1A) and install a new Power Panel in a nearby location. D&R the old MCC (354-1A) and Install a new, smaller MCC in an alternate location.
Switchgear 218	D&R the old switchgear and install new switchgear in the same location.
Switchgears 221 / 308	Provide new switchgear breakers and install in the existing locations.
Stack 33 automatic control system	Install a manually operated damper control system to replace the current (inoperable) automatic system.
Casting furnace vacuum system pumps	D&R two of the existing vacuum pumps and install new ones in the same location.
Stacks 110 and 43 fans, motors, and filter housings	Install new equipment in an alternate location, route exhaust flows to the existing stack 110. D&R Stack 43.
Stacks 38, and 48 fans, motors, and filter housings	Provide a reliable source of ventilation for key processes in Building 9212. Stack 38 – Replace HEPA filter, fan, and motor. Optimize airflow by removing ductwork associated with unused processes and hoods, Stack 48 – Replace fan and motor. Install mist eliminators in glove-box. Rework exterior ductwork to eliminate pooling of water. Repair/repaint existing platform.

	Brief Description
System	**Building 9212 Scope**
Stack 27 ductwork	Replace ductwork in basement by providing an alternate routing exterior to the building to a combination of new roof exhaust fans and Stack 28, not located in the head house basement. D&R of the existing stack and associated equipment in the basement is not included in the NFRR scope.
	9204-2E Scope
Kathabar system replacement	Upgrade the Kathabar 3350 system.

System	Key Performance Parameters
Steam distribution system	Replace degraded steam line and pressure-reducing stations with minimum disruptions to the facility operations and interference with security posture.
Motor Control Centers (MCC) 231-1A, 354-1A	New MCCs must be more energy efficient and installed with minimum disruption to on-going operations and interference with security posture.
Switchgear 218	New switchgear must be more energy efficient and installed with minimum disruption to on-going operations and interference with security posture.
Stacks 110 and 43 fans, motors, and filter housings	Install new equipment in an alternate location such that maintenance and operations become less dependent on personnel.
Kathabar system replacement	Upgrade the Kathabar 3350 system with more energy efficient system and less corrosive dehumidifier gas.

Risk Driver	Risk Description	Handling Strategy
Funding Uncertainties	During potential continuing resolution, project may not receive sufficient funding to execute the baseline scope consistent with the baseline schedule.	Mitigate: Plan to cost at the 1/12 of funds authorized in the CR. Limit construction to long-lead items procurement and selected activities until funding becomes available.

FY 2013 activities include start of construction.

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

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)			
PED			
FY 2010 [ab]	6,255	6,255	2,633
FY 2011	0	0	3,622
Total, PED	6,255	6,255	6,255
Construction			
FY 2010	6,245	6,245	0
FY 2011	0	0	2,254
FY 2012	35,387	35,387	12,197
FY 2013	17,909	17,909	26,578
FY 2014	0	0	12,665
FY 2015	0	0	5,847
Total, Construction	59,541	59,541	59,541
TEC			
FY 2010	12,500	12,500	2,633
FY 2011	0	0	5,876
FY 2012	35,387	35,387	12,197
FY 2013	17,909	17,909	26,578
FY 2014	0	0	12,665
FY 2015	0	0	5,847
Total, TEC	65,796	65,796	65,796
Other Project Cost (OPC)			
OPC except D&D			
FY 2009	2,855	2,855	2,855
FY 2010	264	264	264
FY 2011	1,501	1,501	1,501
FY 2012	803	803	803
FY 2013	661	661	661
FY 2014	1,714	1,714	1,714
FY 2015	1,224	1,224	1,224
FY 2016	978	978	978
Total, OPC except D&D	10,000	10,000	10,000
D&D			
FY 2010	N/A	N/A	N/A
Total, D&D	N/A	N/A	N/A

[a] $12,500 appropriation was originally requested for PED in the FY 2010 project data sheet. $6,245 of this will be used to procure long-lead items. The DOE Order 413.3B allows placement of long-lead equipment before the overall start of construction is approved.

[b] The FY 2012 project data sheet reported FY 2010 PED costs as $2,666. This was incorrect. Actual FY 2010 PED costs were $2,633.

	(dollars in thousands)		
	Appropriations	Obligations	Costs
OPC			
FY 2009	2,855	2,855	2,855
FY 2010	264	264	264
FY 2011	1,501	1,501	1,501
FY 2012	803	803	803
FY 2013	661	661	661
FY 2014	1,714	1,714	1,714
FY 2015	1,224	1,224	1,224
FY 2016	978	978	978
Total, OPC	10,000	10,000	10,000
Total Project Cost (TPC)			
FY 2009	2,855	2,855	2,855
FY 2010	12,764	12,764	2,897
FY 2011	1,501	1,501	7,377
FY 2012	36,190	36,190	13,000
FY 2013	18,570	18,570	27,239
FY 2014	1,714	1,714	14,379
FY 2015	1,224	1,224	7,071
FY 2016	978	978	978
Total, TPC	75,796	75,796	75,796

6. Details of Cost Estimate

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED)			
Design	6,255	6,035	6,035
Contingency	0	620	620
Total, PED	6,255	6,655	6,655
Construction			
Site Preparation	N/A	N/A	N/A
Equipment	N/A	N/A	N/A
Other Construction	50,941	47,571	47,571
Contingency	8,600	11,570	11,570
Total, Construction	59,541	59,141	59,141
Total, TEC	65,796	65,796	65,796
Contingency, TEC	8,600	12,190	12,190
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	1,238	3,228	3,228
Conceptual Design	2,772	2,772	2,772
Project Support	1,990		
Start-up	1,790	2,000	2,000
Contingency	2,210	2,000	2,000
Total, OPC except D&D	10,000	10,000	10,000
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	10,000	10,000	10,000
Contingency, OPC	2,210	2,000	2,000
Total, TPC	75,796	75,796	75,796
Total, Contingency	10,810	14,190	14,190

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 2010	TEC	12,500	35,387	17,909	0	0	0	0	0	65,796
	OPC	4,475	TBD	TBD	TBD	0	0	0	0	TBD
	TPC	16,975	TBD	TBD	TBD	0	0	0	0	TBD
FY 2012	TEC	12,500	35,387	17,909	0	0	0	0	0	65,796
	OPC	4,620	803	661	1,714	1,224	978	0	0	10,000
	TPC	17,120	36,190	18,570	1,714	1,224	978	0	0	75,796
FY 2013	TEC	12,500	35,387	17,909	0	0	0	0	0	65,796
	OPC	4,620	803	661	1,714	1,224	978	0	0	10,000
	TPC	17,120	36,190	18,570	1,714	1,224	978	0	0	75,796

8. Related Operations and Maintenance Funding Requirements

Start of Operation of Beneficial Occupancy (fiscal quarter or date)	N/A
Expected Useful Life (number of years)	N/A
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 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	N/A
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: N/A

10. Acquisition Approach

Procurement of goods and or services will be accomplished by the Y-12 Management and Operating (M&O) contractor consistent with the approved procedures. The M&O workforce has demonstrated success in planning and executing projects within this challenging, fluctuating environment. To the extent practical and if needed, subcontracts will be fixed lump sums and/or unit rate and competitively bid, allowing, to the maximum practical extent, participation by qualified small, small/disadvantaged, and Historically Underutilized Business Zone businesses. All contracts will be awarded on the basis of best value to the government, price, and other appropriate factors.

09-D-404, Test Capabilities Revitalization-Phase II Project
Sandia National Laboratories, New Mexico
Project Data Sheet (PDS) is for Construction Only

1. Significant Changes

The most recent DOE O 413.3B approved Critical Decision (CD) is CD-3, Approve Start of Construction, approved September 10, 2008, with a Total Project Cost (TPC) of $52,705 and CD-4 of 4th Quarter of FY 2013.

Latest approved Baseline Change Proposal (BCP) was BCP 11-01 on July 19, 2011, with a TPC of $57,809 and CD-4 date of March 17, 2014.

Previously appropriated design funds continue to be utilized in order to revalidate completed design assumptions and to verify that changes in code requirements do not impact the project.

A Federal Project Director has been assigned to this project.

This PDS does not include a new start for the budget year.

This PDS is an update of FY 2012 PDS.

2. Design, Construction, and D&D Schedule

(fiscal quarter or date)

	CD-0	CD-1	PED Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2009	07/03/2001	05/27/2005	3QFY2008	4QFY2008	4QFY2008	4QFY2013	3QFY2010	4QFY2011
FY 2012	07/03/2001	05/27/2005	06/30/2008	09/10/2008	09/10/2008	09/30/2013	3QFY2010	4QFY2012
FY 2013	07/03/2011	05/27/2005	06/30/2008	09/10/2008	09/10/2008	03/17/2014	3QFY2012	4QFY2013

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 2009	11/30/2007

CD-3A: Procure long-lead services for machining the gas gun and the 12-inch actuator for the Mechanical Shock Facility

3. Baseline and Validation Status

(fiscal quarter or date)

	TEC, PED	TEC, Construction	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
FY 2009	6,883	37,700	44,583	7,500	455	7,955	52,538
FY 2012	6,883	42,804	49,687	7,660	462	8,122	57,809
FY 2013	6,883	42,804	49,687	7,682	440	8,122	57,809

4. Project Description, Justification, and Scope

Phase II of the Test Capabilities Revitalization (TCR) project will revitalize the NNSA aged and deteriorated environment test capabilities at Sandia National Laboratories (SNL) and enable an integrated experimental strategy to develop, validate, and apply models required to perform weapon system qualifications. The facilities are needed to perform nuclear weapon component, subsystem, and system-level design, development, qualification, surveillance, significant finding investigations, and model development and validation experimentation and testing.

The existing test capabilities are inadequate to reliably support mission requirements. Without revitalization, individual test capabilities will be lost. Absent these laboratories and test instrumentation enhancements, the Modeling and Simulation approach to design, development, and qualification will not be achieved.

The TCR-II mission needs are driven by the following equally important requirements: Maintaining the existing stockpile testing capabilities, supporting phase 6.2, and 6.3 LEP development efforts, and supporting development and validation of weapon-related models.

The TCR-II is integral to increasing confidence in the warhead designs and demonstration of a responsive infrastructure that will enable a reduction in total stockpile size.

The planned scope includes revitalizing the following test capabilities:

1. 10,000 foot Rocket Sled Track, includes: a) replacement of the damaged track-side cabling, instrumentation, and AC power boxes; b) renovation of buildings 6736, 6741, 6742, 6743, 6744, 6745, 6746, 6747 and 6751, to restore them to a maintainable condition and removal of substandard buildings from the stockpile; c) upgrade of the target handling area, including the addition of utilities and target preparation slabs, and target demolition areas; d) site improvements to include drainage, grading, and paving along the south 5,000 ft of the track, track repairs in general, and e) add a 195 ft track extension to preclude damaging the tracks during testing.

2. Centrifuge Complex (Building 6526) includes: a) construct a new facility of approximately 2,380 square feet (±10 percent) as an addition to Building 6526 to consolidate work/storage spaces now located in substandard buildings that will be demolished; b) renovate Building 6526 (indoor centrifuge) to include security and code compliance upgrades; c) improvements to the general site and infrastructure to address water and sewer needs, paving, soil contamination (hydraulic fluid), data acquisition/controls, and demolition of substandard buildings, and d) construct a 383 sf (± 10 percent) new oil reserve Building 6523E.

3. Mechanical (Dynamic) Shock Facility (Building 6570) includes: a) upgrade and extension of the 18-inch actuator track to support higher-speed testing; b) upgrade (e.g., foundation) and extension of the 12-inch actuator track to support higher-speed testing; c) addition of a new gas gun assembly with integrated controls and pulse shaping capabilities to provide tailored 1000-ft per sec component testing capabilities; d) addition of a 4,250 sf Test Arena to support the track extensions, operation of the actuators and air gun, and deployment of advanced measurement/diagnostic technologies for subsystem and component testing; e) renovation of Building 6570 to restore it to a maintainable condition; f) replacement of the dilapidated compressor equipment building (6571), and g) restoration of the pneumatic power system.

4. Vibro-Acoustics and Mass Properties Facility (Building No. 6560 and 6610): includes: a) renovation of Buildings 6560 and 6610; b) construction of 2,400 sf of additions to Building 6560 to house building electrical and mechanical systems and provide for test article handling and staging; c) provision of site improvements, including grading, drainage, and paving, and d) replacement of aging test equipment, controls, and data acquisition systems.

5. Aero-sciences Facility (Building 865) includes: a) replace compressed air tanks; b) modify flow conditioning for Tri-sonic Wind Tunnel; c) replace heater power and control for Hypersonic Wind Tunnel, and d) perform minor targeted facilities modifications to address operational efficiency needs.

6. Demolish: a) Buildings: 6571, 6562, 6563, 6520A&B, 6523 and 6523A&C, 6523D, 6524, 7525, 6523CAN, 6730, 6741A&C, 6742F&G, 6743C&D&J, 6751A, and a portion of Building 6560; b) Transportainers (TP)-74, TP-75, and TP-146; c) Storage Structures OSB-19, OSB-00 and OSB-20, and Storage building 9925G, and d) the Oil Cooler and associated footings.

FY 2013 activities will include continuation of facilities construction and completion of D&D activities.

Key Performance Parameters

Aerosciences Test Capabilities (AERO)

ID	Functional & Operational Requirement (F&OR)
1	Improve space, maintenance and access requirements for the Trisonic Wind Tunnel (TWT) and its supporting equipment through space rearrangements. Provide replacements for large CA receivers and supporting infrastructure.
2	Improve maintenance and operation of the Hypersonic Wind Tunnel (HWT) and its supporting equipment with new SCR controllers

Centrifuge Test Capabilities (CENT)

ID	Functional & Operational Requirement (F&OR)
1	Improve test article handling capability with new bridge crane and assembly arena
2	Improve data acquisition capability by replacing slip rings and data cabling on 29' centrifuge
3	Revitalize and enhance test capabilities with new environmental control and office addition
4	Address environmental, safety, health, code compliance, and Secret Restricted Data (SRD) level security needs and deficiencies as found during design process

10,000-ft Sled Track Test Capability (SLED)

ID	Functional & Operational Requirement (F&OR)
1	Provide a target assembly area permitting vertical target construction, target rotation, and movement into test position
2	Construct permanent Flash Radiography capability near track
3	Revitalize and enhance test capabilities with new trackside cabling
4	Address environmental, safety, health, code compliance, and Secret Restricted Data (SRD) level security needs and deficiencies as found during design process

Mechanical (Dynamic) Shock Test Capabilities (MECH)

ID	Functional & Operational Requirement (F&OR)
1	Provide modifications to the 18-inch actuator and track to support tests requiring velocities for a 1000 lb. sled of 400 fps
2	Provide modifications to the 12-inch actuator and track to support tests requiring velocities for a 300 lb. sled of 320 fps
3	Develop a new Test Arena capable of supporting a range of tests involving the 12 inch actuator/track, 20 inch actuator/track, and the high speed air gun/rail
4	Provide new high speed air gun test capability that can accelerate 100 lb. projectile at greater than 1,000 fps
5	Provide reliable compressed gas source for the 12 inch actuator, 20 inch actuator, and the high speed air gun
6	Provide Capital Equipment necessary to utilize facility test capabilities
7	Revitalize and enhance test capabilities environmental conditions by addressing building revitalization issues found during design

Vibration, Mass Properties, and Acoustics (VIBR)

ID	Functional & Operational Requirement (F&OR)
1	Improve Material handling (overhead bridge crane) capability
2	Enhance operational efficiency and test throughput by integrating new entry into current building configuration
3	Revitalize and enhance test capabilities environmental conditions by addressing building revitalization issues found during design
4	Address environmental, safety, health, code compliance, and Secret Restricted Data (SRD) level security needs and deficiencies

Risk Driver	Risk Description	Risk Handling Strategy
Funding	If the short-term continuing resolutions during the fiscal year extend beyond the scheduled start of construction the project baseline schedule will be affected.	Mitigate. Work with the NNSA program and budget office to allow extra-ordinary obligation.

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 to provide independent assessments of the planning and execution of this project.

5. Financial Schedule

(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED (05-D-140)			
FY 2005	1,589	1,589	8
FY 2006 [a]	3,075	3,075	2,184
FY 2007 [b]	2,219	2,219	2,102
FY 2008	0	0	1,019
FY 2009	0	0	144
FY 2010	0	0	107
FY 2011	0	0	228
FY 2012	0	0	0
FY 2013	0	0	0
FY 2014	0	0	1,091
Total, PED (05-D-140)	6,883	6,883	6,883
Construction			
FY 2009	3,104	3,104	5
FY 2010	3,200	3,200	2,758
FY 2011	0	0	2,813
FY 2012	25,168	25,168	19,816
FY 2013	11,332	11,332	17,266
FY 2014	0	0	146
Total, Construction	42,804	42,804	42,804
TEC			
FY 2005	1,589	1,589	8
FY 2006	3,075	3,075	2,184
FY 2007	2,219	2,219	2,102
FY 2008	0	0	1,019
FY 2009	3,104	3,104	149
FY 2010	3,200	3,200	2,865
FY 2011	0	0	3,041
FY 2012	25,168	25,168	19,816
FY 2013	11,332	11,332	17,266
FY 2014	0	0	1,237
Total, TEC	49,687	49,687	49,687

[a] Original FY 2006 appropriation was $4,430. This was reduced by $1,355 as a result of a use of prior year balance offset included in the FY 2008 Consolidated Appropriation Act (P.L. 110-161).

[b] Original FY 2007 appropriation was $3,064. This was reduced by $845 as a result of a use of prior year balance offset included in the FY 2008 Consolidated Appropriation Act (P.L. 110-161).

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Other Project Cost (OPC)			
OPC except D&D			
FY 2004	1,552	1,552	1,552
FY 2005	1,976	1,976	1,976
FY 2006	1,477	1,477	1,477
FY 2007	819	819	819
FY 2008	227	227	227
FY 2009	223	223	223
FY 2010	248	248	248
FY 2011	378	378	378
FY 2012	225	225	225
FY 2013	557	557	557
Total, OPC except D&D	7,682	7,682	7,682
D&D			
FY 2011	347	347	347
FY 2012	93	93	93
Total, D&D	440	440	440
OPC			
FY 2004	1,552	1,552	1,552
FY 2005	1,976	1,976	1,976
FY 2006	1,477	1,477	1,477
FY 2007	819	819	819
FY 2008	227	227	227
FY 2009	223	223	223
FY 2010	248	248	248
FY 2011	725	725	725
FY 2012	318	318	318
FY 2013	557	557	557
Total, OPC	8,122	8,122	8,122
Total Project Cost (TPC)			
FY 2004	1,552	1,552	1,552
FY 2005	3,565	3,565	1,984
FY 2006	4,552	4,552	3,661
FY 2007	3,038	3,038	2,921
FY 2008	227	227	1,246
FY 2009	3,327	3,327	372
FY 2010	3,448	3,448	3,113
FY 2011	725	725	3,766
FY 2012	25,486	25,486	20,134
FY 2013	11,889	11,889	17,823
FY 2014	0	0	1,237
Total, TPC	57,809	57,809	57,809

6. Details of Cost Estimate

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED)			
Design	6,407	6,407	5,853
Contingency	476	476	1,030
Total, PED	6,883	6,883	6,883
Construction			
Site Preparation	9,778	9,778	7,688
Equipment	3,103	3,103	3,976
Other Construction	24,923	24,923	22,978
Contingency	5,000	5,000	3,058
Total, Construction	42,804	42,804	37,700
Total, TEC	49,687	49,687	44,583
Contingency, TEC	5,476	5,476	4,088
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning [a]			
Conceptual Design	262	262	262
Start-up	6,996	6,996	6,859
Contingency	424	402	379
Total, OPC except D&D	7,682	7,660	7,500
D&D			
D&D	417	439	433
Contingency	23	23	22
Total, D&D	440	462	455
Total, OPC	8,122	8,122	7,955
Contingency, OPC	447	425	401
Total, TPC	57,809	57,809	52,538
Total, Contingency	5,923	5,901	4,489

[a] The cost for the conceptual design was included in the Phase I. The project was split in two phases after CD-0 approval.

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 2009 Performance Baseline	TEC	44,583	0	0	0	0	0	0	0	44,583
	OPC	7,355	225	375	0	0	0	0	0	7,955
	TPC	51,938	225	375	0	0	0	0	0	52,538
FY 2012	TEC	13,187	25,168	11,332	0	0	0	0	0	49,687
	OPC	7,247	340	535	0	0	0	0	0	8,122
	TPC	20,434	25,508	11,867	0	0	0	0	0	57,809
FY 2013	TEC	13,187	25,168	11,332	0	0	0	0	0	49,687
	OPC	7,247	318	557	0	0	0	0	0	8,122
	TPC	20,434	25,486	11,889	0	0	0	0	0	57,809

8. Related Operations and Maintenance Funding Requirements

Start of Operation of Beneficial Occupancy (fiscal quarter or date)	4Q FY 2013
Expected Useful Life (number of years)	20
Expected Future Start of D&D of this capital asset (fiscal quarter)	3Q FY 2033

(Related Funding Requirements)

(dollars in thousands)

	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	750	750	15,000	15,000
Maintenance	1,500	1,500	30,000	30,000
Total, Operations and Maintenance	2,250	2,250	45,000	45,000

9. Required D&D Information

Area	Square Feet
Area of new construction	10,000
Area of existing facility(s) being replaced	10,000
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:

a) Buildings: 6571, 6562, 6563, 6520A&B, 6523 and 6523A&C, 6523D Pad, 6524, 6523CAN, 6741A&C, 6742F&G, 6743C&D&J, 6747, 6751;
b) Transportainers (TP)-74, TP-75, and TP-146;
c) Storage Structure OSB-19, OSB-00 and OSB-20, and Storage building 9925G; and
d) the Oil Cooler and associated footings.

10. Acquisition Approach

Renovations:

Design**:** Firm Fixed-Price (FFP), best value procurement; Architect/Engineer (A/E).

Construction: Well-defined construction packages: competitively bid, FFP, best value procurement.

Undefined construction packages: competitively bid, FFP, best value procurement or use existing Time and Material (T&M) contracts.

Decontamination & Demolition:
Design: Firm-Fixed Price (FFP), best value procurement; A/E.
Demolition: Use existing unit price contracts.
Decontamination: Use existing T&M contract.

08-D-802, High Explosive Pressing Facility
Pantex Plant, Amarillo, Texas
Project Data Sheet (PDS) is for Construction Only

1. Significant Changes

The most recent DOE O 413.3B approved Critical Decision (CD) is CD-3, Approve Start of Construction that was approved on May 15, 2008 with a Total Project Cost (TPC) of $80,578 and CD-4 in the 2Q of FY 2011.

Latest approved Baseline Change was on May 11, 2011, with a TPC of $145,297 and CD-4 of 1st Q FY 2017. The Baseline Change was necessitated as a result of the hold and the reduction of all existing uncosted project balances in FY 2010. The FY 2011 funding was reduced by sixty thousand dollars by the government-wide rescission. Because a favorable firm-fixed price construction contract has been awarded, the project may not request any funds in FY 2014.

A Federal Project Director has been assigned to this project.

This PDS does not include a new start for the budget year.

This PDS is an update of FY 2012 PDS.

2. Design, Construction, and D&D Schedule

(fiscal quarter or date)

	CD-0	CD-1	PED Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2008	08/08/2003	07/19/2005	3QFY2007	11/21/2006	4QFY2008	2QFY2011	N/A	N/A
FY 2009	08/08/2003	07/19/2005	4QFY2008	11/21/2006	4QFY2008	3QFY2014	N/A	N/A
FY 2011	08/08/2003	07/19/2005	3QFY2009	11/21/2006	05/15/2008	1QFY2017	N/A	N/A
FY 2012	08/08/2003	07/19/2005	3QFY2009	11/21/2006	05/15/2008	1QFY2017	N/A	N/A
FY 2013	08/08/2003	07/19/2005	3QFY2009	11/21/2006	05/15/2008	1QFY2017	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

(fiscal quarter or date)

	TEC, PED	TEC, Construction	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
FY 2008	8,146	68,140	76,286	4,292	N/A	4,292	80,578
FY 2009	8,146	72,334	80,480	4,507	N/A	4,507	84,987
FY 2011	7,948[a]	125,972	133,920	4,292	N/A	4,292	138,212
FY 2012	7,948	134,217	142,165	4,540	N/A	4,540	146,705
FY 2013	7,948	132,509	140,457	4,840	N/A	4,840	145,297

[a] PED reduced due to the loss of all uncosted project funds included in the FY 2010 use of prior year balances offset.

4. Project Description, Justification, and Scope

This project will provide a new high explosive (HE) main charge pressing facility with capability and capacity to meet the needs of changing weapon complexity, the Life Extension Program activities, and projected workload for the W76, W78, and W88 Programs.

The facility improves safety, quality and efficiency of material movement. Benefits also include engineering controls, and reduced maintenance downtime.

The new facility will be located in the Limited Area of the Pantex Plant, and replaces existing operations in buildings 12-17, 12-21A and 12-63. The facility will be designed to produce main charge pressing hemispheres to meet planned capacity requirements and will consist of approximately 45,000 square feet of space. Proposed areas include the main pressing facility, a magazine storage area, and a connecting ramp.

The FY 2013 activities include the continuation of construction work initiated in FY 2011. This work will include the placement of reinforcement steel and concrete as well as the procurement and manufacture of long lead equipment such as blast-doors, frames, and isostatic presses.

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 to provide independent assessments of the planning and execution of this project.

Key Performance Parameters

Produce high explosive (HE) main charge pressing facility to support the Life Extension Program activities including the W76, W78, and W88 Programs.

Risk

Risk Driver	Risk Description	Risk Handling
Inability to manufacture High Explosives	Not being able to manufacture HE will affect delivery of LEPs for the enduring stockpile.	Contractor has been selected for HEPF. Contract has been awarded to Kiewit Construction with construction in October 2011.
Funding	If the project does not receive the entire amount requested in the president's budget, the project schedule and cost will be affected.	Mitigate. Work with the NNSA program and Congressional Liaison staff to obtain the requested amount.

5. Financial Schedule

(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED (04-D-103-02)			
FY 2004	1,200	1,200	0
FY 2005	1,488	1,488	330
FY 2006	1,980	1,980	2,184
FY 2007 [a]	3,280	3,280	3,055
FY 2008	0	0	1,755
FY 2009	0	0	624
Total, PED (04-D-103-02)	7,948	7,948	7,948
Construction			
FY 2008 [b]	613	613	577
FY 2009 [c]	0	0	37
FY 2010	0	0	0
FY 2011 [d]	29,940	29,940	858
FY 2012	66,960	66,960	53,565
FY 2013	24,800	24,800	40,000
FY 2014	10,136	10,136	14,000
FY 2015	0	0	11,100
FY 2016	0	0	12,312
Total, Construction	132,449	132,449	132,449
TEC			
FY 2004	1,200	1,200	0
FY 2005	1,488	1,488	330
FY 2006	1,980	1,980	2,184
FY 2007	3,280	3,280	3,055
FY 2008	613	613	2,332
FY 2009	0	0	661
FY 2010	0	0	0
FY 2011	29,940	29,940	858
FY 2012	66,960	66,960	53,565
FY 2013	24,800	24,800	40,000
FY 2014	10,136	10,136	14,000
FY 2015	0	0	11,100
FY 2016	0	0	12,312
Total, TEC	140,397	140,397	140,397

[a] Original appropriation was $3,478 and was reduced by $198 as a use of prior year balance offset in the FY 2010 appropriation.

[b] Original appropriation was $15,008 and was reduced to $613 as a use of prior year balance offset in the FY 2010 appropriation.

[c] Original appropriation was $27,386 and was reduced to $0 as a use of prior year balance offset in the FY 2010 appropriation.

[d] The FY 2011 Enacted amount of $30,000 was reduced by $60 as a result of the general rescission associated with the FY 2011 full year Continuing Resolution.

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Other Project Cost (OPC)			
OPC			
FY 2004	860	860	860
FY 2005	281	281	281
FY 2006	158	158	158
FY 2007	200	200	200
FY 2008	150	150	150
FY 2009	20	20	20
FY 2010	409	409	409
FY 2011	311	311	311
FY 2012	200	200	200
FY 2013	200	200	200
FY 2014	300	300	300
FY 2015	400	400	400
FY 2016	1,013	1,013	1,013
FY 2017	338	338	338
Total, OPC	4,840	4,840	4,840
Total Project Cost (TPC)			
FY 2004	2,060	2,060	860
FY 2005	1,769	1,769	611
FY 2006	2,138	2,138	2,342
FY 2007	3,480	3,480	3,255
FY 2008	763	763	2,482
FY 2009	20	20	681
FY 2010	409	409	409
FY 2011	30,251	30,251	1,169
FY 2012	67,160	67,160	53,765
FY 2013	25,000	25,000	40,200
FY 2014	10,436	10,436	14,300
FY 2015	400	400	11,500
FY 2016	1,013	1,013	13,325
FY 2017	338	338	338
Total, TPC	145,237	145,237	145,237

6. Details of Cost Estimate

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED)			
Design	7,948	7,948	7,122
Contingency	0	0	1,024
Total, PED [a]	7,948	7,948	8,146
Construction			
Site Preparation	800	800	0
Equipment	0	0	7,816
Other Construction	110,731	114,891	51,579
Contingency	20,918	18,526	8,745
Total, Construction	132,449	134,217	68,140
Total, TEC	140,397	142,165	76,286
Contingency, TEC	20,918	18,526	9,769
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	1,166	1,166	1,166
Conceptual Design	355	355	998
Other	364	364	161
Start-up	1,931	1,631	1,485
Contingency	1,024	1,024	482
Total, OPC except D&D	4,840	4,540	4,292
D&D			
D&D	0	0	0
Contingency	0	0	0
Total, D&D	0	0	0
Total, OPC	4,840	4,540	4,292
Contingency, OPC	1,024	1,024	482
Total, TPC	145,237	146,705	80,578
Total, Contingency	21,942	19,550	10,251

[a] PED reduced due to the withdrawal of uncosted funds.

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 2009 Performance Baseline	TEC	68,415	0	0	0	0	0	0	0	68,415
	OPC	4,049	243	0	0	0	0	0	0	4,292
	TPC	72,464	243	0	0	0	0	0	0	72,707
FY 2010	TEC	50,540	0	0	0	0	0	0	0	50,540
	OPC	1,669	0	0	0	0	0	0	0	1,669
	TPC	52,209	0	0	0	0	0	0	0	52,209
FY 2011	TEC	38,561	30,359	0	0	0	0	0	0	68,920
	OPC	1,839	300	300	500	500	0	0	0	3,439
	TPC	40,400	30,659	300	500	500	0	0	0	72,359
FY 2012	TEC	38,561	66,960	24,800	11,844	0	0	0	0	142,165
	OPC	2,539	200	200	300	400	553	348	0	4,540
	TPC	41,100	67,160	25,000	12,144	400	553	348	0	146,705
FY 2013	TEC	38,501	66,960	24,800	10,136	0	0	0	0	140,397
	OPC	2,389	200	200	300	400	1,013	338	0	4,840
	TPC	40,890	67,160	25,000	10,436	400	1,013	338	0	145,237

8. Related Operations and Maintenance Funding Requirements

Start of Operation of Beneficial Occupancy (fiscal quarter or date)	1Q FY 2017
Expected Useful Life (number of years)	50
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 Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	1,000	1,000	50,000	1,000
Maintenance	400	400	20,000	460
Total, Operations and Maintenance	1,400	1,400	70,000	1,460

9. Required D&D Information

Area	Square Feet
Area of new construction	45,000
Area of existing facility(s) being replaced	6,727
Area of additional D&D space to meet the "one-for-one" requirement	N/A

The Pantex Plant has 56,879 square feet of banked space that will count toward the one-for-one replacement.

10. Acquisition Approach

Various alternatives were considered including a federally managed construction project or a project utilizing the current Management and Operating contractor, B&W Pantex, LLC. It was determined that, due to the specialized functionality associated with this project, B&W Pantex, LLC will be responsible for Title I, II, and III design services and the USACE will be responsible for Title III Construction Management services.

06-D-141, Uranium Processing Facility, Y-12 National Security Complex,
Oak Ridge, Tennessee
Project Data Sheet (PDS) is for Design and Construction

1. Significant Changes

The funding request for FY 2013 reflects an acceleration of planned UPF building construction. 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. The funding profile for UPF construction in the outyears will be updated and communicated at a later date.

The most recent approved Critical Decision (CD) is CD-1, Approve Alternative Selection and Cost Range, that was documented on July 25, 2007. As part of the DOE Order 413.3B process for post CD-1 cost increases, a reaffirmation of the CD-1 decision is scheduled in FY 2012 to validate the selected option and adjust the cost range from the currently approved $1.3 billion - $3.5 billion range to a range that considers the latest design maturity; regulatory and market conditions; and funding plan anticipated in this budget request. A cost review by the Army Corps of Engineers was completed in February, 2011. The NNSA will use this review and other independent cost review data for the CD-1 reaffirmation and the CD-2 performance baseline planned for FY 2013. Consistent with NNSA's increased emphasis on project management rigor, total project baseline cost and schedule will not be finalized until the total project achieves 90 percent design maturity. Additionally, subproject activities such as advanced procurement and road and utility relocations will begin only when those individual subprojects each achieve 90 percent design maturity and baseline approval.

The project experienced an increase in design cost from $528,690, as shown in the FY 2012 request, to $566,192. The increase was due to labor rate changes driven primarily by increased pension obligations, changes to overhead rates to be consistent with cost accounting standards, adjustments to the UPF fully burdened labor rate, and a decrease in the planned capital planning base for the Y-12 National Security Complex.

For FY 2014 and the outyears, the numbers presented are estimates and will be finalized once the project has achieved 90 percent design maturity and baseline approval. In the FY 2013 request, the Total Project Cost (TPC) includes both Total Estimated Cost (TEC) and OPC. The TPC request in the construction line item is consistent in the budget narrative and in supporting tables.

As represented in the FY 2013 request, PED, Construction and OPC will 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.

A Federal Project Director has been assigned to this project.

This PDS does not include a new start for the budget year.

This PDS is an update of the FY 2012 PDS.

2. Design, Construction, and D&D Schedule

(fiscal quarter or date)

	CD-0	CD-1	PED 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

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

(fiscal quarter or date)

	TEC, PED	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[a]

4. Project Description, Justification, and Scope

The Uranium Processing Facility (UPF) 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 Enriched Uranium (EU) capability at the Y-12 National Security Complex. The UPF will provide new facilities and equipment to consolidate all EU operations at Y-12 into a single, modern facility with state-of-the-art technologies and safeguards and security concepts and strategies. The goals and objectives of UPF are:

- Ensure the long-term capability and improve the reliability of EU operations through consolidation of facilities;
- Replace deteriorating, end-of-life facilities with a modern manufacturing facility;
- 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 90 percent reduction in its high-security footprint.

The UPF is needed to ensure the long-term viability, safety, and security of the EU capability at Y-12 in Oak Ridge, Tennessee. The UPF 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 age 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 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.

When fully functional, the UPF will reduce annual operating costs for Y-12 through the consolidation of facilities, reduced transfer of materials, reduction in emissions and waste management, reduction in protective forces required for security, and efficiency gains resulting from the reduction of the Protected Area footprint.

[a] This range estimate is consistent with the cost estimate reported in the FY 2012 budget request.

The UPF will include facilities and equipment required to accomplish the following EU processing operations:

- Disassembly and dismantlement of returned weapons subassemblies;
- Assembly of subassemblies from refurbished and new components;
- Quality evaluation to assess future reliability of weapons systems in the stockpile;
- Product certification (dimensional inspection, physical testing, and radiography);
- EU metalworking, and
- Chemical processing including conversion of scrap and salvage EU to metal, stable, or disposable forms.

The EU processing operations will be housed in a multi-story, reinforced concrete building. The primary building will be seismically designed to protect the building and its contents as required by the applicable safety analysis. The existing site Perimeter Intrusion Detection and Alarm System (PIDAS) or a similar system will be modified and additional portals will be added to enclose UPF within the same Protected Area as the Highly Enriched Uranium Materials Facility (HEUMF). When all HEU processing and storage are consolidated into the UPF and HEUMF 15- acre Protected Area, the balance of the existing 150 acre PIDAS can be eliminated.

Due to the decision to accelerate this important project, the administrative requirements of DOE O 413.3B, Appendix A, paragraph 4.c.(2) have not been fully met as of the time of this budget submission. However, the NNSA intends to conduct this project in accordance with the project management requirements in DOE O 413.3B and will be fully compliant with the Order by October 1, 2012.

Funds appropriated under this data sheet may be used for independent assessments and oversight of the planning and execution of this project.

The FY 2012 and FY 2013 activities include ongoing design activities for the facility, associated services and equipment, construction and procurement. Project planning activities include award of multiple CD-2 and CD-3 packages for smaller, more manageable, subprojects to manage commitments for cost and schedule. Capital project funding will be used for construction of these subprojects but will not be obligated until the subproject performance baselines have been validated and the CD-2/3 milestones have been approved in accordance with DOE O 413.3B.

5. Financial Schedule[a]

(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED [b]			
FY 2006	5,000	5,000	0
FY 2007	5,000	5,000	677
FY 2008	38,583	38,583	33,950
FY 2009 [c]	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	160,194	160,194
FY 2013	47,777	47,777	47,777
FY 2014	10,230	10,230	53,596
Total, PED	566,192	566,192	566,192
Construction			
FY 2012 [d]	0	0	0
FY 2013	292,223	292,223	280,000
FY 2014	386,770	386,770	293,000
FY 2015	493,000	493,000	493,000
FY 2016	493,000	493,000	493,000
FY 2017	246,000	246,000	246,000
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	160,194	160,194
FY 2013	340,000	340,000	327,777
FY 2014	397,000	397,000	TBD
FY 2015	493,000	493,000	TBD
FY 2016	493,000	493,000	TBD
FY 2017	246,000	246,000	TBD
Total, TEC	TBD	TBD	TBD

[a] The outyear numbers for the Uranium Processing Facility do not reflect programmatic requirements. Rather, they are an extrapolation of the FY 2013 request based on rates of inflation in the Budget Control Act of 2011. The Administration will develop outyear funding levels based on actual programmatic requirements at a later date.

[b] PED for FY 2006 – FY 2009 was appropriated under 06-D-140, Project Engineering & Design, VL.

[c] $2,654 was realigned within 06-D-140, PED, VL from the UPF subproject to the Radioactive Liquid Waste Treatment Facility Upgrade subproject, in FY 2009.

[d] Upon approval of performance baselines for subprojects in FY 2012, NNSA will notify Congress when associated funds are approved for Construction.

	(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	3,000	3,000	3,000
FY 2015	7,000	7,000	7,000
FY 2016	7,000	7,000	7,000
FY 2017	12,000	12,000	12,000
Total, OPC except D&D	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	160,194	160,194
FY 2013	340,000	340,000	327,777
FY 2014	400,000	400,000	400,000
FY 2015	500,000	500,000	500,000
FY 2016	500,000	500,000	500,000
FY 2017	270,000	270,000	325,589
Total, TPC [a]	6,500,000	6,500,000	6,500,000

[a] Totals are based on high end of cost range estimate reported in the FY 2012 budget request.

6. Details of Cost Estimate

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED)			
Design	515,870	464,585	N/A
Contingency	50,322	64,105	N/A
Total, PED	566,192	528,690	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

		Prior Years	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Outyears	Total
FY 2011	TEC	348,221	105,400	189,987	270,012	320,000	TBD	TBD	TBD	TBD
	OPC	99,209	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
	TPC	447,430	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
FY 2012	TEC	348,221	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
	OPC	101,234	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
	TPC	449,455	160,194	190,000	350,000	350,000	350,000	TBD	TBD	TBD
FY 2013 [a]	TEC	347,991	160,194	340,000	397,000	493,000	493,000	258,000	TBD	TBD
	OPC	95,128	0	0	3,000	7,000	7,000	12,000	TBD	TBD
	TPC	443,119	160,194	340,000	400,000	500,000	500,000	270,000	3,886,687	6,500,000

8. Related Operations and Maintenance Funding Requirements

Start of Operation of Beneficial Occupancy (fiscal quarter or date)	TBD
Expected Useful Life (number of years)	50
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 Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	TBD	138	TBD	6,900
Maintenance	TBD	32	TBD	1,600
Total, Operations and Maintenance	TBD	170	TBD	8,500

9. Required D&D Information

Area	Square Feet
Area of new construction	N/A
Area of existing facility(s) being replaced	N/A
Area of additional D&D space to meet the "one-for-one" requirement	N/A

The construction of UPF will add approximately 400,000 square feet of new facilities to the Y-12 footprint and will replace functions in all or parts of the following facilities within the Y-12 Complex:

- Areas of Building 9212 that house EU casting and EU chemical processing operations;
- Areas of Building 9215 and 9998 that house EU metal working, EU machining operations and inspection, and
- Building 9204-2E which houses Assembly, Disassembly/ Dismantlement, Quality Evaluation and Product Certification operations.

The final decontamination and decommissioning (D&D) and demolition of these areas are not considered a part of the UPF project. The D&D of Building 9212 is included in the Integrated Facility Disposition Project (IFDP) which is currently being proposed by the Environmental Management (EM) Program, DOE Oak Ridge Operations Office, Y-12 and Oak Ridge

[a] The outyear numbers for the Uranium Processing Facility do not reflect programmatic requirements. Rather, they are an extrapolation of the FY 2013 request based on rates of inflation in the Budget Control Act of 2011. The Administration will develop outyear funding levels based on actual programmatic requirements at a later date. Totals are based on high end of cost range estimate reported in FY 2012 budget request.

National Laboratory (ORNL) to dispose of legacy facilities at both Y-12 and the ORNL. Building 9215 and 9998 will not become immediately or completely excess and available for demolition since these buildings contain enduring depleted uranium manufacturing facilities. Modernization plans for Y-12 include consideration of further consolidation of non-Special Nuclear Material (SNM) manufacturing functions, the potential for the demolition of Buildings 9215 and 9998 and possible reuse of Building 9204-2E.

The project will meet the requirement to eliminate facilities of an equivalent size of UPF as required by the FY 2002 Energy and Water Development Appropriations Bill conference Report (107-258) by using Y-12's "banked excess." Y-12's confirmed "banked excess" balance at the end of FY 2010 as reported in the Y-12 Ten Year Site Plan Y/MOD-012, Rev 11 (May 2011) is 821,187 square feet. It is anticipated that at the time UPF goes on line the square footage that can be released for future demolition is twice the square footage of the UPF.

10. Acquisition Approach

The Management and Operating (M&O) contractor for Y-12 under the leadership and direction of the Y-12 Site Office Federal Project Director and the Federal Integrated Project Team will be responsible for the execution of the project. The Office of Defense Programs is the responsible NNSA organization. The UPF will be executed primarily under a design-bid-build project delivery system in which the design will be performed by one or more Architect-Engineers (A-E's) and construction will be performed by multiple fixed-price Construction Contractors (CC's).

To the extent practical, subcontracts for Title I & II design services, and Title III engineering services will be competitively bid, cost-type subcontracts that are awarded on the basis of best value-based to the Government.

To the extent practical, all construction work and procurements will be accomplished under competitively bid, fixed-price subcontracts. The CC's will be responsible for execution of all construction including site preparation, building construction, equipment installation and contractor acceptance testing.

The M&O contractor will provide project management, administer the A-E and CC subcontracts, act as the design authority for UPF systems, provide designated Authorities Having Jurisdiction (AHJ) for code interpretations, provide technical support to NNSA for the preparation and review of NEPA documentation, prepare construction and operating permit applications, provide technical and operational support to, and oversight of the A-E and CC manager, and be responsible for all commissioning and start-up activities. The M&O contractor may also do limited design and procurement of unique or specialty type equipment. The M&O contractor will provide maintenance support to the CC as required to accomplish tie-ins to existing plant systems and will provide health and safety oversight of the CC and his subcontractors.

Secure Transportation Asset
Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Secure Transportation Asset (STA)			
Operations and Equipment	156,877	144,800	114,965
Program Direction	94,929	98,002	104,396
Total, Secure Transportation Asset	**251,806**	**242,802**	**219,361**

Out Year Funding Profile by Subprogram and Activity

The outyear numbers for Weapons Activities do not reflect programmatic requirements. Rather, they are an extrapolation of the FY 2013 request based on rates of inflation in the Budget Control Act of 2011. The Administration will develop outyear funding levels based on actual programmatic requirements at a later date.

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
Consolidated Appropriations Act, 2012 (P.L. 112-74)
National Defense Authorization Act for FY 2012 (P.L. 112-81)

Overview

As a departmental asset, 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.

This program includes Operations and Equipment and Program Direction. Operations and Equipment provides for STA's transportation service infrastructure that is critical in meeting the stockpile refurbishment and modernization initiatives of the nuclear security enterprise. Program Direction 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. 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. The NNSA STA Advisory Board (STAAB) will continue to balance and prioritize customer requests against STA capability. Over the long-term, the STA will maintain the personnel and vehicle resources at sufficient levels to meet the NNSA and DOE shipping requirements with safe and secure transportation. STA needs to replace aging transportation assets to meet shipping requirements.

Program Accomplishments and Milestones

In fiscal year 2011, STA accomplished these significant milestones: 1) Safely and securely completed 100 percent of 116 shipments without compromise/loss of components or a release of radioactive material; 2) Acquired a second B737 aircraft; 3) Completed a large scale national incident management system incident command exercise involving outside response organizations; 4) Maintained agent workforce to support the required workload; 5) Conducted a joint testing exercise to validate the security posture; and 6) Provided individual training to staff and agents necessary to manage and implement a safe, secure transportation system.

Explanation of Changes

The STA request of $219 million is a 9.7 percent decrease from the enacted FY 2012 appropriation. The decrease is associated with: 1) The reduction of operating funds resulting from the conclusion of the aviation program upgrade initiative; 2) Movement of operating funds to the program direction account in support of the pilot federalization; to include travel, training and salaries; 3) Deference of the Overland Palletized Shipper (OPUS) Unit production and facility-related enhancements; and 4) Reduction of computer support services, equipment and escort vehicle production.

Program Planning and Management

The STA capacity is maintained to support the workload associated with the dismantlement and maintenance of

the nuclear weapons stockpile and the initiative to consolidate the storage of nuclear material. The uncertain threat environment necessitates the implementation of force multiplier technologies and also operational enhancements for domain awareness analysis. The STA program continues to implement an operationally-focused and intelligence-driven operation, focusing on the detection, deterrence and disruption of potential threats while sustaining capabilities to defend, recapture and recover.

Strategic Management

The STA provides safe and secure transport of nuclear weapons components and Special Nuclear materials for DOE, DoD, as well as meeting other customer requirements.

The external factors present the strongest impact to the overall achievement of the programs strategic goal:

- De-inventory and SNM consolidation campaigns may impact life span of vehicle fleet and increase requirements for capacity.
- Ability to obtain replacement parts for outdated communication systems.
- Uncertain threat environment
- Highly trained agents sought by other federal law enforcement agencies
- Ability to train agents in realistic over-the-road environments

Major outyear Priorities and Assumptions

The outyear numbers for Weapons Activities do not reflect programmatic requirements. Rather, they are an extrapolation of the FY 2013 request based on rates of inflation in the Budget Control Act of 2011. The Administration will develop outyear funding levels based on actual programmatic requirements at a later date. Major outyear priorities and assumptions will be delineated in that update.

Program Goals and Funding

The outyear numbers for Weapons Activities do not reflect programmatic requirements. Rather, they are an extrapolation of the FY 2013 request based on rates of inflation in the Budget Control Act of 2011. The Administration will develop outyear funding levels based on actual programmatic requirements at a later date. Program Goals and Funding will be delineated in that update.

Secure Transportation Asset - Operations and Equipment
Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Operations and Equipment			
Mission Capacity	83,718	84,376	56,458
Security Safety Capability	34,670	19,986	22,457
Infrastructure and C5 Systems	28,867	29,449	24,199
Program Management	9,622	10,989	11,851
Total, Operations and Equipment	**156,877**	**144,800**	**114,965**

Out Year Funding Profile by Subprogram and Activity

The outyear numbers for Weapons Activities do not reflect programmatic requirements. Rather, they are an extrapolation of the FY 2013 request based on rates of inflation in the Budget Control Act of 2011. The Administration will develop outyear funding levels based on actual programmatic requirements at a later date.

Overview

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, 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 systems; and (4) Program Management - provides corporate functions and business operations that control, assist, and direct secure transport operations.

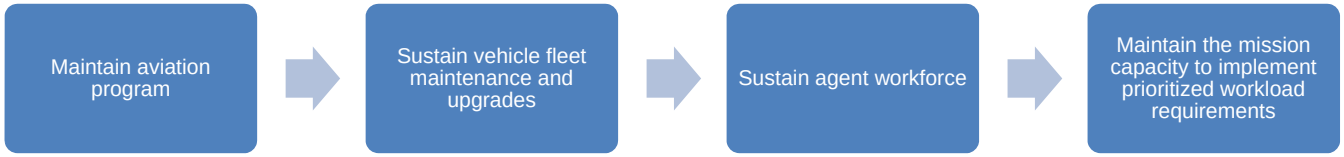
Explanation of Funding and/or Program Changes

	(Dollars in Thousands)		
	FY 2012 Enacted	FY 2013 Request	FY 2013 vs. FY 2012
Secure Transportation Asset (STA)			
Operations and Equipment			
Mission Capacity	**84,376**	**56,458**	**-27,918**
The decrease is attributable to the deferral of vehicle fleet production and the finalization of the aviation fleet upgrades. The aviation program funding was reduced in anticipation of cost savings resulting from the fleet upgrades and pilot federalization.			
Security/Safety Capability	**19,986**	**22,457**	**+2,471**
The increase supports intelligence-related activities necessary to detect, deter and disrupt threats and initiatives to provide agent candidates with training vehicles that simulate actual operational vehicle capabilities.			
Infrastructure and C5 Systems	**29,449**	**24,199**	**-5,250**
The decrease is attributable to a reduction in facility enhancements and changing the level of computer support services and equipment.			
Program Management	**10,989**	**11,851**	**+862**
The increase provides for costs associated with support service contractor insurance rates and activities to validation security capabilities.			
Total Funding Change, Secure Transportation Asset, Operations and Equipment	**144,800**	**114,965**	**-29,835**

Mission Capacity
Overview

Mission Capacity sustains STA systems capacity through equipment purchases and maintenance of the agent manpower to fulfill the present transportation schedule. This goal includes the following activities: (1) Annually, conduct an Agent Candidate Training (ACT) class to maintain the agent end-strength. Funding supports the recruiting, equipping, and training of federal agent candidates necessary to maintain the work force impacted by attrition. (2) Replaces 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 upgrades to the newly acquired aircraft. (4) Maintains readiness posture of the STA fleet.

Sequence



Benefits

Provide a unique and specialized transportation infrastructure to transport nuclear weapons and material across state jurisdictions. No other federal agency, state, local or private effort is authorized to perform the full extent of the STA specialized mission. The shipments require the use of specialized trailers and vehicles, operated by armed, highly qualified and trained federal agents who are rigorously and repeatedly trained on various response situations.

Funding and Activity Schedule

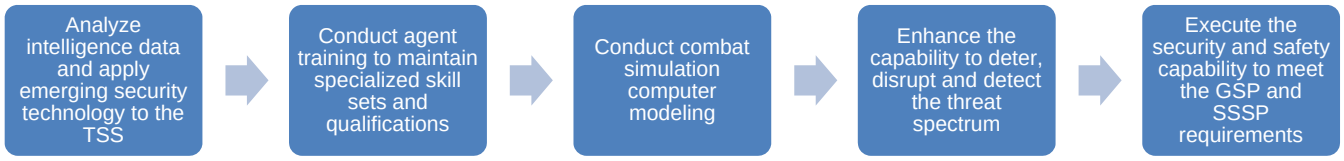
Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Ensured federal agent units were ready to support at least 80 percent of the Unit mission weeks identified on the Predictable schedule. • Purchased two Boeing 737-400 aircraft. • Procured 21 Escort Vehicle Light Chassis (EVLC) • Completed a systems test of one Safeguards Transporter.	**83,718**
FY 2012	• Support the inspection, testing, and maintenance of escort vehicles, secure trailers, armored tractors, mobile communication and defensive systems, as well as the operation of three vehicle maintenance facilities and two mobile electronic maintenance facilities. • Support the utilization of aviation assets to sustain the Limited Life Components Program and emergency response for the Nuclear Emergency Search Team (NEST), Accident Response Group (ARG), Radiological Assistance Program (RAP), Joint Tactical Operations Team (JTOT) and to move agents to staging points to minimize travel time and increase availability to support missions. • Support the operation and maintenance of three large fixed wing aircraft and one Learjet 35. • Support the purchase a 737-like aircraft and the associated parts, spares and tools necessary to manage and maintain the acquired aircraft to replace the aging DC-9 fleet.	**84,376**
FY 2013	• 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 the agent force by conducting an agent candidate class.	**56,458**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	• Continue to provide support for limited life components and emergency management programs. • Continue to upgrade and replace a nominal quantity of aging vehicles.	
FY 2014-FY 2017	• 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 the agent force by conducting an agent candidate class. • Continue to provide support for limited life components and emergency management programs. • Continue to upgrade and replace aging escort vehicles and armored tractors.	**TBD**

Security/Safety Capability
Overview

Security/Safety Capability activities include 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, analyzing intelligence data, disseminating 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), Operational Readiness Testing (ORT), and agent sustainment training. Sustainment training includes, but is not limited to, surveillance detection, tactics, advance driving and firearms and 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 weapon and off-road drive training. (3) Maintains security and safety programs. Funding supports liaison with state and local law enforcement organizations; analyzing security methods and equipment; conducting vulnerability assessments; developing the Site Safeguards and Security Plan and combat simulation computer modeling; and conducting 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, NM, as well as trains and exercises the STA response capability. Funding supports the Emergency Management Program to include Federal Agent Incident Command System refresher and sustainment training.

Sequence



Benefits

Provide transportation services within the Graded Security Protection Policy and Site Safeguards Security Plan requirements.

Funding and Activity Schedule

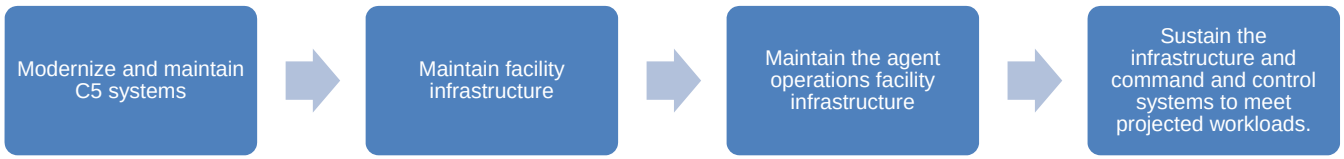
Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Conducted federal agent training to maintain skill-sets. • Completed the following for the OPUS project: Final design for stakeholder feedback; baseline design review and final design review for loading equipment. • Completed a major revision of the Site Safeguards and Security Plan (SSSP), incorporating the Active Security Doctrine, identifying variances with the DOE Graded Security Protection (GSP) Policy. • Maintained the STA Integrated Safety Management System Description. • Developed an Emergency Planning Hazards Assessment (EPHA). • Achieved authorities and accesses to multiple national-level law enforcement reporting and analytical databases which provides for significant localized trending capability.	**34,670**
FY 2012	• Operate the Transportation Safeguards System (TSS) within the safety and security licenses, based on the updated/upgraded Site Safeguards and Security Plan, and to maintain agent skills to meet the GSP requirements. • Maintain the federal agent force, equipment and training tempo to meet GSP and workload requirements. • Maintain safety programs to ensure safe over-the-road operations; to include a Nuclear Explosive Safety Study and Documented Safety Analysis.	**19,986**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	• Conduct vulnerability analysis and implement access controls at STA sites. • Produce OPUS units.	
FY 2013	• Continue to operate the Transportation Safeguards System (TSS) within the safety and security licenses, based on the updated/upgraded Site Safeguards and Security Plan, and to maintain agent skills to meet the GSP requirements. • Continue to maintain the federal agent force, 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.	**22,457**
FY 2014-FY 2017	• Continue to operate the Transportation Safeguards System (TSS) within the safety and security licenses, based on the updated/upgraded Site Safeguards and Security Plan, and to maintain agent skills to meet the GSP requirements. • Continue to maintain the federal agent force, 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. • Continue to produce OPUS units.	**TBD**

Infrastructure and C5 Systems
Overview

Infrastructure and C5 Systems provides support to the program goal of sustaining the infrastructure and command and control system platforms that the STA operates. This goal includes 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 80 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.

Sequence



Benefits

Provide the infrastructure and command and control to the unique transportation systems in support of the weapon consolidation initiatives.

Funding and Activity Schedule

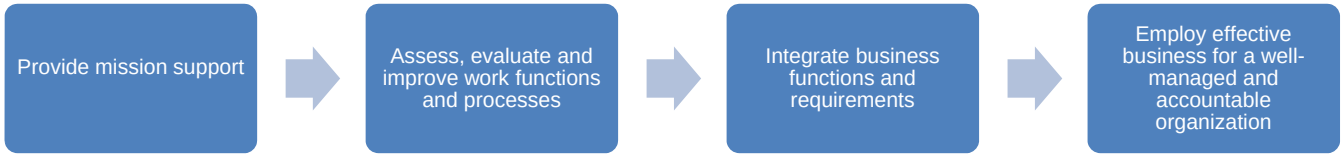
Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Completed modernization of the Transportation Command and Control Systems (TCCS) technology infrastructure, including servers and workstations, upgrading all operating systems to the latest Microsoft Windows technology. • Completed installation of new satellite communication packages in all mission vehicles. • Completed a next generation communication demonstration project. • Acquired 40 acres at Fort Chaffee, AR. • No cost acquisition of a 40,000 square foot warehouse and 11 bay buildings at Fort Chaffee, AR. • Conducted facility maintenance in accordance with the Ten-Year Site Plan requirements.	**28,867**
FY 2012	• Initiate the modernization of classified command and control communication, computer and cyber (C5) systems. • Sustain and maintained the STA facilities and equipment. • Provide secure end-to-end convoy communications beyond line of sight including the integration of VHF, UHF, dual cellular and satellite communications.	**29,449**
FY 2013	• Continue the initiatives to modernize the classified command and control communication, computer and cyber (C5) systems. • Continue to sustain and maintain the STA facilities and equipment. • Continue to provide secure end-to-end convoy communications beyond line of sight including the integration of VHF, UHF, dual cellular and satellite communications.	**24,199**

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2014-FY 2017	• Continue the initiatives to modernize the classified command and control communication, computer and cyber (C5) systems. • Continue to sustain and maintain the STA facilities and equipment. • Continue to provide secure end-to-end convoy communications beyond line of sight including the integration of VHF, UHF, dual cellular and satellite communications.	**TBD**

Program Management
Overview

Program Management provides support to the program goal of creating a well-managed, responsive, and accountable organization by employing effective business practices. This goal includes the following: (1) Provide for corporate functions including validation of the safety, security and conduct of operations (including force-on-force validation), 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, professional development, routine STA intranet web support, configuration management, and business integration activities.

Sequence



Benefits

Provide corporate functions and business operations that control, assist and direct secure transportation operations.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Completed a Joint Testing Exercise to validate the TSS security system effectiveness. • Developed an integrated automation process for all human resources activities and functions within the geographically separated STA locations; reducing the level of effort and timeframes for completing processes. • Participated in the implementation and expansion of the National Work Breakdown Structure.	**9,622**
FY 2012	• Provide for corporate functions and business operations that control, assist and direct secure transportation operations. • Continue to integrate the National Work Breakdown Structure foundation into existing project list in an effort to provide a consistent framework for planning, programming, budgeting and evaluation within Defense Programs. • Continue to extract, consolidate and integrate training data to validate security proficiencies. • Continue to conduct validation exercise 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.	**10,989**
FY 2013	• Continue to provide for 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. • Continue to extract, consolidate and integrate training data to validate security proficiencies. • Continue to conduct validation exercise 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	**11,851**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	and physical security.	
FY 2014-FY 2017	• Continue to provide for 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. • Continue to extract, consolidate and integrate training data to validate security proficiencies. • Continue to conduct a validation exercise 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.	**TBD**

Capital Operating Expenses and Construction Summary

Capital Operating Expenses[a]

(dollars in thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Capital Operating Expenses			
General Plant Projects	3,200	0	0
Capital Equipment	30,471	25,175	4,257
Total, Capital Operating Expenses	**33,671**	**25,175**	**4,257**

Outyear Capital Operating Expenses

(dollars in thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request
Capital Operating Expenses				
General Plant Projects	TBD	TBD	TBD	TBD
Capital Equipment	TBD	TBD	TBD	TBD
Total, Capital Operating Expenses	**TBD**	**TBD**	**TBD**	**TBD**

[a] Funds are appropriated for Operations and Maintenance, which includes operating expenses, capital equipment and general plant projects. The program no longer budgets separately for capital equipment and general plant projects. Funding shown reflects estimates based on actual FY 2011 obligations.

Secure Transportation Asset - Program Direction
Funding Profile by Subprogram and Activity

	(Dollars in Thousands)		
	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Program Direction			
Salaries and Benefits	79,644	82,613	84,878
Travel	8,334	7,758	7,216
Other Related Expenses	6,951	7,631	12,302
Total, Program Direction	**94,929**	**98,002**	**104,396**
Total Full Time Equivalents	**637**	**622**	**639**

Out-Year Funding Profile by Subprogram and Activity

The outyear numbers for Weapons Activities do not reflect programmatic requirements. Rather, they are an extrapolation of the FY 2013 request based on rates of inflation in the Budget Control Act of 2011. The Administration will develop outyear funding levels based on actual programmatic requirements at a later date.

Public Law Authorizations
National Nuclear Security Administration Act, (P.L. 106-65), as amended
Consolidated Appropriations Act, 2012 (P.L. 112-74)
National Defense Authorization Act for FY 2012 (P.L. 112-81)

Overview

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) tracking nuclear convoys and providing emergency response capability; (3) performing staff oversight of three federal agent commands; (4) providing oversight to the design and implementation of classified security technologies; (5) providing critical skills training to the federal agent force and staff; (6) staffing and operating the Training and Logistics Command and conduct of one 18-week training class per year for new agents; and (7) performing administrative and logistical functions for the organization.

The additional FTEs in FY 2013 include a total of 12 federalized pilots. The federalization of pilots is one initiative implemented to enhance the aviation program operations, streamline management, and increase efficiency. The total FTEs also support the Federal Agent Force, emergency management, security and safety programs and all other key elements of the STA mission. The onboard count may not match the FTEs.

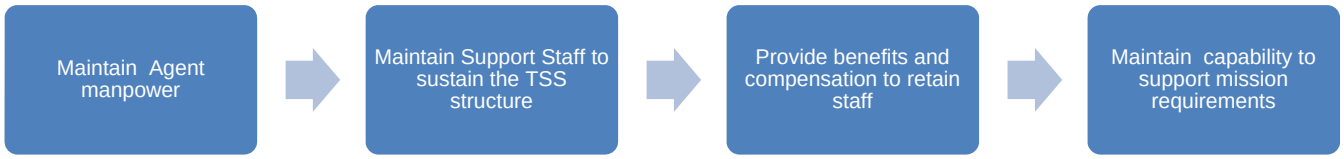
Explanation of Funding and/or Program Changes

	(Dollars in Thousands)		
	FY 2012 Enacted	FY 2013 Request	FY 2013 vs. FY 2012
Secure Transportation Asset (STA)			
Program Direction			
Salaries and Benefits	**82,613**	**84,878**	**+2,265**
The increase is attributable to the costs associated with federalizing the pilots, 0.5% calendar year 2013 pay raise and efforts to maintain agent and staff at appropriate levels required to support the mission.			
Travel	**7,758**	**7,216**	**-542**
The decrease reflects the efficiencies achieved in support of the President's Executive Order "*Promoting Efficient Spending* and streamlines travel costs by utilizing electronic means of communication such as video teleconferencing.			
Other Related Expenses	**7,631**	**12,302**	**+4,671**
The increase supports the human reliability program, fees associated with Department of Energy, Common Operating Enterprise services, and permanent change of station expenses.			
Total, Funding Change, Secure Transportation Asset, Program Direction	**98,002**	**104,396**	**+6,394**

Salaries and Benefits
Overview

Provides salaries and benefits for the program staff at Albuquerque, NM; Fort Chaffee, AR; and Washington, DC, as well as the federalized pilots, federal agents and support staff at the three federal agent force locations (Albuquerque, NM; Oak Ridge, TN; and, Amarillo, TX). Includes overtime, workmen's compensation, and health/retirement benefits associated with federal agents, secondary positions, and support staff.

Sequence



Benefits

Provide the necessary personnel to successfully meet the shipping requirements of the nuclear security enterprise.

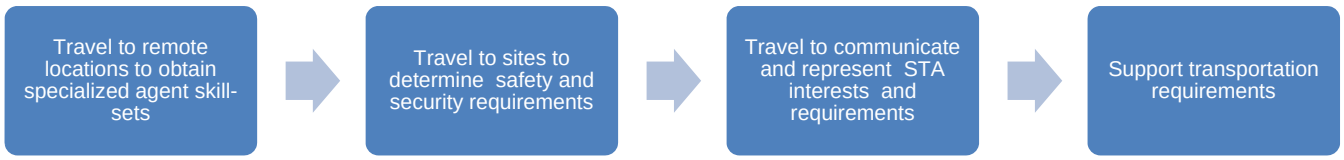
Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Stabilized the federal workforce (staff and agents) to support the workload. • Conducted recruitment for the Agent Candidate Training (ACT) class and ensured the class size matched the projected agent attrition. • Enhanced the effectiveness of the Agent Recruitment Program by implementing pre-screening criteria to evaluate candidates prior to incurring recruitment costs.	**79,644**
FY 2012	• Maintain agent strength to support workload requirements • Effectively manage overtime expenditures • Support key safety-related initiatives to reduce worker's compensation expenditures	**82,613**
FY 2013	• Continue to maintain agent strength to support workload requirements • Continue to effectively manage overtime expenditures • Continue to conduct an agent candidate class • Continue to support key safety-related initiatives to reduce worker's compensation expenditures	**84,878**
FY 2014-FY 2017	• Continue to maintain agent strength to support workload requirements • Continue to effectively manage overtime expenditures • Continue to conduct an agent candidate class • Continue to support key safety-related initiatives to reduce worker's compensation expenditures	**TBD**

Travel
Overview

Provides for travel associated with annual secure convoys, training at other federal facilities and military installations, and program oversight.

Sequence



Benefits

Supports the Administration's approach to promoting the President's initiative for reducing nuclear dangers and pursuing the goal of a world without nuclear weapons.

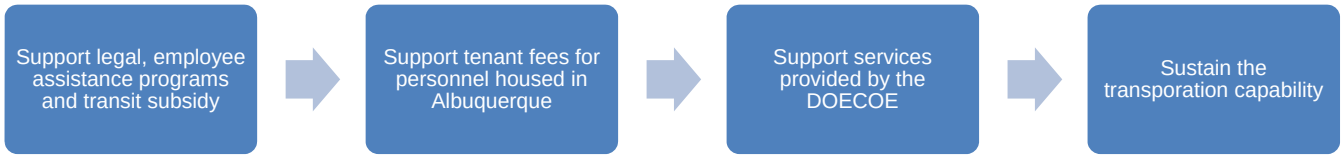
Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Supported the Nuclear Security Enterprise's shipment requirements. • Validated safety and security requirements associated with the various agent training events. • Attended various transportation-related meetings to ensure integration of shipping requirements.	**8,334**
FY 2012	• Support travel required to transport nuclear weapons, components and special nuclear material. • Support travel associated with attendance at meetings and conferences. • Support travel to federal facilities providing unique training required to maintain agent skill sets. • Support travel to identify and validate safety and security requirements associated with the weapon consolidation initiatives.	**7,758**
FY 2013	• Continue to support travel required to transport nuclear weapons, components and special nuclear material. • Continue to support to federal facilities providing unique training required to maintain agent skill sets. • Continue to support travel to identify and validate safety and security requirements associated with the weapon consolidation initiatives.	**7,216**
FY 2014-FY 2017	• Continue to support travel required to transport nuclear weapons, components and special nuclear material. • Continue to support travel required to attend meetings and conferences. • Continue to support to federal facilities providing unique training required to maintain agent skill sets. • Continue to support travel to identify and validate safety and security requirements associated with the weapon consolidation initiatives.	**TBD**

Other Related Expenses
Overview

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.

Sequence



Benefits

Provides for the means to successfully address the costs associated with administering a unique transportation operation.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Analyzed and reduced the number of Q clearances of OST employees, reducing costs. • Reduced the number of federal and contractor staff designated to maintain requirements of the Human Reliability Program; resulting in reduced costs. • Provided computer-related services to the geographically disbursed STA entities.	**6,951**
FY 2012	• Support the fees paid to the Albuquerque Complex for OST personnel. • Support the fees for services provided by the Department's Common Operating Environment. • Provide for legal, employee assistance program and transit subsidy. • Support the Human Reliability requirements.	**7,631**
FY 2013	• Support the fees paid to the Albuquerque Complex for OST personnel. • Continue to support the fees for additional services provided by the Department's Common Operating Environment. • Continue to provide for legal, employee assistance program and transit subsidy. • Continue to support the Human Reliability Program requirements.	**12,302**
FY 2014-FY 2017	• Support the fees paid to the Albuquerque Complex for OST personnel. • Continue to support the fees for services provided by the Department's Common Operating Environment. • Continue to provide for legal, employee assistance program and transit subsidy. • Continue to support the Human Reliability Program requirements.	**TBD**

Nuclear Counterterrorism Incident Response
Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Nuclear Counterterrorism Incident Response (Homeland Security) [a]			
Emergency Response (Homeland Security) [a]	135,429	136,185	150,043
National Technical Nuclear Forensics (Homeland Security) [a]	11,446	11,589	11,694
Emergency Management (Homeland Security) [a]	7,494	7,153	6,629
Operations Support (Homeland Security) [a]	8,488	8,691	8,799
International Emergency Management and Cooperation	6,986	7,129	7,139
Nuclear Counterterrorism (Homeland Security) [a]	62,660	50,222	63,248
Total, Nuclear Counterterrorism Incident Response	**232,503**	**220,969**	**247,552**

Out-Year Target Funding Profile by Subprogram and Activity

The outyear numbers for Weapons Activities do not reflect programmatic requirements. Rather, they are an extrapolation of the FY 2013 request based on rates of inflation in the Budget Control Act of 2011. The Administration will develop outyear funding levels based on actual programmatic requirements at a later date.

[a] Office of Management and Budget (OMB) Homeland Security designation.

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
Consolidated Appropriations Act, 2012 (P.L. 112-74)
National Defense Authorization Act for FY 2012 (P.L. 112-81)

Overview

The Nuclear Counterterrorism Incident Response (NCTIR) program responds to and mitigates nuclear and radiological incidents worldwide and has a lead role in defending the Nation from the threat of nuclear terrorism. NCTIR supports DOE Strategic goal #3: "enhance nuclear security through defense, nonproliferation, and environmental efforts." The Nuclear Counterterrorism program responsibility and funding resources were transferred to the Associate Administrator and Deputy Under Secretary for Counterterrorism and Counterproliferation in October 2011.

Program Accomplishments and Milestones

In FY 2011, NCTIR accomplished significant milestones in program development. These accomplishments include: 1) Deployed multiple field teams to 14 high-profile events and 13 emergency responses resulting in deployments around the world, including an 11-week deployment to Japan in response to the earthquake and tsunami at the Fukushima Nuclear Power plant; there were an additional 169 responses that did not result in deployments; 2) participated in 139 interagency domestic and international counterterrorism exercises and drills.

Explanation of Changes

The FY 2013 Request for Nuclear Counterterrorism Incident Response is a 12 percent increase over the enacted FY 2012 level.

The FY 2013 request for an additional 12% above the FY 2012 enacted level provides increases for Emergency Response for the additional render safe capabilities and reinvestment in capabilities for the First Responder and Search mission requirements; and for Nuclear Counterterrorism for accelerated experimental activities in support of non-stockpile nuclear weapons assessments and the DoD's needs.

Program Planning and Management

The FY 2013 request for NCTIR will support a strategy focused on readiness to help NNSA achieve the stated goals. This strategy supports reducing nuclear dangers through integration of its Emergency Management, Emergency Response, Forensics and International activities supported by training and operations.

Strategic Management

From the President's National Security Agenda, as detailed in the National Security Strategy and the Nuclear Posture Review Report, the Administrator established the following Key Goals for NNSA:

- Reduce nuclear dangers
- Manage the nuclear weapons stockpile and advance naval nuclear propulsion
- Modernize the NNSA infrastructure
- Strengthen the science, technology, and engineering base; and,
- Drive an integrated and effective Enterprise

Three external factors present the strongest impact to the overall achievement of the NCTIR's strategic goal:

- Threat Conditions imposed on the U.S.
- Successful Interactions with agency partners.
- Striking the right balance between technology and resources to maintain readiness

Major Outyear Priorities and Assumptions

The outyear numbers for Weapons Activities do not reflect programmatic requirements. Rather, they are an extrapolation of the FY 2013 request based on rates of inflation in the Budget Control Act of 2011. The Administration will develop outyear funding levels based on actual programmatic requirements at a later date. Major Outyear Priorities and Assumptions will be delineated in that update.

Program Goals and Funding

The outyear numbers for Weapons Activities do not reflect programmatic requirements. Rather, they are an extrapolation of the FY 2013 request based on rates of inflation in the Budget Control Act of 2011. The Administration will develop outyear funding levels based on actual programmatic requirements at a later date. Program Goals and Funding will be delineated in that update.

Explanation of Funding and/or Program Changes

	(Dollars in Thousands)		
	FY 2012 Enacted	FY 2013 Request	FY 2013 vs. FY 2012
Nuclear Counterterrorism Incident Response			
Emergency Response (Homeland Security)			
· **Nuclear Emergency Support Team**	**89,916**	**102,244**	**+12,328**
This increase reflects the additional render safe capabilities and reinvestment in capabilities for the First Responder and Search mission requirements.			
· **Other Assets**	**25,843**	**26,999**	**+1,156**
This increase provides for an upgrade to the National Atmospheric Release Advisory Center computer cluster at Lawrence Livermore National Laboratory (LLNL) and begins software modifications as well as Consequence Management Home Team improvements as a result of lessons learned with deployment to Japan at the Fukushima reactor site.			
· **Render Safe Stabilization Operations**	**20,426**	**20,800**	**+374**
This increase provides for the planned program to train, equip and assist the FBI in fielding teams to stabilize a terrorist nuclear device.			
Subtotal, Emergency Response (Homeland Security)	**136,185**	**150,043**	**+13,858**
National Technical Nuclear Forensics (Homeland Security)	**11,589**	**11,694**	**+105**
This increase reflects improvements to and maintenance of the P-tunnel.			
Emergency Management (Homeland Security)	**7,153**	**6,629**	**-524**
This decrease reflects reprioritization within NCTIR elements to accommodate increases in higher priority mission requirements.			
Operations Support (Homeland Security)	**8,691**	**8,799**	**+108**
Increases Emergency Operations Center funding to support required maintenance and operation of the Emergency Communications Network.			
International Emergency Management and Cooperation	**7,129**	**7,139**	**+10**
Reflects nominal change to implement the planned program activities.			

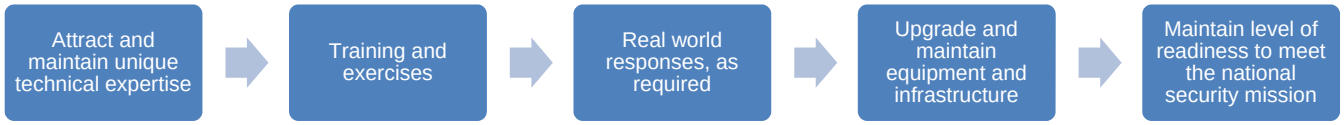
	(Dollars in Thousands)		
	FY 2012 Enacted	FY 2013 Request	FY 2013 vs. FY 2012
Nuclear Counterterrorism (Homeland Security)	**50,222**	**63,248**	**+13,026**
The increase in Nuclear Counterterrorism provides for accelerated medium and large-scale experimental activities in support of non-stockpile nuclear weapons assessments and the DOD's needs; as well as increased effort in support of (a) unique materials and explosives characterization, (b) device and render safe modeling, and (c) the development of render safe and diagnostics tools applicable to nuclear threat devices.			
Total Funding Change, Nuclear Counterterrorism Incident Response	**220,969**	**247,552**	**+26,583**

Emergency Response (Homeland Security)
Overview

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 to 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.

The major increase in this subprogram is driven by support for the emergency response teams. The increase will also address documented deficiencies from the Fukushima Daiichi incident to improve response capabilities.

Sequence



Benefits

The Emergency Response subprogram provides the Nation specialized assets that are rapidly deployable to respond to any nuclear or radiological emergency worldwide. This strengthens the United States' counterterrorism and defense against nuclear and radiological intentional and accidental releases of nuclear or radiological materials. These resources provide the public, environment, and emergency responders with quick situation resolution, long term consequence management, and advice for public safety. The resources of the Emergency Response subprogram are organized to include the Nuclear Emergency Support Team (NEST) and Other Assets.

Other Information

- Key documents and drivers: Atomic Energy Act of 1954, National Security Presidential Directives (NSPD) 28, NSPD 17/Homeland Security Presidential Directive (HSPD) 4, and NSPD 46/HSPD 15 direct DOE and other government agencies to plan for, train, and resource a robust capability to combat terrorism, especially in the area of Weapons of Mass Destruction (WMD).
- Nuclear Posture Review Report, which places "prevention of nuclear terrorism and proliferation at the top of U.S. policy agenda." April 6, 2010.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
Emergency Response (Homeland Security)		
FY 2011		**135,429**
FY 2012		**136,185**
FY 2013		**150,043**
FY 2014-FY 2017		**TBD**
Nuclear Emergency Support Team		
FY 2011	• Collaborated with federal interagency partners to develop and finalize the Interagency Radiological/Nuclear Search Plan (IARNSP), which features DOE as the technical lead for radiological/nuclear search.	**90,443**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	• Provided DOE/NNSA 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. • Deployed multiple field teams to 14 high-profile events and 13 emergency responses resulting in deployments around the world, including an 11-week deployment to Japan in support of the earthquake and tidal wave at the Fukushima Dai-ichi Nuclear Power plant. • There were an additional 169 responses that did not result in deployments; and Emergency response personnel participated in 139 interagency domestic and international counterterrorism exercises and drills.	
FY 2012	• Provide DOE/NNSA 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. • Provide DOE/NNSA 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 and integrate DHS Secondary Reachback into a National Reachback Program. • Address threats posed by domestic and foreign terrorists likely to have both the will and means to employ WMD. • Complete deliberate planning for 8-10 potential render safe response requirements. • Facilitate 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 material. • 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 Weapon Accident/Incident Exercises (NUWAIX) during which DOE/NNSA was not the Lead Federal Agency. • Integrate emerging technologies into DOE/NNSA response team capabilities to improve response capabilities. • Develop and integrate stabilization technologies and capabilities in support of the DOE/NNSA and FBI response teams. • Deploy stabilization tools into cities designated by the FBI. • Continue training and exercising for responding to scenarios that involve radiological at-sea search on ocean-going vessels.	**89,916**
FY 2013	• Provide DOE/NNSA 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 Threat Credibility Estimate (TCE) for each event. • Provide DOE/NNSA 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 and continue integration of DNDO National Reachback Program.	**102,244**

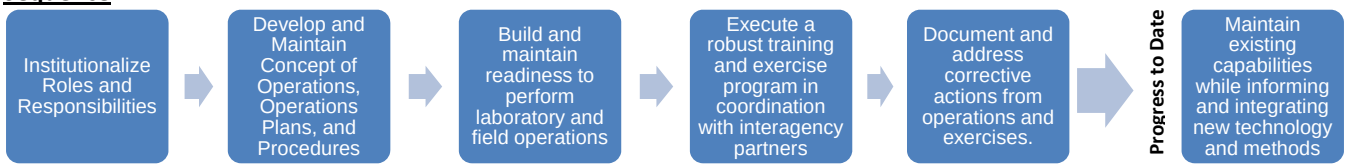
Fiscal Year	Activity	Funding (Dollars in Thousands)
	• Increase Render Safe capabilities for an identified critical mission area in support of Principle Operational Partner. This effort includes predictive capability, diagnostics, and training for responders. • Address threats posed by domestic and foreign terrorists likely to have both the will and means to employ WMD. • 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 Weapon Accident/Incident Exercises (NUWAIX) during which DOE/NNSA is not the Lead Federal Agency. • Deploy stabilization tools to additional cities designated by the FBI. • Continue sustainment training for stabilization tools for existing cities • Final integration of next generation search backpack into DOE/NNSA response teams. • Implement advanced inverse modeling capability for improvised nuclear weapons within the Render Safe home teams to inform response options during an emergency.	
FY 2014-FY 2017	• Provide DOE/NNSA 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 WMD. • Continue collection and expert analysis of radiological material signatures through DOE Radiological Triage program. • Facilitate 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 material. • 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 Weapon Accident/Incident Exercises (NUWAIX) during which DOE/NNSA may be the Lead Federal Agency. • Final integration of next generation neutron diagnostic tool for DOE/NNSA response teams.	**TBD**
Other Assets		
FY 2011	• Provided consequence management response support for eleven weeks to the country of Japan in response to the earthquake and tidal wave at the site of Fukushima Dai-ichi Nuclear Power Plant. • Maintained readiness capabilities for consequence management responders. • Hosted 5th International REAC/TS Symposium on the medical basis for radiation accident preparedness.	**25,660**
FY 2012	• Provide assistance to local, state and other federal agencies and conduct exercises in response to emergencies involving nuclear/radiological materials in support of States and local jurisdictions. • Work jointly with the Federal coordinating agency which is usually the Department of Homeland Security / Federal Emergency Management Agency during any radiological accident or incident.	**25,843**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	• Coordinate with the Environmental Protection Agency (EPA)/Nuclear Regulatory Commission (NRC) and other elements within DOE, and provides support to the NEST programs to safeguard the public and environment to ensure the successful resolution of an accident or incident. • Served as the lead Federal Agency for National level Exercise Amber Waves.	
FY 2013	• 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. • Upgrade NARAC computer cluster at LLNL and begin software modifications. • Develop additional Consequence Management capabilities, training, and software tools to process larger volumes of data and requests. Upgrade communications and information management systems.	**26,999**
FY 2014-FY 2017	• Complete additional NARAC software modifications to include model refinement based on field meteorological and radiation measurements, 3D effects to include urban settings. • Maintain commensurate training to accommodate broader base of requests to the Consequence Management Home Team (CMHT). Upgrade data telemetry systems for communications between the field teams and CMHT. • Explore alternatives to expand regional Aerial Measuring System (AMS).	**TBD**
Render Safe Stabilization Operations		
FY 2011	• In coordination with FBI, fully trained and equipped City 1 and City 2 to stabilize a terrorist nuclear device.	**19,326**
FY 2012	• In coordination with FBI, fully train and equip City 3 and City 4 to stabilize a terrorist nuclear device. • Build DOE/NNSA Render Safe home team to improve technical advice capability to support employ of stabilization tools during a response.	**20,426**
FY 2013	• In coordination with FBI, fully train and equip City 5 to stabilize a terrorist nuclear device. • Production of the second generation of stabilization equipment.	**20,800**
FY 2014-FY 2017	• In coordination with FBI, continue deployment of stabilization capability to additional cities at a rate of 1-2 per year with an ultimate goal of 16 cities trained and equipped to the full stabilization capabilities. • Deployment of the second generation of stabilization equipment to selected cities, thus improving the national emergency response capability and fully integrating this technology with response elements and associated deployed technologies.	**TBD**

National Technical Nuclear Forensics (Homeland Security)
Overview

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, and readiness to deploy ground sample collection, device disposition, and device assessment teams and conduct laboratory operations in support of bulk actinide and post detonation forensics.

Sequence



Benefits

The NTNF subprogram provides operational capability, technology integration and technology development. This subprogram's activity integrates into the interagency National Technical Nuclear Forensics program, including pre- and post-detonation nuclear forensics. The NTNF subprogram aims to establish missions, institutionalize roles and responsibilities and enable operational support for pre-detonation and post-detonation nuclear forensics and attribution programs, including training and exercises, equipment purchases and maintenance, logistics, and deployment readiness to support ground sample collection and Deployable Field Laboratory operations "Our nation's ability to conduct forensic analyses of nuclear materials, nuclear explosions, and debris from radiological dispersion devices can contribute substantially to deterring, limiting, and responding to nuclear terrorism—complementing and enhancing efforts to secure nuclear materials and detect theft, diversion, and clandestine production. The capability to identify or exclude possible origins of nuclear material could, most importantly, enhance U.S. diplomatic and investigative efforts to prevent nuclear terrorism." – ***National Academy of Sciences (July 2010)***

Other Information

National Academy of Sciences, "Nuclear Forensics: A Capability at Risk" - http://dels.nas.edu/Report/Nuclear-Forensics-Capability-Risk/12966

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Initiation of the Bulk SNM Analysis Program in support of the FBI, the Nuclear Materials Information Program (NMIP), and interagency in the analysis of Actinide materials for forensics purposes. • Executed a robust Post-Detonation ground collection exercise program in cooperation with the FBI and DoD. • Led the interagency planning for the US/UK Post Detonation Data Evaluation Exercise "Opal Tiger."	**11,446**
FY 2012	• Execute Exercise Opal Tiger. • Execute End to End Pre Detonation Device Exercise Marble Challenge 12-02. • Develop and maintain concept of operations, operational plans, and procedures. • Develop modeling, signatures development, knowledge base and data management.	**11,589**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	• Support FBI in collection of pre-detonation device forensics evidence. • Transition from G-Tunnel to P-Tunnel in support of Disposition operations. • Support FBI and DoD in collection, analysis, and evaluation in support of post-detonation TNF. • Support the FBI and interagency in Bulk Analysis of Special Nuclear Materials. • Support training, drills, and exercises.	
FY 2013	• Continue to plan and participate in pre and post detonation NTNF exercises. • Continue to provide capability and support to the national level interagency NTNF program. • Continue improvements and maintain P-Tunnel in support of the Pre-Detonation Device Program. • Maintain and improve capability and readiness to respond to pre and post detonation events, leading ultimately to Attribution.	**11,694**
FY 2014-FY 2017	• During the planning period, refine the Concept of Operations and enable the training and technology to support FBI and DoD in post-detonation forensics.	**TBD**

Emergency Management (Homeland Security)
Overview

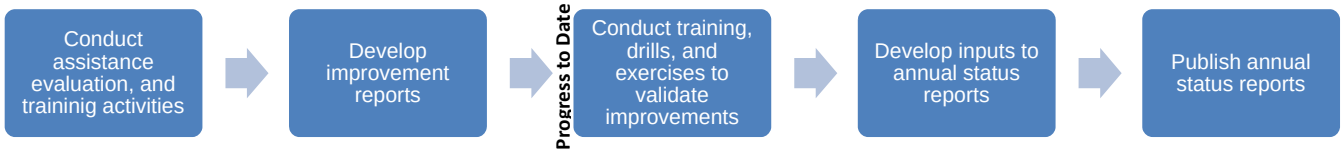
The Emergency Management subprogram develops and implements specific programs, plans, and systems to minimize the impacts of emergencies on worker and public health and safety, the environment, and national security. This is accomplished by promulgating appropriate Departmental requirements and implementing guidance; developing and conducting training and other emergency preparedness activities; supporting readiness assurance activities and participating in interagency activities. The objective is to continue to have a fully implemented and fully integrated Departmental comprehensive emergency management system throughout the Enterprise.

The Emergency Management subprogram serves as the single point of contact for implementing and coordinating emergency management policy, preparedness, and response activities with NNSA, including managing and coordinating NNSA field and contractor implementation of emergency management policy.

The Emergency Operations Training Academy (EOTA) is an academically accepted 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 and oversight in order 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.

Sequence



Benefits

- Emergency Management subprogram provides for the comprehensive, integrated emergency planning, preparedness, and response programs throughout the Department's field operations. The subprogram develops specific requirements for programs, plans and systems to minimize the impact of emergencies on national security, worker and public safety, and the environment. These activities ultimately lead to more efficient use of resources in addressing Emergency Management needs throughout the Department consistent with changing missions of its facilities.
- NNSA Emergency Management Implementation provides ongoing technical assistance and evaluation support for implementation of emergency management requirements at NNSA sites and facilities to increase effectiveness of emergency response.
- The EOTA provides a robust curriculum of training courses designed to support implementation of comprehensive emergency management requirements as well as support of response activities thereby enhancing effective emergency response.
- The Continuity Program supports implementation of nationally-promulgated requirements for planning, training, and exercises to respond effectively to a continuity event.

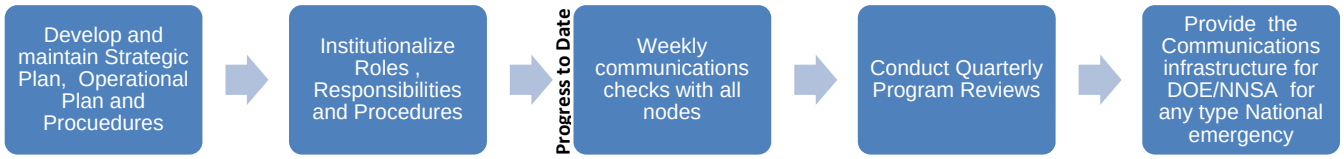
Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Provided the necessary policy, procedural, continuity, training and no-notice exercises and support in order to enable the Office of Emergency Operations to maintain its level of readiness.	**7,494**
FY 2012	• In addition to conducting technical assistance and information sharing activities, the Emergency Management subprogram will conduct between five to six no-notice exercises at DOE/NNSA sites to gauge emergency preparedness. Additional emphasis will be placed on the impacts of beyond-design-basis-events. • EOTA will continue with the delivery of intermediate and advanced-level Incident Command System training courses, in addition to business system improvement. • The Continuity Program (CP) will continue to participate in periodic training and exercises as required.	**7,153**
FY 2013	• The Emergency Management subprogram will conduct five no-notice exercises at DOE/NNSA sites to gauge emergency preparedness. The Emergency Management subprogram will continue to conduct activities to integrate emergency management practices at NNSA sites. EOTA will continue to serve as the primary point of training for first responder and render safe activities. • The CP plans to 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.	**6,629**
FY 2014-FY 2017	• Activities of all the offices within Emergency Management will be similar to those in FY 2013 to achieve the proper investment for NCTIR to maintain readiness.	**TBD**

Operations Support (Homeland Security)
Overview

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.

Sequence



Benefits

Operations Support activities support Headquarters emergency response operations through the Headquarters Watch Office and Operations Centers. Program staffs participate in drills and exercises to improve communication and notification capabilities and procedures. Operations Support manages and operates the Headquarters Emergency Communications Network, which is a mission critical infrastructure asset, to facilitate unclassified and classified transmission of data, audio, and videoconferences in support of Department-wide task forces, meetings/briefings, exercises/drills and all DOE site emergencies. The benefit of these activities is to provide DOE decision-makers with the critical command, control and communications during any agency or national emergency situation.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Maintained and operated the Emergency Communications Network for the DOE/NNSA to support the exchange of classified and unclassified voice, data and video information.	**8,488**
FY 2012	• Provide the DOE/NNSA national emergency response community a world-class, state-of-the-art, high speed, global emergency communications network to support the exchange of classified and unclassified voice, data and video information. • Leverage the newly formalized Nuclear Threat Reduction Channels (NTR) and establish secure communications to facilitate the sharing of disablement tool technologies and other sensitive information.	**8,691**
FY 2013	• Continue maintenance and operation of the ECN in order to provide a scalable, interoperating system capable of linking key Emergency Management Team personnel seamlessly, to provide real-time support to the DOE/NNSA Headquarters Emergency Management Team.	**8,799**
FY 2014-FY 2017	• Continue to maintain, operate and enhance the technical capabilities of the ECN in order to meet the National Security mission requirements and to support the NNSA One Network vision.	**TBD**

International Emergency Management and Cooperation
Overview

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, Canada, Chile, China, Denmark, Finland, France, Iceland, India, Iraq, Israel, Japan, Malaysia, Mexico, Morocco, Norway, Pakistan, Philippines, Russia, Singapore, South Africa, South Korea, Sweden, Thailand, and Taiwan. 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.

Sequence

Benefits

The IEMC supports emergency response cooperative activities bilaterally, multi-laterally and under various international agreements and arrangements and Presidential and Global Initiatives to ensure programs are in place to protect emergency personnel, the public and the environment from the consequences of nuclear/radiological incidents and accidents and to combat nuclear/radiological terrorism. The IEMC enables NNSA's commitment in assisting the international community combat nuclear/radiological terrorism. The IEMC collaborates with more than 80 foreign governments and 10 international organizations with projects ranging from providing assistance to foreign governments for improving their emergency preparedness and response programs, to joint collaborative activities to improve emergency management infrastructure worldwide and the Global Initiative to Combat Nuclear Terrorism (GICNT).

Other Information

Key Documents:

- President's Nuclear Security Vision, "Technical support for the President's arms control and nonproliferation Agenda"
- Nuclear Security Summit, "nuclear terrorism is the most immediate and extreme threat to global security"
- President's Prague Initiative, "President stated the importance of the GICNT and PSI"
- Nonproliferation Treaty, IAEA Statute and Conventions "ensuring peaceful uses of nuclear technology and material and strengthening safeguards, safety, security and ensuring appropriate assistance in case of nuclear accidents and radiological emergencies"
- G-8, "Nuclear Terrorism and Nonproliferation Initiatives"
- DOE Strategic Plan Goal 3, "develop an active nuclear and radiological material security dialogue and cooperation with key domestic and international partners, including Russia, China, India, and others"
- Atomic Energy Act of 1954, as Amended, "Nuclear/Radiological cooperation with other nations"
- Nuclear Posture Review Report, which places "prevention of nuclear terrorism and proliferation at the top of U.S. policy agenda." April 6, 2010

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Designed, conducted and organized specialized emergency management training courses for emergency response, emergency medical response, and Major Public Event radiological security and delivered these courses to partner nations. • Bilaterally and with international organizations supported development of worldwide capabilities for atmospheric plume modeling, radiological triage, radiation medical assistance, specialized maritime operations and technical assistance and methods for combating nuclear terrorism.	**6,986**
FY 2012	• Supports the IAEA in developing and implementing new technical standards and guidance for emergency management affecting all member states (approximately 150 countries). • Provides communication and radiation monitoring equipment and technical assistance for the IAEA and foreign government emergency programs to address nuclear and radiological incidents and accidents including lost sources. • Supports emergency response cooperative activities bilaterally, multi-laterally and under various international agreements and arrangements and Presidential and Global Initiatives to ensure programs are in place to protect emergency personnel, the public and the environment from the consequences of nuclear/radiological incidents and accidents and to combat nuclear/radiological terrorism. • Conducts emergency drills and exercises involving nuclear facility workers and local and national government counterparts; and developed and conducted training courses for nuclear facility emergency staff and other emergency responders. • Continues to design, organize and conduct specialized emergency management training courses and specialized programs to support worldwide capabilities for consequence management response, atmospheric plume modeling, radiological triage, radiation medical assistance, specialized Maritime operations, and technical assistance and methods and procedures for combating nuclear terrorism. • Specific emergency management activities are ongoing in China, Malaysia, Philippines, South Korea, Thailand, Russia, Kazakhstan, Argentina, Brazil, Chile, Iceland, Morocco and South Africa. • Working to maximize synergies and ensure integration of emergency management systems and training and emergency response activities with other ongoing NNSA projects involving foreign partners.	**7,129**
FY 2013	• Provides communication and radiation monitoring equipment, training and technical assistance for the IAEA and foreign government emergency programs to address nuclear and radiological incidents and accidents. • Supports emergency response cooperative activities bilaterally, multi-laterally and under various international agreements and arrangements and Presidential and Global Initiatives to ensure programs are in place to protect emergency personnel, the public and the environment from the consequences of nuclear/radiological incidents and accidents and to combat nuclear/radiological terrorism. • For partner nations, develops and conducts emergency drills and exercises involving emergency responders from local and national levels of government and develops and conducts training courses for nuclear facility emergency staff and other emergency responders. • With an emphasis on building regional capabilities, continues to design, organize and conduct specialized emergency management training courses and provide technical assistance to address methods and procedures for combating nuclear terrorism. • Provides specific training tailored to partner nation needs on consequence	**7,139**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	management, emergency response, medical response, major public event security, and exercise design and conduct. • Implements specialized programs to support worldwide capabilities for atmospheric plume modeling, radiological triage, radiation medical assistance, specialized maritime operations, and consequence management to enhance the international emergency management system. • Specific emergency management activities will occur in China, Malaysia, Indonesia, Taiwan, South Korea, Thailand, Russia, Kazakhstan, Mexico, Argentina, Brazil, Chile, Iceland, Morocco Israel, Cambodia, Vietnam, Colombia and South Africa. • Working with NNSA entities to maximize synergies and ensure integration of emergency management systems and training and emergency response activities with other ongoing NNSA projects involving foreign partners.	
FY 2014-FY 2017	• IEMC continues to design, organize and conduct specialized emergency management training courses and programs to meet the specific emergency management needs of partner nations. • IEMC provides communication and radiation monitoring equipment, technical assistance and training for International Atomic Energy Agency (IAEA) and foreign government emergency programs to address nuclear/radiological incidents and accidents including lost radiological sources.	**TBD**

Nuclear Counterterrorism (Homeland Security)
Overview

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 stockpile-related 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 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 diagnostics and render safe tools. In FY 2013, NCT will be continuing a series of major render safe experiments in support of the Joint Disablement Campaign, a NNSA/DoD effort to develop, model, and validate render safe tools, techniques, and procedures.

Sequence

Benefits

- The NCT subprogram provides the necessary analysis of NNSA-specific data needed by other agencies to counter the threat of a terrorist nuclear device or non-stockpile nuclear weapons designs. The NCT subprogram provides tremendous return on investment because it leverages the full range of tools, techniques, and expertise developed within the nuclear weapons design and engineering laboratories.
- NCT, through its partnerships with the NNSA Office of Defense Science, the DOE Office of Intelligence and Counterintelligence, and the Intelligence Community, maintains and sustains technical expertise to evaluate and assess foreign nuclear weapons as well as possible terrorist nuclear devices.

Other Information

Nuclear Posture Review Report, which places "prevention of nuclear terrorism and proliferation at the top of U.S. policy agenda." April 6, 2010

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Enabled specialized R&D for technical analysis, equipment development, and end user training necessary to maintain the Nation's capabilities for research on and response to non-stockpile nuclear weapons designs, e.g., Improvised nuclear devices and foreign nuclear weapons. • Prioritized nuclear and energetic materials for future characterization efforts • Ensured ability to meet the most urgent of DoD requirements in our role for worldwide render safe support. • Maintained capabilities to respond to intelligence requests and operational readiness through acquisition of needed specialized equipment and training of interagency staff on non-stockpile weapons designs, thus decreasing the Nation's risk in the event of a nuclear terrorist strike. • Began development of next generation neutron diagnostics tool. • Completed analysis of major render safe experiments in support of the Joint Disablement Campaign.	**62,660**

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• Enable specialized R&D for technical analysis, equipment development, and end user training necessary to maintain the Nation's capabilities for research on and response to non-stockpile nuclear weapons designs, e.g., Improvised nuclear devices and foreign nuclear weapons. • Continue characterization of nuclear and energetic materials with ongoing prioritization informed by intelligence • Ensure ability to meet the most urgent of DoD requirements in our role for worldwide render safe support. • Maintain capabilities to respond to intelligence requests and operational readiness through acquisition of needed specialized equipment and training of interagency staff on non-stockpile weapons designs, thus decreasing the Nation's risk in the event of a nuclear terrorist strike. • Continue development of next generation neutron diagnostics tool • Begin planning for next large-scale experiment in support of the Joint Disablement Campaign	**50,222**
FY 2013	• Enable specialized R&D for technical analysis, equipment development, and end user training necessary to maintain the Nation's capabilities for research on and response to non-stockpile nuclear weapons designs, e.g., Improvised nuclear devices and foreign nuclear weapons. • Continue characterization of nuclear and energetic materials with ongoing prioritization informed by intelligence • Ensure ability to meet the most urgent of DoD requirements in our role for worldwide render safe support. • Maintain capabilities to respond to intelligence requests and operational readiness through acquisition of needed specialized equipment and training of interagency staff on non-stockpile weapons designs, thus decreasing the Nation's risk in the event of a nuclear terrorist strike. • Complete development of next generation neutron diagnostics tool • Execute large-scale experiment in support of the Joint Disablement Campaign	**63,248**
FY 2014-FY 2017	• As an R&D program, NCT activities in future years will depend largely on progress and discoveries in the near term. Core enduring activities within NCT include: ▪ Nuclear materials characterization and neutronics ▪ Characterization of energetic materials ▪ Modeling, simulation, and assessment of foreign and potential terrorist nuclear devices ▪ Direct support to the intelligence community through technical analyses related to emerging threats ▪ Development of new technologies for nuclear and energetic materials diagnostics and identification ▪ Development of new render safe tools and execution of render safe experiments in support of National Mission Force/Emergency Response community	**TBD**

Capital Operating Expenses and Construction Summary

Capital Operating Expenses[a]

(dollars in thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Capital Operating Expenses			
General Plant Projects	420	429	438
Capital Equipment	2,200	2,248	2,297
Total, Capital Operating Expenses	**2,620**	**2,677**	**2,735**

Outyear Capital Operating Expenses

(dollars in thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request
Capital Operating Expenses				
General Plant Projects	448	458	468	478
Capital Equipment	2,348	2,400	2,453	2,507
Total, Capital Operating Expenses	**2,796**	**2,858**	**2,921**	**2,985**

[a] Funds are appropriated for Operations and Maintenance, which includes operating expenses, capital equipment and general plant projects. The program no longer budgets separately for capital equipment and general plant projects. Funding shown reflects estimates based on actual FY 2011 obligations.

Facilities and Infrastructure Recapitalization Program
Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Facilities and Infrastructure Recapitalization Program			
Operations and Maintenance (O&M)			
Recapitalization	77,160	81,720	0
Infrastructure Planning	6,494	9,400	0
Facility Disposition	9,920	5,000	0
Total, O&M Facilities and Infrastructure Recapitalization Program	**93,574**	**96,120**	**0**

Out-Year Funding Profile by Subprogram and Activity

The outyear numbers for Weapons Activities do not reflect programmatic requirements. Rather, they are an extrapolation of the FY 2013 request based on rates of inflation in the Budget Control Act of 2011. The Administration will develop outyear funding levels based on actual programmatic requirements at a later date.

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
Consolidated Appropriations Act, 2012 (P.L. 112-74)
National Defense Authorization Act for FY 2012 (P.L. 112-81)

Overview

The Facilities and Infrastructure Recapitalization Program (FIRP) has concluded its mission to restore, rebuild and revitalize the physical infrastructure of the nuclear security enterprise. The program funding has been utilized to address an integrated, prioritized series of repair and infrastructure projects that significantly increased operational efficiency and effectiveness by focusing on elimination of legacy deferred maintenance, and improved safety. The FIRP readily responded to changing NNSA priorities and decisions affecting sites and their facilities through the implementation of its prioritized project list targeting the most critical facilities and infrastructure deficiencies first.

Program Accomplishments and Milestones

During FY 2011, FIRP accomplished several significant milestones in program management and/or program development. Such accomplishments include:
1) reduced legacy deferred maintenance by $36 million which brought the cumulative total to $837 million, 93% of the program goal of $900 million; 2) reduced the NNSA complex footprint by 126,000 gross square feet, which brought the cumulative total to 3,387,000, 113% of the program goal of 3,000,000; 3) completed roofing assessments at two remaining sites to bring roof assets at all eight NNSA sites into the Roof Asset Management Program's (RAMP) portfolio.

Explanation of Changes

The Department's request of $0 in Fiscal Year 2013 for the Facilities and Infrastructure Recapitalization Program (FIRP) is a 100 percent decrease from the requested FY 2012 level.

In FY 2012, FIRP will conclude its eleven year effort by reducing an additional $25 million of legacy deferred maintenance throughout the nuclear security enterprise, eliminating more than 60,000 gross square feet of excess footprint, and replacing more than 300,000 square feet of failing roofs with energy efficient cool roofs.
In FY 2013, the RAMP will continue under the Capabilities Based Facilities and Infrastructure (CBFI) subprogram under the Readiness in Technical Base Facilities (RTBF) program and the successful FIRP business model will be refocused on sustaining core capabilities.

Program Planning and Management

This program concludes in FY 2012; therefore this section is not applicable.

Strategic Management

This program concludes in FY 2012; therefore this section is not applicable.

Major Outyear Priorities and Assumptions

This program concludes in FY 2012; therefore this section is not applicable.

Program Goals and Funding

This program concludes in FY 2012; therefore this section is not applicable.

Explanation of Funding and/or Program Changes

	(Dollars in Thousands)		
	FY 2012 Enacted	FY 2013 Request	FY 2013 vs. FY 2012
Facilities and Infrastructure Recapitalization Program			
Operations and Maintenance			
Recapitalization	**81,720**	**0**	**-81,720**
This decrease reflects the conclusion of FIRP in FY 2012.			
Infrastructure Planning	**9,400**	**0**	**-9,400**
The decrease reflects the conclusion of FIRP in FY 2012.			
Facility Disposition	**5,000**	**0**	**-5,000**
The decrease reflects the conclusion of FIRP in FY 2012.			
Total Funding Change, Facilities and Infrastructure Recapitalization Program	**96,120**	**0**	**-96,120**

Recapitalization
Overview

Recapitalization funded capital renewal projects required to restore the facilities and infrastructure of the nuclear security enterprise to an acceptable condition. The subprogram funded projects in accordance with established criteria and priorities that target deferred maintenance reduction and repair (non-programmatic) of facilities and infrastructure.

Sequence

Not applicable

Benefits

- Repaired, revitalized, and restored aging facilities that have continued usefulness
- Extended the life of facilities that were nearing the end of their expected life
- Replaced mechanical and electrical systems that were past their expected life, and were incurring increasing repair costs
- Increased operational efficiency and effectiveness
- Improved safety of facilities

Other Information

- Recapitalization sub-program accomplishments are tracked in FIRP Work Authorization Statements of Work, and project reports in the Baseline Assessment, Reporting and Tracking Tool (BARTT).

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Eliminated $28.7 million of legacy deferred maintenance, and expanded the RAMP to incorporate all remaining sites into NNSA's roofing portfolio.	**77,160**
FY 2012	• Improves safety and the restoration of facilities that accommodate the people, equipment, and material necessary to support scientific research, production, and testing to conduct the Stockpile Stewardship Program, the primary NNSA mission. • FY 2012 deferred maintenance reduction projects are predominantly replacement of mechanical and electrical systems and utility distribution components at six sites. • Refurbishment projects (non-programmatic) that renovate landlord or multi-program facilities, address adaptive reuse (conversion) or alterations to existing facilities, bring existing production and laboratory facilities into compliance with mandated codes and/or standards, or reduce the site landlord's total ownership costs of facilities and infrastructure. • Invested approximately $126,000,000 (FY 2004-FY 2011) in its enterprise-wide Roof Asset Management Program and plans to provide $15,000,000 in FY 2012 to continue an effective, corporate approach for the management of NNSA's roofing assets.	**81,720**
FY 2013	• FIRP concludes in FY 2012.	**0**
FY 2014-FY 2017	• FIRP concludes in FY 2012.	**0**

Infrastructure Planning
Overview

Infrastructure Planning funded planning and design activities for upcoming and ongoing Recapitalization projects. Its primary objective was to ensure that projects are adequately planned and designed in advance of project start. The planning funds permitted the timely use of Recapitalization funds and effective project execution, using a graded approach to meet the requirements of DOE Order 413.3B, "Program and Project Management for the Acquisition of Capital Assets." The subprogram supported: the establishment of Recapitalization project baselines; planning and design for priority general infrastructure projects; contract preparation and other activities necessary to ensure the readiness to obligate and execute funds. Other key activities funded by this subprogram include assessments of the physical condition of the enterprise to aid in the prioritization of deferred maintenance reduction and facility consolidation efforts.

Sequence

Not applicable

Benefits

- Allowed timely design of new projects that accurately reflect existing conditions and required scope
- Permitted scope, schedule and cost to be clearly understood before the work undergoes procurement process
- Promoted effective use and timely costing of Recapitalization funds by having completed designs available for reallocation of underruns and contingency from completed Recap projects

Other Information

- Infrastructure Planning sub-program accomplishments were tracked in FIRP Work Authorization Statements of Work, and project reports in the Baseline Assessment, Reporting and Tracking Tool (BARTT).

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Completed designs of FY11 Recapitalization projects, initiated planning and design of the FY12 Recap program, and completed Other Project Cost (OPC) activities for FIRP Utility Line Item projects.	**6,494**
FY 2012	• Designs repairs and refurbishments of mission critical and mission dependent facilities throughout the enterprise. The preponderance of work is in building mechanical and electrical systems, HVACs, chillers and cooling towers, steam pipe repairs, and high voltage electrical distribution upgrades. • Funds pre and post award activities necessary for the procurement of project materials and construction, and other project costs through execution and contract closeouts. • Funds unique, FIRP "end of program" documentation, assessments, closeouts, record keeping, etc.	**9,400**
FY 2013	• FIRP concludes in FY 2012.	**0**
FY 2014-FY 2017	• FIRP concludes in FY 2012.	**0**

Facility Disposition
Overview

The Facility Disposition subprogram funded the decontamination, dismantlement, removal and disposal of excess facilities that have been deactivated. This included facilities that are excess to current and future NNSA mission requirements, and are not contaminated by weapons processes. The subprogram achieved its initial commitment to fund a cumulative 3,000,000 gross square feet (gsf) for disposition in FY 2008. This subprogram resumed in FY 2010 to contribute to FIRP achieving a $900,000,000 legacy DM reduction by the program's end. An aggressively pursued disposition program was a necessary component of a successfully executed asset management program. This action restored that capability to NNSA's corporate facilities management activities.

Sequence

Not applicable

Benefits

- Reduced energy consumption, security risks, environment, safety and health hazards, surveillance and maintenance costs, and deferred maintenance
- Contributed to the realization of a smaller, safer, more secure and less expensive nuclear security enterprise.

Other Information

- Facility Disposition sub-program accomplishments were tracked in FIRP Work Authorization Statements of Work, and project reports in the Baseline Assessment, Reporting and Tracking Tool (BARTT).

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Eliminated 126,000 square feet of excess footprint at three sites, and $6.9 million of legacy deferred maintenance.	**9,920**
FY 2012	• Demolishes excess utility buildings and structures throughout the Y-12 site, and dispositions various trailers and transportable buildings to clear footprint in the TA-18 area at LANL.	**5,000**
FY 2013	• FIRP concludes in FY 2012.	**0**
FY 2014-FY 2017	• FIRP concludes in FY 2012.	**0**

Capital Operating Expenses and Construction Summary

Capital Operating Expenses[a]

(dollars in thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Capital Operating Expenses			
General Plant Projects	19,278	19,702	0
Capital Equipment	0	0	0
Total, Capital Operating Expenses	**19,278**	**19,702**	**0**

Outyear Capital Operating Expenses

(dollars in thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request
Capital Operating Expenses				
General Plant Projects	0	0	0	0
Capital Equipment	0	0	0	0
Total, Capital Operating Expenses	**0**	**0**	**0**	**0**

[a] Funds are appropriated for Operations and Maintenance, which includes operating expenses, capital equipment and general plant projects. The program no longer budgets separately for capital equipment and general plant projects. Funding shown reflects estimates based on actual FY 2011 obligations.

Site Stewardship
Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Site Stewardship			
Operations and Maintenance			
Environmental Projects and Operations	41,970	45,191	46,978
Energy Modernization and Investment Program	6,618	0	10,262
Nuclear Materials Integration	41,169	33,390	18,963
Corporate Project Management	0	0	13,798
Total, Operations and Maintenance	**89,757**	**78,581**	**90,001**
Construction	**14,970**	**0**	**0**
Total, Site Stewardship	**104,727**	**78,581**	**90,001**

Out-Year Funding Profile by Subprogram and Activity

The outyear numbers for Weapons Activities do not reflect programmatic requirements. Rather, they are an extrapolation of the FY 2013 request based on rates of inflation in the Budget Control Act of 2011. The Administration will develop outyear funding levels based on actual programmatic requirements at a later date.

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
Consolidated Appropriations Act, 2012 (P.L. 112-74)
National Defense Authorization Act for FY 2012 (P.L. 112-81)

Overview

The goal of Site Stewardship is to ensure the overall health and viability of NNSA's nuclear security enterprise and bringing focus on environmental compliance, sustainability and energy efficiency and nuclear materials disposition. The program goal and objective of Site Stewardship align with the Department's Strategic Plan (May 2011) goals and management principles, by ensuring capabilities and resources are available to address a number of environmental, energy, security and management challenges.

Consistent with the Site Stewardship goal, NNSA is requesting funding for two additional sub-elements; Energy Modernization and Investment Program (EMIP) and Corporate Project Management, within this activity starting in FY 2013.

Program Accomplishments and Milestones

Environmental Projects and Operations submitted all regulatory documents and performed all required monitoring activities at the Kansas City Plant (KCP), Lawrence Livermore National Laboratory (LLNL), Pantex Plant (PXP) and Sandia National Laboratories; demolished LLNL Building 419 in compliance with Resource Conservation and Recovery Act requirements; repaired KCP Outfall 002 storm sewer piping to ensure compliance with State of Missouri requirements; and completed Southeast Pump & Treat System wellhead reconfiguration work at PX. Nuclear Materials Integration achieved removal of 90% of security category I and II special nuclear material from LLNL, completed 100% of Y-12 Site Treatment Plan disposition shipments, dispositioned 40 Inactive actinide items and 14 containers of excess plutonium from LANL and initiated a contract to design and build a glovebox for treatment and disposal of NNSA sodium-bonded debris bed materials currently stored at the Idaho National Laboratory; and demonstrated chemical removal of fission products from weapon program legacy Mk-42 target material at ORNL. The Energy Modernization and Investment Program received first year direct appropriations and executed utility metering projects at NNSA sites to improve efficiency and sustainable building operations in support of statutory metering requirements.

Explanation of Changes

The Department requests $90 million in Fiscal Year 2013 for Site Stewardship, which is an increase of $11 million, 15 percent, over the enacted FY 2012 level. The

increases within Site Stewardship (Environmental Projects and Operations +$2M, Energy Modernization and Investment Program +$10M, and Corporate Project Management +$14M) are offset by decreases to other sub-elements (Nuclear Materials Integration -$14M). Corporate Project Management is a new subprogram that will focus on unifying the project management processes into a single comprehensive and corporate program.

Program Planning and Management

Site Stewardship regularly validates its work and funding priorities, which are aligned with the Department's Strategic Plan goals and management principles. By engaging in quarterly project reviews of its work activities across the nuclear security enterprise and allocating resources to high priority projects, Site Stewardship is able to address those issues that reduce risk and ensure the overall protection of public health, safety and the environment, as well as sustainability of the nuclear security enterprise.

Strategic Management

These factors present the strongest impact to the overall achievement of the program's strategic goals:

- Budgeting for potentially new unforeseen federal/state regulatory requirements and;
- Ensuring coordination across DOE programs office and with other federal agencies.

Site Stewardship will continue to address those areas that are critical and support and align the nuclear security enterprise with national mission requirements.

Major Outyear Priorities and Assumptions

The outyear numbers for Weapons Activities do not reflect programmatic requirements. Rather, they are an extrapolation of the FY 2013 request based on rates of inflation in the Budget Control Act of 2011. The Administration will develop outyear funding levels based on actual programmatic requirements at a later date. Major Outyear Priorities and Assumptions will be delineated in that update.

Program Goals and Funding

The outyear numbers for Weapons Activities do not reflect programmatic requirements. Rather, they are an extrapolation of the FY 2013 request based on rates of inflation in the Budget Control Act of 2011. The Administration will develop outyear funding levels based on actual programmatic requirements at a later date. Program Goals and Funding will be delineated in that update.

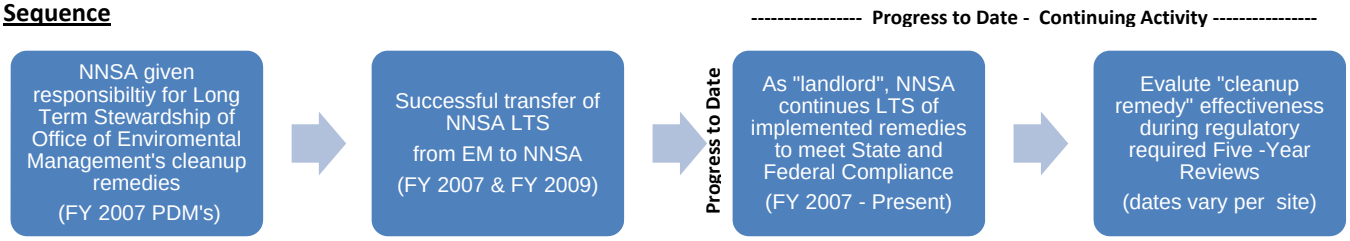
Explanation of Funding and/or Program Changes

	(Dollars in Thousands)		
	FY 2012 Enacted	FY 2013 Request	FY 2013 vs. FY 2012
Site Stewardship			
Operations and Maintenance			
· **Environmental Projects and Operations**	**45,191**	**46,978**	**+1,787**
The increase provides for costs associated with waste disposal to complete the regulatory required closure of Building 419 at Lawrence Livermore National Laboratory, as well as minor increases in compliance requirements at LLNL Site 300 and Pantex associated with respective Federal Facility Agreements.			
· **Energy Modernization and Investment Program**	**0**	**10,262**	**+10,262**
The increase provides funding for priority sustainability projects to improve energy and water efficiencies in existing buildings and deliver economic benefits. Funding also supports the installation of advanced utility meters at NNSA sites in support of statutory requirements.			
· **Nuclear Materials Integration**	**33,390**	**18,963**	**-14,427**
The decrease is due to completing the removal of security category I/II of special nuclear material from LLNL in FY 2012, slowing and extending the removal of transuranic waste from LLNL, and deferring stabilization, consolidation and disposition of nuclear materials at LANL, ORNL and Y-12.			
· **Corporate Project Management**	**0**	**13,798**	**+13,798**
The increase provides for direct funding of common project management resources and assets for the entire nuclear security enterprise.			
Total, Operations and Maintenance	**78,581**	**90,001**	**+11,420**
Construction	**0**	**0**	**0**
No activity.			
Total Funding Change, Site Stewardship	**78,581**	**90,001**	**+11,420**

Environmental Projects and Operations
Overview

The Environmental Projects and Operations (EPO) subprogram provides for the continuance of Long Term Stewardship (LTS) activities that are regulatory driven to reduce risks to human health and the environment at NNSA sites and adjacent areas through two mechanisms: (1) operating and maintaining environmental cleanup systems installed by the Office of Environmental Management as part of the Legacy Environmental Cleanup projects at NNSA sites; and (2) performing long term environmental monitoring activities and analyses in a cost-effective manner that assures compliance with federal, state, and local requirements. The EPO subprogram provides 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. LTS is required to meet environmental compliance associated with the ongoing operations of a site that has a Resource Conservation and Recovery Act Part B Operating Permit and/or is subject to the Comprehensive Environmental Response, Compensation, and Liability Act. LTS requirements are periodically updated consistent with regulatory updates and technological advances.

Sequence



Benefits

Maintaining a compliant environmental LTS program avoids being assessed state or federal fines and penalties associated with legal requirements.

Other Information

Regulatory Agreements - Comprehensive Environmental Response, Compensation, and Liability Act, Federal Facility Agreements for LLNL Livermore Site (November 1988), LLNL Site 300 (June 1992), and Pantex Site (December 2007), Resource Conservation and Recovery Act Consent Orders for SNL (2004) and KCP (1989).

Funding and Activity Schedule

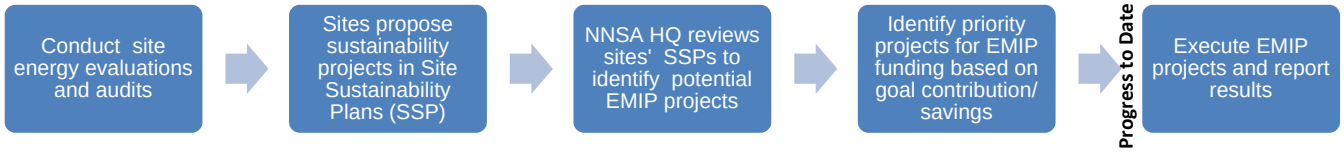
Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Continued LTS activities at five sites: Kansas City Plant, Lawrence Livermore National Laboratory (LLNL) Main Site, LLNL Site 300, Pantex Plant, and Sandia National Laboratories to maintain environmental compliance. • Demolished and removed all building materials (including low level waste) from Building 419 at LLNL, which is a mandated Resource Conservation and Recovery Act closure. • Supported LTS regulatory requirements by continuing to treat contaminated groundwater; 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. • Worked 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.	**41,970**

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• Responsible for continued LTS activities at five sites: Kansas City Plant, Lawrence Livermore National Laboratory (LLNL) Main Site, LLNL Site 300, Pantex Plant, and Sandia National Laboratories to maintain environmental compliance. • CERCLA Five-Year Reviews of selected cleanup remedies are scheduled for LLNL Main Site; and at the General Services Area Operable Unit (OU) 1 and Building 834 OU 2 at LLNL Site 300. • Perform characterization of slab and contaminated soil and initiate removal action to close Building 419 at LLNL, which is a Resource Conservation and Recovery Act requirement. • Support LTS regulatory requirements by continuing to treat contaminated groundwater; 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. • Work in concert with other Federal agencies, states, and affected stakeholders, execute LTS activities in a cost-effective, compliant, and safe manner consistent with end states that support the nuclear enterprise mission.	**45,191**
FY 2013	• Responsible for continued LTS activities at five sites: Kansas City Plant, Lawrence Livermore National Laboratory (LLNL) Main Site, LLNL Site 300, Pantex Plant, and Sandia National Laboratories to maintain environmental compliance. • CERCLA Five-Year Reviews of selected cleanup remedies are scheduled for the Pantex Site; and at Pit 6 OU 3, the High Explosive Process Area OU 4, and Multiple Buildings in OU 8 where the combined cleanup remedy is monitoring only or monitoring natural attenuation at LLNL Site 300. • Complete removal of slab and contaminated soil at Building 419 at LLNL, resulting in the completion of a required Resource Conservation and Recovery Act closure. • Support LTS regulatory requirements by continuing to treat contaminated groundwater; 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. • Work in concert with other Federal agencies, states, and affected stakeholders, execute LTS activities in a cost-effective, compliant, and safe manner consistent with end states that support the nuclear enterprise mission.	**46,978**
FY 2014-FY 2017	• Responsible for continued LTS activities at five sites: Kansas City Plant, Lawrence Livermore National Laboratory (LLNL) Main Site, LLNL Site 300, Pantex Plant, and Sandia National Laboratories. • CERCLA Five-Year Reviews of selected cleanup remedies are scheduled for the Pantex Site; and at Pit 6 OU 3, the High Explosive Process Area OU 4, and Multiple Buildings in OU 8 where the combined cleanup remedy is monitoring only or monitoring natural attenuation at LLNL Site 300. • Support LTS regulatory requirements by continuing to treat contaminated groundwater; 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.	**TBD**

Energy Modernization and Investment Program
Overview

The Energy Modernization and Investment Program (EMIP) implements specific sustainability and energy-savings projects across the nuclear security enterprise to improve energy and water efficiency of enduring assets, reduce greenhouse gas emissions, improve metering, and support High-Performance Sustainable Building (HPSB) compliance. The EMIP directly supports statutory requirements (Energy Policy Act of 2005 and Energy Independence and Security Act of 2007), Executive Orders (E.O. 13423 Strengthening Federal Environmental, Energy, and Transportation Management, and E.O. 13514, Federal Leadership in Environmental, Energy and Economic Performance), and DOE orders. The EMIP is a key component of NNSA's energy management strategy to promote sustainability and reduce energy usage and therefore costs, and complements other funding mechanisms.

Sequence



Benefits

- Promotes the sustainability of NNSA's enduring facilities and infrastructure.
- Reduces greenhouse gas (GHG) emissions, increases energy and water efficiency, improves metering, and supports High-Performance Sustainable Building (HPSB) compliance.
- Saves on energy usage and cost.

Other Information

DOE Strategic Sustainability Performance Plan (SSPP) - http://www1.eere.energy.gov/sustainability/pdfs/doe_sspp.pdf

Funding and Activity Schedule

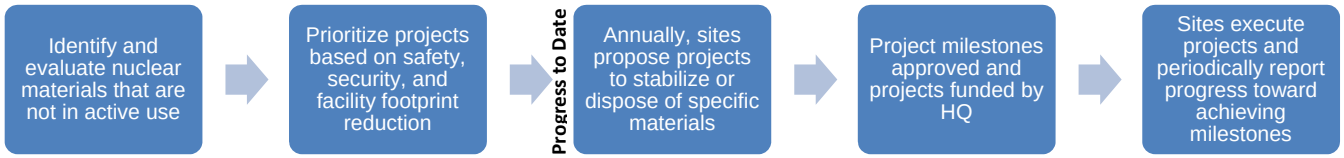
Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Funded and initiated execution of EMIP metering projects at NNSA sites in support of statutory metering requirements.	**6,618**
FY 2012	• No funds provided in FY 2012 – activities planned in FY 2012 will either be deferred or reprioritized in FY 2013.	**0**
FY 2013	• Funds priority energy efficiency/ conservation projects in support of statutory, E.O., DOE requirements, the Stockpile Stewardship Program mission, and ongoing modernization of the enterprise. Funding provides for the installation of advanced utility meters (in accordance with statutory requirements) and the installation of cost effective building upgrades for energy and water efficiency to enable the buildings to reach green standards (in support of NNSA's plans for 15% of its building inventory that exceeds 5,000 gsf to meet the Federal Guiding Principles standard by the end of 2015).	**10,262**
FY 2014-FY 2017	• Supports priority energy efficiency/ conservation projects that will reduce energy consumption enhance energy independence and security and provide life-cycle cost effective benefits. Projects that provide the most significant contribution towards achievement of NNSA's energy goals and result in cost savings will be selected from the EMIP Integrated Prioritized Project List (IPPL) for execution.	**TBD**

Nuclear Materials Integration
Overview

The Nuclear Materials Integration (NMI) subprogram provides focused attention on the consolidation and disposition of specific NNSA nuclear materials and on 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. It also maintains and operates the Nuclear Materials Management and Safeguards System (NMMSS) that is used to track and account for nuclear materials at DOE and the Nuclear Regulatory Commission (NRC) licensed sites.

By the end of 2012, special nuclear material (SNM) inventories at the Lawrence Livermore National Laboratory (LLNL) will have been reduced to below security category I/II quantities. The packaging and removal of transuranic (TRU) waste generated by the preparation of the LLNL materials, consistent with guidance from the Office of Environmental Management, for dispositioning at the Waste Isolation Pilot Program will be completed in FY 2016.

Sequence (Ongoing)



Benefits

Consolidation and disposition of excess nuclear material reduces security and safety risks, and reduces the cost of storage and site operations.

Funding and Activity Schedule

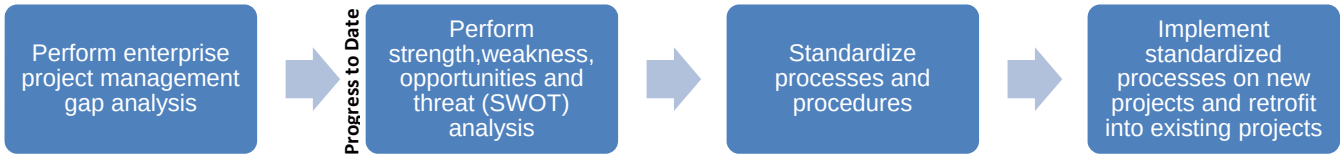
Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• The Nuclear Materials Integration effort to remove, by the end of 2012, security category I/II material from LLNL remains on schedule with approximately 90% of material packaged and prepared for removal from the LLNL site. • Completed the disposal of uranium-contaminated combustibles and pure thorium materials from the Y-12 National Security Complex, an Inactive Actinides responsibility. • Assumed operational authority for the Nuclear Materials Management and Safeguards System (NMMSS) from the Office of Health, Safety and Security. NMMSS, co-managed and funded with the Nuclear Regulatory Commission, is the national system for tracking and accounting for source and special nuclear material (SNM) that is domestically held; and used for tracking imports and exports of these materials to and from the U.S.	**41,169**
FY 2012	• Complete removal (de-inventory) of security category I/II SNM from LLNL. LLNL will retain security category III/IV amounts of SNM to support continuing national security missions. • Continue ongoing 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. • Continue ongoing treatment and disposition of NNSA materials currently stored at non-NNSA sites including the Idaho National Laboratory and Oak Ridge National	**33,390**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	Laboratory. • In partnership with the Nuclear Regulatory Commission, continue the support and operation of the Nuclear Materials Management and Safeguards System (NMMSS).	
FY 2013	• Continue ongoing 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. • Continue ongoing treatment and disposition of NNSA materials currently stored at non-NNSA sites including the Idaho National Laboratory and Oak Ridge National Laboratory. • In partnership with the Nuclear Regulatory Commission, continue the support and operation of NMMSS.	**18,963**
FY 2014-FY 2017	• Continue ongoing 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. • Continue ongoing treatment and disposition of NNSA materials currently stored at non-NNSA sites including the Idaho National Laboratory (sodium bonded debris) and Oak Ridge National Laboratory (excess Mark-42 targets). • Continue in partnership with the Nuclear Regulatory Commission the operation of NMMSS.	**TBD**

Corporate Project Management
Overview

This program provides centralized funding for corporate project management enterprise activities, specifically: Project Management Standardization; Acquisition Planning; Portfolio Management; Data Sharing/Industry Coordination; and Quality Assurance. NNSA project management practices will be enhanced through the unification of project management processes currently performed by the eight NNSA management and operating contractors into a single comprehensive and corporate program.

Sequence



Benefits

Corporate Project Management will provide focused management and reliable performance on critical NNSA projects/assets through standardization of NNSA project management processes. This effort will improve cost performance and eliminate management and control inefficiencies.

Other Information

- The Department of Energy Root Cause Analysis (RCA), Contract and Project Management, Corrective Action Plan (CAP) of July 2008, specifically corrective measure numbers 2, 6, 7 and 8.
- GAO Report to Congressional Committees, High-Risk Series, An Update of February, 2011 addresses the "Department of Energy's Contract Management for the National Nuclear Security Administration and Office of Environmental Management".
- National Research Council (NRC) Progress in Improving Project Management at the Department of Energy, 2003 Assessment.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Not applicable.	**0**
FY 2012	• Not applicable.	**0**
FY 2013	• Complex-wide Reforms; Reduction in fixed costs; Elimination of management and control inefficiencies; cost improvement initiatives. • Project Management Standardization to include but not limited to: Procurement documentation; execution processes and procedures; cost collection; work breakdown structure; standard project reporting requirements; configuration management; project reporting; EVMS; Policies and procedures. • Acquisition Planning; Portfolio Management; Data Sharing/Industry Coordination; Quality Assurance. • Any new start capital project in FY 2013 will be enveloped into this new execution strategy.	**13,798**
FY 2014-FY 2017	• Complex-wide Reforms; Reduction in fixed costs; Elimination of management and control inefficiencies; cost improvement initiatives. • Project Management Standardization to include but not limited to: Procurement documentation; execution processes and procedures; cost collection; work breakdown structure; standard project reporting requirements; configuration management; project reporting; EVMS; Policies and procedures.	**TBD**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	• Acquisition Planning; Portfolio Management; Data Sharing/Industry Coordination; Quality Assurance. • Any new start capital projects will be enveloped into this new execution strategy.	

Capital Operating Expenses Construction Summary
Capital Operating Expenses[a]

(dollars in thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Capital Operating Expenses			
General Plant Projects	250	256	262
Capital Equipment	1,860	1,901	1,943
Total, Capital Operating Expenses	**2,110**	**2,172**	**2,220**

Outyear Capital Operating Expenses

(dollars in thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request
Capital Operating Expenses				
General Plant Projects	268	274	280	286
Capital Equipment	1,986	2,030	2,075	2,121
Total, Capital Operating Expenses	**2,254**	**2,304**	**2,355**	**2,407**

[a] Funds are appropriated for Operations and Maintenance, which includes operating expenses, capital equipment and general plant projects. The program no longer budgets separately for capital equipment and general plant projects. Funding shown reflects estimates based on actual FY 2011 obligations.

Defense Nuclear Security
Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Defense Nuclear Security			
Operations and Maintenance (Homeland Security)			
Protective Forces	414,166	418,758	341,676
Physical Security Systems	73,794	82,783	98,267
Information Security	25,943	30,117	34,237
Personnel Security	30,913	37,285	37,781
Materials Control and Accountability	35,602	34,592	34,484
Program Management	78,183	75,595	96,840
Technology Deployment, Physical Security	7,225	4,797	0
Total, Operations and Maintenance (Homeland Security)	**665,826**	**683,927**	**643,285**
Construction (Homeland Security)	51,896	11,752	0
Total, Defense Nuclear Security	**717,722**	**695,679**	**643,285**

Out-Year Funding Profile by Subprogram and Activity

The outyear numbers for Weapons Activities do not reflect programmatic requirements. Rather, they are an extrapolation of the FY 2013 request based on rates of inflation in the Budget Control Act of 2011. The Administration will develop outyear funding levels based on actual programmatic requirements at a later date.

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
Consolidated Appropriations Act, 2012 (P.L. 112-74)
National Defense Authorization Act for FY 2012 (P.L. 112-81)

Overview

The Defense Nuclear Security (DNS) program provides protection from a full spectrum of threats, especially terrorism, for NNSA personnel, facilities, nuclear weapons, and information. DNS supports DOE Strategic goal #3: 'enhance nuclear security through defense, nonproliferation, and environmental efforts." This program is the NNSA's domestic physical security program that forms the foundation to ensure that NNSA has a security posture second-to-none. The Defense Nuclear Security program is a Homeland Security-related activity.

Program Accomplishments and Milestones

In the prior appropriation year, Defense Nuclear Security accomplished major efficiencies in managing our protective forces costs across the enterprise; continued to effectively manage risk while identifying cost efficiencies; continued to implement Security Reform; issued NNSA Policies for Physical Protection and Information Security; conducted Zero-Based Security reviews; improved the quality of the field security programming and budget structure; completed major upgrades to achieve compliance with Departmental security policy; formalized our collaboration with the Department of Defense (DoD) to ensure consistency in addressing enterprise nuclear concerns, facilitated collaborative risk-informed decisions within and between the Departments; invested in physical security systems and continued providing for control and accountability of special nuclear materials and other accountable nuclear materials.

Explanation of Changes

The Department's request of $643.3 million in Fiscal Year FY 2013 for the Defense Nuclear Security program is a net decrease of 7.5% from FY 2012. The FY 2013 decrease in Operating Expenses is 5.9% and the Line Item Construction reduction is 100% due to the projected completion of the Nuclear Materials Safeguards and Security Upgrades Project in FY 2013.

The FY 2013 request decreases the level for Protective Forces (-$77.1 million) and in Line Item Construction (-$11.7 million). This was due to a 5% overall reduction to Category I sites' Protective Forces as a result of modified threat and scenarios from collaboration with the DoD and UK. The request includes increases for Physical Security Systems ($15.5 million); Program Management ($21.2 million); and a net increase of $4.5 million for Information Security/Personnel Security/Materials Control & Accountability.

The 28% increase in the program management funding in FY 2013 reflects carefully managed staffing reductions and site operations due to the modified protection strategies. It will also centrally fund enterprise-wide initiatives and implement technologies that enable staffing reductions, and replace vital security systems that support of nuclear security operations.

Program Planning and Management

While the Defense Nuclear Security budget reflects an overall decrease from FY 2012 to FY 2013, the increases and decreases within specific categories have been made to meet the challenges of a revised protection strategy for the nuclear security enterprise. Sites with Category I special nuclear materials will downsize protective forces and undergo transition activities and LLNL will transition from a Category I to a Category III facility. The increase in Program Management reflects a rebalancing of protection program operations to carefully manage protective force staffing reductions described above, invest in and implement technologies that enable staffing reductions, and replace vital security systems that support nuclear security operations under a centrally-managed enterprise architecture.

Strategic Management

These external factors present the strongest impact to the overall achievement of the program's strategic goal:

- Nuclear security enterprise Protection Strategy modifications in response to Departmental Graded Security Protection policy revision.
- Collective Bargaining Agreement wage increases
- NNSA mission changes and facility modernization activities
- Aging Infrastructure and lifecycle upgrades

The Defense Nuclear Security program will continue to implement Security Reform in support of the NNSA vision for "a smaller, safer, more secure and less expensive enterprise"; while driving an integrated and effective security program throughout NNSA.

Major Outyear Priorities and Assumptions

The outyear numbers for Weapons Activities do not reflect programmatic requirements. Rather, they are an extrapolation of the FY 2013 request based on rates of inflation in the Budget Control Act of 2011. The Administration will develop outyear funding levels based on actual programmatic requirements at a later date. Major Outyear Priorities and Assumptions will be delineated in that update.

Program Goals and Funding

The outyear numbers for Weapons Activities do not reflect programmatic requirements. Rather, they are an extrapolation of the FY 2013 request based on rates of inflation in the Budget Control Act of 2011. The Administration will develop outyear funding levels based on actual programmatic requirements at a later date. Program Goals and Funding will be delineated in that update.

Full Cost Recovery Estimates

(Dollars in Thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Site			
Kansas City Plant	300	201	209
Lawrence Livermore National Laboratory	3,400	4,260	4,000
Los Alamos National Laboratory	3,939	3,100	3,200
Nevada National Security Site	1,929	1,987	0
Pantex Plant	165	0	0
Sandia National Laboratories	16,000	16,000	17,000
Y-12 National Security Complex	0	0	0
Total	**25,733**	**25,548**	**24,409**

This FY 2013 submission provides direct funding for mission base 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.

Explanation of Funding and/or Program Changes

	(Dollars in Thousands)		
	FY 2012 Enacted	FY 2013 Request	FY 2013 vs. FY 2012
Defense Nuclear Security			
Operations and Maintenance (Homeland Security)			
· **Protective Forces**	**418,758**	**341,676**	**-77,082**
This decrease reflects the transition of LLNL from a Category I to a Category III special nuclear materials site, and a 5% overall reduction to Protective Forces at Category I sites, as a result of Graded Security Protection reviews and collaborative inter-Departmental risk-based physical security policy reviews (Harmonization) with the DoD.			
· **Physical Security Systems**	**82,783**	**98,267**	**+15,484**
This increase is needed to fund initiatives identified in the Defense Nuclear Security's Physical Security Technology Management Plan for prioritized life-cycle replacement as well as installation of state-of-the-art access control, alarm detection and assessment, and other technologies needed to replace and modernize deteriorating physical security infrastructure that supports the NNSA national security mission. These upgrades are needed primarily at sites protecting nuclear weapons and Category I special nuclear materials. They will be executed as a series of capital equipment or General Plant Projects, and not as a single line item, as originally projected. While many of these projects are non-recurring and will be completed by the end of FY 2014, there are some life cycle items that will require replacement in FY 2015 and beyond. This increase also includes funds previously submitted under the category of Technology Deployments (below), as the functional work scope is more accurately characterized and managed under the category Physical Security Systems.			
· **Information Security**	**30,117**	**34,237**	**+4,120**
This increase reflects a re-pricing and validation of these activities consistent with the revised DNS Budget and Reporting (B&R) structure and revised DNS Costing Principles. The DNS Budget Validation process identified inconsistencies among the sites' reporting of activities within certain B&R categories. Costs for Information Security activities and personnel that were previously reported in other categories are now appropriately reflected in Information Security. For example, several sites charged FTE's for Group Leaders primarily responsible for Information Security, under Program Management. They are now reflected in Information Security.			

	(Dollars in Thousands)		
	FY 2012 Enacted	FY 2013 Request	FY 2013 vs. FY 2012
· **Personnel Security**	**37,285**	**37,781**	**+496**
This increase reflects a re-pricing and validation of these activities consistent with the revised DNS Budget and Reporting structure and revised DNS Costing Principles. The DNS Budget Validation process identified inconsistencies among the sites' reporting of activities within certain B&R categories. Costs for Personnel Security activities and personnel that were previously reported in other categories are now appropriately reflected in Personnel Security. For example, several sites charged FTE's for Group Leaders primarily responsible for Personnel Security, under Program Management. They are now reflected in Personnel Security.			
· **Materials Control and Accountability**	**34,592**	**34,484**	**-108**
The net decrease allows for essential levels to support materials consolidation, and revised processes and procedures for process and item monitoring to ensure more timely and accurate tracking of accountable nuclear materials (-$1,905,000) and is partially offset by the transfer of the Local Area Network Material Accountability System (LANMAS) system from DOE's Office of Health, Safety and Security (HSS) to NNSA (+$912,000).			
· **Program Management**	**75,595**	**96,840**	**+21,245**
The increase is needed to corporately manage the downsizing and transition activities at the Category I sites as they modify their protection strategies to meet the Department's revised protection policy. It will also centrally fund enterprise-wide initiatives and projects such as barrier enhancements and weapon systems upgrades at Pantex, Argus implementation, and 2) support for the DNS Field Augmentation Cadre, special independent studies and technical support for risk-based security projects and reviews. These support activities are critical for continuing to identify enterprise-wide efficiencies in field security operations.			
· **Technology, Deployment, Physical Security**	**4,797**	**0**	**-4,797**
This decrease is due to the transfer of Technology Deployment funding into the Physical Security Systems beginning in FY 2013, which is a more accurate characterization of the functional work scope. The projects will be identified in the prioritized list contained in the Physical Security Technology Management Plan.			

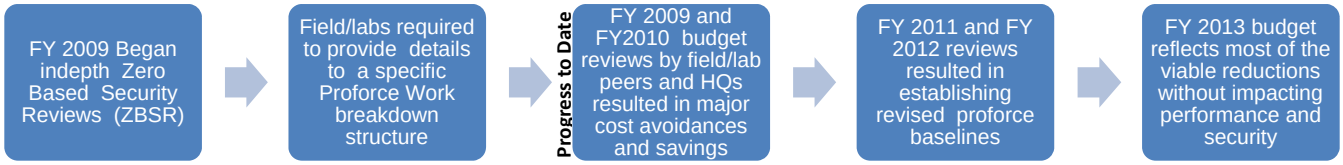
	(Dollars in Thousands)		
	FY 2012 Enacted	FY 2013 Request	FY 2013 vs. FY 2012
Construction	**11,752**	**0**	**-11,752**
The last request for line-item funding for 08-D-701, Nuclear Materials Safeguards and Security Upgrades Project, NMSSUP II, at Los Alamos National Laboratory, occurred in FY 2012. Construction is projected to be completed in the second quarter of FY 2013.			
Total Funding Change, Defense Nuclear Security	**695,679**	**643,285**	**-52,394**

Protective Forces (Homeland Security)
Overview

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 facility Master Security Plan detailing protection measures and resources needed to safeguard site security interests.

Funding requested for Protective Forces provides for specialized training and sustains protective forces hired in support of the 2003 Design Basis Threat (DBT) and implementation of the 2008 Graded Security Protection (GSP) policy. 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 and practiced in various tactics and procedures to protect site interests.

Sequence



Benefits

- Serves as the site's primary front-line protection capability.
- Provides an integral part of a site's security posture, trained and practiced in various defensive tactics and procedures to protect site interests.
- Provides daily site protection, alarm assessment and response, special contingency response capabilities, and access control functions.

Funding and Activity Schedule

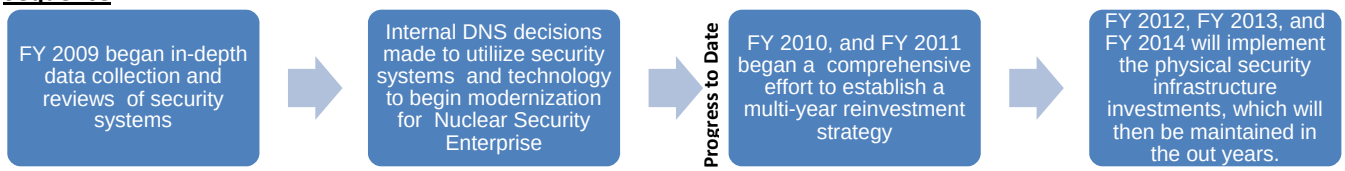
Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Provided for specialized training and sustained protective forces hired in support of the 2003 DBT. Began planning activities for implementation of the 2008 GSP policy and Tactical Response Force policy.	**414,166**
FY 2012	• Sites maintain sufficient protective forces required to meet Departmental protection standards and site protection. • Forces function as first responders and are trained to manage chemical and biological events. • Forces provide special contingency response capabilities.	**418,758**
FY 2013	• Overall 5% reduction in protection resources at Category 1 sites following Zero Based Security Reviews. • Accelerate LLNL post-de-inventory protective force reductions. • Through the acceptance of additional risk, sites will be able to maintain a capable Protective Force as an essential element that is integral to maintaining an effective and efficient security protective force program.	**341,676**

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2014-FY 2017	• In the out years, escalations in labor rates negotiated and codified in Collective Bargaining Agreements between the site security contractors and guard unions, will require modest increases to the protective forces budgets in order to maintain the same level of protection against the threat as documented in the Graded Security Protection policy and meet all order requirements.	**TBD**

Physical Security Systems (Homeland Security)
Overview

Physical Security Systems provide intrusion detection and assessment capabilities, access controls, and performance testing, deployment of viable new technologies, and maintenance of security systems according to the approved site security plans.

Sequence



Benefits

- Ensures that site security alarms, barriers and locks, including but not limited to: protection of nuclear weapons components; special nuclear materials; classified information or matter; radiological, chemical, and biological sabotage protection; security areas; alarm management and control systems; access controls and entry/exit inspections, barriers; locks and keys; secure storage; communications; and maintenance are available with state-of-the-art technology to protect critical NNSA facilities throughout the nuclear security enterprise.
- Improves the security posture of NNSA with promising and emerging technologies for deployment and implementation at NNSA sites, to provide operational efficiencies for NNSA's Safeguards and Security Program.
- Ensures that installation of state-of-the-art access control, alarm detection and assessment, and other Safeguards and Security technologies that will result in a better integrated and effective enterprise for protection of critical nuclear facilities.

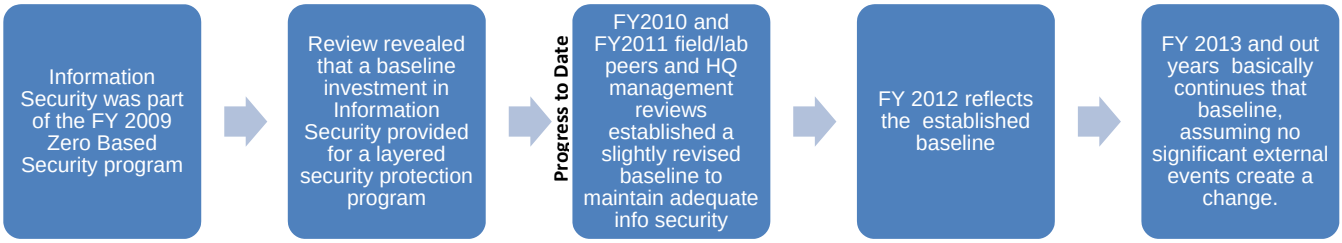
Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Provides intrusion detection and assessment capabilities, access controls, and performance testing and maintenance of security systems according to the approved site performance testing plan.	**73,794**
FY 2012	• Supports a multi-year modernization reinvestment strategy, guided by the Congressionally mandated Physical Security Technology Management Plan (PSTMP). This strategy funds life-cycle replacement initiatives that have been validated and prioritized, as well as installation of state-of-the-art access control, alarm detection and assessment, and other technologies needed to support the NNSA national security mission.	**82,783**
FY 2013	• Supports a multi-year modernization reinvestment strategy, guided by the Congressionally mandated Physical Security Technology Management Plan (PSTMP). This strategy will continue to fund life-cycle replacement initiatives as well as installation of state-of-the-art access control, alarm detection and assessment, and other technologies needed to support the NNSA national security mission.	**98,267**
FY 2014-FY 2017	• Maintains a modernized physical security systems infrastructure sufficient to meet all order requirements and protect against the threat as documented in the Graded Security Protection policy.	**TBD**

Information Security (Homeland Security)
Overview

The Information Security element of the budget includes program management and administration, and maintenance costs associated with: protection and control, planning, training, administrative requirements for maintaining security containers and combination, marking, control systems, operations security, special access programs, technical surveillance countermeasures (TSCM), and classification and declassification.

Sequence



Benefits

- Classification and declassification of information prevents the dissemination of critical national security information that could cause great harm to our national security posture.
- Ensures protection and control, planning, training, and administrative requirements for maintaining security containers and combinations, markings, control systems are available to support all of the nuclear security enterprise in a cost effective and efficient manner.
- Ensures a layer of protection for special access programs; operations security and for enterprise-wide TSCM activities.

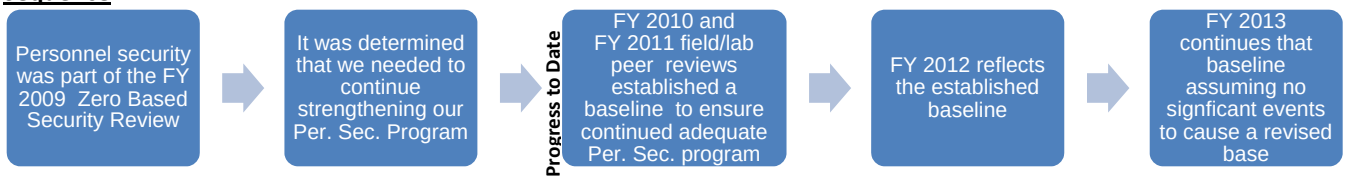
Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Supported management of a robust information protection program including an enterprise-wide Classified and Controlled Information Program.	**25,943**
FY 2012	• Sustains management and administration of a robust information protection program including reviews and controls at Headquarters and field sites of classified and sensitive information, to ensure proper document marking, storage and protection of information. Provides for development and implementation of an enterprise-wide TSCM program.	**30,117**
FY 2013	• FY 2013 efforts include program management and administration and maintenance costs associated with multiple areas such as protection and control planning, training, security containers and combinations, marking, control systems, operations security, special access program, management of an enterprise-wide TSCM program, and classification and declassification. As a result of the DNS Budget Validation Process, also reflects re-categorization of activities in Information Security that had previously been reflected in other categories.	**34,237**
FY 2014-FY 2017	• Maintains a robust information protection program in the out years.	**TBD**

Personnel Security (Homeland Security)
Overview

This program 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.

Sequence



Benefits

- Serves as a major deterrent to persons seeking access for other than legitimate reasons to critical nuclear security enterprise facilities. Provides the processes for administrative determination that an individual is eligible for access to classified matter, or is eligible for access to, or control over, special nuclear materials or nuclear weapons
- Ensures that NNSA's most highly classified data and facilities are not harmed by individuals seeking access for other than legitimate need-to-know reasons. Provides for the Human Reliability Program, Control of Classified Visits, Security Awareness Programs and processing of unclassified visits and assignments by foreign nationals.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Provided for the Human Reliability Program, control of classified visits, security awareness programs, and processing of unclassified visits and assignments by foreign nationals, etc.	**30,913**
FY 2012	• Continues the Human Reliability Program, control of classified visits, security awareness programs, and processing of unclassified visits and assignments by foreign nationals. Personnel Security activities that had previously been captured in other security categories have been appropriately accounted for in Personnel Security as a result of the DNS Budget Validation activities.	**37,285**
FY 2013	• Maintains a robust personnel security program.	**37,781**
FY 2014-FY 2017	• Maintains a robust personnel security program.	**TBD**

Materials Control and Accountability (Homeland Security)
Overview

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 Network Material Accountability System (LANMAS) software application as well as training and operational support provided to DOE and NNSA sites and facilities to use as the core of their nuclear accountability systems. The LANMAS software is used by 16 DOE sites, 8 of which are NNSA sites.

Sequence

Benefits

- Control and accountability of special and alternate nuclear materials, nuclear weapons test devices, and weapons components and parts.
- Continuous accountability of special and alternate nuclear materials.
- Coverage of material balance areas, surveillance, containment, detection, assessment, testing, transfers, verifications and measurements, reconciliation, and statistical analysis related to MC&A requirements.

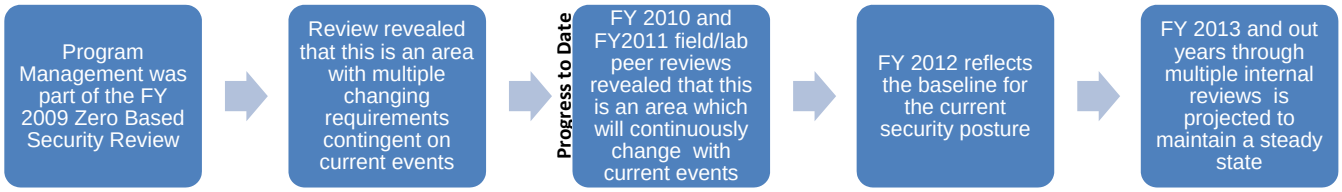
Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Provided for tracking movements of accountable nuclear materials between sites and reporting those movements to a national level tracking system. • Provided for assessment, testing, transfers, verifications and measurements, reconciliation and statistical analyses related to MC&A requirements.	**35,602**
FY 2012	• Continues support for tracking movements of accountable nuclear materials between sites and reporting those movements to a national level tracking system. • Continues support for assessment, testing, transfers, verifications and measurements, reconciliation and statistical analyses related to MC&A requirements. • Reflected the functional transfer of the management and operations of the Local Area Network Material Accountability System from DOE's Office of Health, Safety and Security to NNSA.	**34,592**
FY 2013	• Provides for control and accountability of special and alternate nuclear materials. Basically maintains a level of effort that will sustain a critical part of NNSA's layered protection program.	**34,484**
FY 2014-FY 2017	• Since the shelf life of many of the special nuclear materials is over millions of years, this program must be maintained to ensure that our national security posture is never in jeopardy due to the loss of special nuclear materials from lack of control and accountability.	**TBD**

Program Management (Homeland Security)
Overview

Program Management 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.

Sequence



Benefits

- Serves as a pivotal point to a cost effective and efficient nuclear security enterprise. Program Management includes but is not limited to direction, oversight and administration, planning, training, and development for security programs
- Drives efficiencies and consistency throughout the nuclear security enterprise with establishment of Site Safeguards and Security Plans; Vulnerability Analysis; Performance Testing and Assurance activities; Security Incident and Reporting Management; surveys and self-assessments and activities related to deviation requests.
- Control of Security Technology Transfer; facility clearance and foreign ownership, as well as Foreign Ownership, Control or Influence (FOCI) prevents potential adversaries from receiving classified information that could cause long-term harm to our national security posture.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Provided for the assessment of security implementation efforts through the review of updated security plans and performance testing, review of vulnerability assessments, and revised threat and vulnerability analysis. To formalize the process, a detailed Program Management Plan, including annual performance goals and baselines for each site's security program, is in place.	**78,183**
FY 2012	• Continues assessment of security program implementation through review of Annual Operating Plans, Site Safeguards and Security Plans, Surveys and Self-Assessments, and Security Incident and Reporting Management.	**75,595**
FY 2013	• Provides for management of security program operations at Category I sites as they undergo downsizing and transition activities associated with the Department's revised protection policy. • Supports the DNS Field Augmentation Cadre, special independent studies and technical support. • Centrally funds enterprise-wide initiatives and projects such as Argus implementation, HSPD-12, Protective Force equipment standardization, and additional collaborative inter-Departmental risk based security projects and reviews as part of the Harmonization initiative.	**96,840**

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2014-FY 2017	• Maintains a robust Program Planning and Management 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 Harmonization initiative.	**TBD**

Technology, Deployment, Physical Security (Homeland Security)
Overview

This separate funding designator has been discontinued due to its functional overlap with the Physical Security Systems program in FY 2013. We have included activities for this subprogram in our Physical Security Systems section.

Sequence

Not applicable.

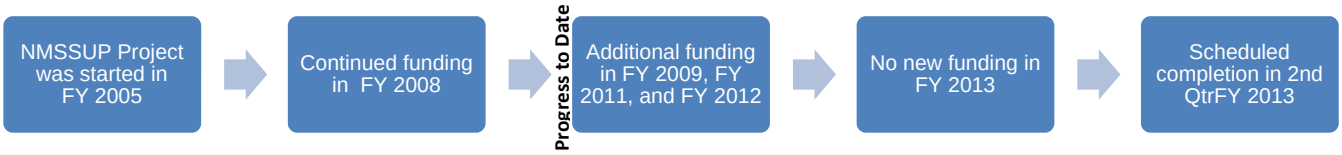
Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Provided for the deployment of security technologies to address short- and long-term solutions to physical security needs at NNSA sites.	**7,225**
FY 2012	• Ensured focus on promising, emerging technologies that will provide operational efficiencies for the NNSA security program.	**4,797**
FY 2013	• See FY 2013 Physical Security Systems program for details.	**0**
FY 2014-FY 2017	• See FY 2014-2017 Physical Security Systems program for details.	**TBD**

Construction (Homeland Security)
Overview

The Construction program includes the cost of new and ongoing line-item construction projects that support the safeguards and security mission within the nuclear security enterprise.

Sequence



Benefits

Completes a new, state-of-the-art perimeter intrusion detection and assessment system at LANL's primary special nuclear materials facility.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Completed work on Utility Building, Storm Water Management, and South PIDAS Civil Work subprojects. Construction continues on the North PIDADS, West Vehicle Access and Utility Trunk Subprojects. Started construction on Entry Control Facility subproject.	**51,896**
FY 2012	• Construction to complete all in-process subprojects (North PIDADS, Utility Trunk, West Vehicle Access, and Entry Control Facility). South PIDAS Security Installation Subproject to be initiated and completed in FY 2012. Also starting the security systems activation and cut-over activities.	**11,752**
FY 2013	• No new projects	**0**
FY 2014-FY 2017	• No new projects	**TBD**

Capital Operating Expenses and Construction Summary
Capital Operating Expenses[a]

(dollars in thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Capital Operating Expenses			
General Plant Projects	22,842	23,345	23,859
Capital Equipment	7,699	7,868	8,041
Total, Capital Operating Expenses	**30,541**	**31,213**	**31,900**

Outyear Capital Operating Expenses

(dollars in thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request
Capital Operating Expenses				
General Plant Projects	24,384	24,920	25,468	26,028
Capital Equipment	8,218	8,399	8,584	8,773
Total, Capital Operating Expenses	**32,602**	**33,319**	**34,052**	**34,801**

Construction Projects

(dollars in thousands)

	Total Estimated Cost (TEC)	Prior Year Appro-priations	FY 2011 Current	FY 2012 Enacted	FY 2013 Request	Unappropriated Balance
08-D-701, NMSSUP II, LANL	191,412	127,764	51,896	11,752	0	0
Total, Construction			**51,896**	**11,752**	**0**	

[a] Funds are appropriated for Operations and Maintenance, which includes operating expenses, capital equipment and general plant projects. The program no longer budgets separately for capital equipment and general plant projects. Funding shown reflects estimates based on actual FY 2011 obligations.

Cyber Security
Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Cyber Security (Homeland Security)			
Infrastructure Program	97,735	107,374	0
Enterprise Secure Computing	21,500	14,000	0
Technology Application Development	4,996	4,996	0
Total, Cyber Security	**124,231**	**126,370**	**0**

Out-Year Funding Profile by Subprogram and Activity

The outyear numbers for Weapons Activities do not reflect programmatic requirements. Rather, they are an extrapolation of the FY 2013 request based on rates of inflation in the Budget Control Act of 2011. The Administration will develop outyear funding levels based on actual programmatic requirements at a later date.

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
Consolidated Appropriations Act, 2012 (P.L. 112-74)
National Defense Authorization Act for FY 2012 (P.L. 112-81)

Overview

In FY 2013, the existing Cyber Security Government Performance Results Act (GPRA) unit will be deleted and activities managed by the NNSA OCIO will be consolidated under the new single GPRA Unit titled NNSA CIO Activities. The goal of the National Nuclear Security Administration (NNSA) Cyber Security program is to ensure that sufficient information management security safeguards are implemented throughout the nuclear security enterprise to adequately protect the NNSA information assets and to provide the requisite guidance in compliance with the Department of Energy's (DOE) Defense-in-Depth Cyber Security strategy and the NNSA Information Management Strategic Plan. The Cyber Security program is a Homeland Security related activity.

Program Accomplishments and Milestones

In the prior appropriation year, the NNSA Office of the Chief Information Officer (OCIO) achieved the following three significant accomplishments or milestones in program management and program development: 1) A focus on a mission based risk management approach; 2) Development and implementation of the Cyber Security Strategic Plan; 3) Development and implementation of the Cyber Security Architecture.

Explanation of Changes

In FY 2013, the existing Cyber Security Government Performance Results Act (GPRA) unit will be deleted and activities managed by the NNSA OCIO will be consolidated under the new single GPRA Unit titled NNSA CIO Activities.

The FY 2011 request focused on moving the cyber security program incident management element across the site into a comprehensive enterprise level arrangement between NNSA Headquarters and Sites. The program collected needs on a site-by-site basis over the budget year to inform the formulation of the next budget year.

Strategic Management

A consolidation of the Cyber security and the IT programs will be more effective. Cyber Initiatives are supported by IT Investments and this change will provide better alignment of resources to focus on the emerging threat. The OCIO will implement a focused program which includes technology enhancement, incident management, risk management and operational controls to reduce the current threats and vulnerabilities to the information and information systems.

Explanation of Funding and/or Program Changes

	(Dollars in Thousands)		
	FY 2012 Enacted	FY 2013 Request	FY 2013 vs. FY 2012
Cyber Security (Homeland Security)			
· **Infrastructure Program**	**107,374**	**0**	**-107,374**
This funding has been moved to NNSA CIO Activities.			
· **Enterprise Secure Computing**	**14,000**	**0**	**-14,000**
This funding has been moved to NNSA CIO Activities.			
· **Technology Application Development**	**4,996**	**0**	**-4,996**
This funding has been moved to NNSA CIO Activities.			
Total Funding Change, Cyber Security	**126,370**	**0**	**-126,370**

Infrastructure Program (Homeland Security)
Overview

The infrastructure program supported the cyber security operations and activities at NNSA Management and Operating (M&O) sites. The cyber security operations and infrastructure program was built around a defense-in-depth approach for achieving cyber security in a highly networked environment. The defense-in-depth approach was a combination of known best practices and cost strategy that relies on the intelligent application of techniques that exist today. The defense-in-depth approach consisted of three major components: people, processes and technology. This approach recommends a balance between the protection capability and cost, performance, and operational considerations. The implementation of this approach enabled maintenance of a cyber security posture that complied with all DOE and NNSA policies and processes, while addressing the increasing number and complexity of cyber security threats, vulnerabilities and risks.

Sequence

Other Information

- E-Government Act of 2002 (P.L. 107-347, 44 U.S.C. Ch 36)
- P.L. 106-65, "National Defense Authorization Act [Section 3212(d)], enacted October 1999
- P.L. 107 347, Title III, Federal Information Security Management Act of 2002 (FISMA), enacted December 2002
- Paperwork Reduction Act (P.L. 104-13, 44 U.S.C. 3501 et seq)
- Privacy Act, P.L 93-579, 5 U.S.C. 552a
- Freedom of Information Act, P.L. 89-487, 5 U.S.C. 552
- OMB Circular Number A-130, Management of Federal Information Resources

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Focused on a mission based risk management approach. • Developed and implemented the Cyber Security Strategic Plan. • Developed and implemented the Cyber Security Architecture	**97,735**
FY 2012	• Federal Virtual Desktop Pilot will begin December 31, 2011. • Federal Virtual Desktop Phase I Implementation will be complete on March 31, 2012. • Consolidated Records Management Program will begin July 1, 2012. • Fully implement Federal Cloud on August 31, 2012.	**107,374**
FY 2013	• This funding has moved to the NNSA CIO Activities.	**0**
FY 2014-FY 2017	• This funding has moved to the NNSA CIO Activities.	**TBD**

Enterprise Secure Computing (Homeland Security)
Overview

Enterprise Secure Computing provided state-of-the-art enterprise level classified computing infrastructure that enables effective collaboration and information sharing necessary for the NNSA Enterprise.

Sequence

Other Information

- E-Government Act of 2002 (P.L. 107-347, 44 U.S.C. Ch 36)
- P.L. 106-65, "National Defense Authorization Act [Section 3212(d)], enacted October 1999
- P.L. 107 347, Title III, Federal Information Security Management Act of 2002 (FISMA), enacted December 2002
- Paperwork Reduction Act (P.L. 104-13, 44 U.S.C. 3501 et seq)
- Privacy Act, P.L 93-579, 5 U.S.C. 552a
- Freedom of Information Act, P.L. 89-487, 5 U.S.C. 552

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Focused on daily operations, infrastructure enhancements and application deployment. • Continued development of the small site solution to provide a cost effective connectivity for M&O and Federal sites. This will provide a strategic opportunity to extend ESN beyond the NNSA and provide for more efficient communications with our external partners. • Improved Identity and Access Management capabilities with the inclusion of newly acquired Oracle Products. These products will enhance our capabilities by adding work flow and other automation enhancements to our user management process. • Replacement of the Security Event and Incident Management (SEIM) Tool will give NNSA the ability to improve its defensive posture and gain greater efficiencies with respect to correlating and identifying the increasing number of threats against the NNSA.	**21,500**
FY 2012	• Focus on daily operations, infrastructure enhancements and application deployment. • Continue development of the small site solution to provide a cost effective connectivity for M&O and Federal sites. This will provide a strategic opportunity to extend ESN beyond the NNSA and provide for more efficient communications with our external partners. • Improve Identity and Access Management capabilities with the inclusion of newly acquired Oracle Products. These products will enhance our capabilities by adding work flow and other automation enhancements to our user management process. • Replacement of the Security Event and Incident Management (SEIM) Tool will give NNSA the ability to improve its defensive posture and gain greater efficiencies with respect to correlating and identifying the increasing number of threats against the NNSA.	**14,000**
FY 2013	• This funding has moved to the NNSA CIO Activities.	**0**
FY 2014-FY 2017	• This funding has moved to the NNSA CIO Activities.	**TBD**

Technology Application Development (Homeland Security)
Overview

Technology Application Development was responsible for developing and advancing policies and initiatives that supported short and long-term solutions to specific cyber security needs at the NNSA sites and Headquarters locations. Technological innovation, research and development are critical components for NNSA to protect its assets in national and global technology driven environments. The research and technology development efforts focused on emerging technologies and leverage existing technology resources to create a more secure environment.

Sequence

Other Information

- OMB 25 point Cyber security plan
- E-Government Act of 2002 (P.L. 107-347, 44 U.S.C. Ch 36)
- P.L. 106-65, "National Defense Authorization Act [Section 3212(d)], enacted October 1999
- P.L. 107 347, Title III, Federal Information Security Management Act of 2002 (FISMA), enacted December 2002

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Focused on the enhancement of cyber security capabilities in the areas of incident management and disk encryptions. • Implemented risk mitigation processes to provide for improvement in the cyber security architecture. Actions will be taken to ensure these improvements are made which will include strengthening NNSA cyber security architecture for NNSA Headquarters and sites. • Employed a layered defense-in-depth cyber security model across the NNSA enterprise that will ensure integrated and layered protections are implemented consistently across NNSA computing environments	**4,996**
FY 2012	• Continue to focus on the enhancement of cyber security capabilities in the areas of incident management and disk encryptions. • Continue to implement risk mitigation processes to provide for improvement in the cyber security architecture. Actions will be taken to ensure these improvements are made which will include strengthening NNSA cyber security architecture for NNSA Headquarters and sites. • Baseline the cyber security controls for confidentiality, integrity, and availability and will incorporate the certification and accreditation process into the cyber security architecture life-cycle model. • Continue to employ a layered defense-in-depth cyber security model across the NNSA enterprise that will ensure integrated and layered protections are implemented consistently across NNSA computing environments.	**4,996**
FY 2013	• This funding has moved to the NNSA CIO Activities.	**0**
FY 2014-FY 2017	• This funding has moved to the NNSA CIO Activities.	**TBD**

Capital Operating Expenses and Construction Summary
Capital Operating Expenses[a]

(dollars in thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Capital Operating Expenses			
General Plant Projects	0	0	0
Capital Equipment	0	0	0
Total, Capital Operating Expenses	**0**	**0**	**0**

[a] Funds are appropriated for Operations and Maintenance, which includes operating expenses, capital equipment and general plant projects. The program no longer budgets separately for capital equipment and general plant projects. Funding shown reflects estimates based on actual FY 2011 obligations.

NNSA CIO Activities
Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
NNSA CIO Activities			
Cyber Security (Homeland Security)			
Infrastructure Program	0	0	111,022
Technology Application Development [a]	0	0	0
Enterprise Secure Computing (Homeland Security)	0	0	14,000
Federal Unclassified Information Technology	0	0	30,000
Total, NNSA CIO Activities	**0**	**0**	**155,022**

Out-Year Funding Profile by Subprogram and Activity

The outyear numbers for Weapons Activities do not reflect programmatic requirements. Rather, they are an extrapolation of the FY 2013 request based on rates of inflation in the Budget Control Act of 2011. The Administration will develop outyear funding levels based on actual programmatic requirements at a later date.

[a] In FY 2011 and FY 2012 Technology Application Development is reflected in the Cyber Security program. In FY 2013 funds supporting Technology Application Development were realigned to infrastructure for higher priority requirements. Technology Application initiatives are to be supported in the outyears.

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
Consolidated Appropriations Act, 2012 (P.L. 112-74)
National Defense Authorization Act for FY 2012 (P.L. 112-81)

Overview

The NNSA Office of the Chief Information Officer (NCIO) supports the diverse civilian nuclear security enterprise of the U.S. Department of Energy/National Nuclear Security Administration. The NCIO leads Federal efforts to research and develop information technology and cyber security solutions, including continuous monitoring, enterprise wireless and security technologies (such as: identity, credential, and access management) to help meet energy security, proliferation resistance, and climate goals. NCIO supports DOE Strategic goal #3: "enhance nuclear security through defense, nonproliferation, and environmental efforts." The 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, which establishes the goals and milestones necessary to achieve the NNSA Administration's "OneNNSA" vision.

The NNSA CIO Activities 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, 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 NNSA CIO Activities 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 NNSA CIO Activities Program.

Program Accomplishments and Milestones

In the prior appropriation year, NCIO achieved significant accomplishment or milestones in program management and/or program development which are seen in the former Cyber Security Program GPRA unit section in the budget. Such accomplishments included: 1) the development of an enterprise risk management framework; 2) development of Cyber Security Policy aligned with national policy and standards; and 3) consolidation of the information technology and cyber security program under one management structure.

Milestone	Date
Fully Implement Federal Cloud	December 31, 2012

Program Goals

- Develop and Implement Federal Cloud
- Develop the Laboratories/Plants Cloud Architecture
- Develop and implement the Joint Cyber Security Coordination Center (JC3)

To meet the stated program goals it is the assumption of the NCIO that funding will be provided to develop and implement these activities enterprise-wide. Secondly all program goals will have stated milestones which must be met and approved by the CIO or his/her representative, before next steps can be taken.

Explanation of Changes

The Office of the Chief Information Officer requests $155 million in Fiscal Year 2013 for the NCIO, a 2 percent increase from the comparable current FY 2012 appropriation levels. The budget request includes $111 million for cyber security activities and $14 million for Enterprise Secure Computing. Funding for Technology Application Development was transferred to higher priority activities within the infrastructure program in FY 2013 only. The request also includes $25.0 million which was formerly under the Office of the Administrator for unclassified Federal information technology and reflects a $5 million, the majority of which is for records management activities and the remainder reflects general cost growth of doing business. In the past, NNSA had been offsetting such increases by using prior year balances, but those balances have now been exhausted.

Program Planning and Management

The cyber security program outlines the processes and procedures to protect the infrastructure that supports the OneNNSA. The goal is to prevent the implementation of malicious code and attacks through quick response and advanced detection capabilities. The NCIO will ensure that the computing infrastructures are protected by; identifying and securing the information technology assets themselves, build a hard-nosed culture of security, application security and developing acute situational awareness.

Strategic Management

Cyber Initiatives are supported by IT Investments therefore consolidating the IT and Cyber program will provide better alignment of resources to focus on the emerging threat. In meeting the identified challenges to NNSA, the NCIO will implement the Information Management Strategic Plan which provides a roadmap for the future of NNSA IT investments within the context of the broader NNSA Network Vision (2NV).

The NNSA Associate Administrator for Information Management and Chief Information Officer has the responsibility to manage assured information collaboratively within the Nuclear Security Enterprise (NSE) as a key enabler and transformational agent to ensure program, operational and business excellence in the accomplishment of the NNSA mission in a safe, secure, and efficient manner.

To achieve the "OneNNSA" vision, the NNSA Office of Information Management (NA-IM) has developed five strategic goals to accomplish within the next five years using light technologies and best practices to provide enterprise wide services in a cost effective and efficient manner:

1. Collapse and Consolidate Networks, Applications, and Services into Virtualized Environments
2. Build the Next Generation Mobile Infrastructure
3. Leverage Cloud Computing to Enable a Low-Cost Shared Services Model
4. Establish Risk-Based Governance
5. Improve Business Processes

Three external factors present the strongest impact to the overall achievement of the programs strategic goal:

- OMB 25 point Cyber security plan
- NNSA Cyber Security Implementation Policy for Risk Management and Program Oversight
- DOE Risk Management Framework

Major Outyear Priorities and Assumptions

The outyear numbers for Weapons Activities do not reflect programmatic requirements. Rather, they are an extrapolation of the FY 2013 request based on rates of inflation in the Budget Control Act of 2011. The Administration will develop outyear funding levels based on actual programmatic requirements at a later date. Major Outyear Priorities and Assumptions will be delineated in that update.

Program Goals and Funding

The outyear numbers for Weapons Activities do not reflect programmatic requirements. Rather, they are an extrapolation of the FY 2013 request based on rates of inflation in the Budget Control Act of 2011. The Administration will develop outyear funding levels based on actual programmatic requirements at a later date. Program Goals and Funding will be delineated in that update.

Explanation of Funding and/or Program Changes

	(Dollars in Thousands)		
	FY 2012 Enacted	FY 2013 Request	FY 2013 vs. FY 2012
NNSA CIO Activities			
Cyber Security (Homeland Security)			
· **Infrastructure Program**	**0**	**111,022**	**+111,022**
The increase reflects funding transferred from Cyber Security. The actual increase in funding reflects the transfer of funds from Enterprise Secure Computing to align infrastructure requirements for ESN to the Infrastructure Program.			
· **Technology Application Development**	**0**	**0**	**0**
Funding for Technology Application Development was transferred to higher priority activities within the program in FY 2013 only.			
Enterprise Secure Computing	**0**	**14,000**	**+14,000**
The increase reflects funding transferred from Cyber Security. This is the funding level for the operational requirement of ESN.			
Federal Unclassified Information Technology	**0**	**30,000**	**+30,000**
The increase reflects $25 million in funding transferred from the Office of the Administrator appropriation and an increase of $5 million. Of the $5 million, the majority is for records management activities and the remainder reflects general cost growth of doing business. In the past, NNSA had been offsetting such increases by using prior year balances, but those balances have now been exhausted.			
Total Funding Change, NNSA CIO Activities	**0**	**155,022**	**+155,022**

Cyber Security (Homeland Security)
Infrastructure Program and Technology Application
Overview

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. Leaders must recognize that 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 cyber security operations and activities at NNSA M&O sites. The cyber security operations and infrastructure program is built around a defense-in-depth approach for achieving cyber security 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 addresses the increasing number and complexity of cyber security threats, vulnerabilities and risks.

- **Technology Application Development -** Funding was transferred to higher priorities within NNSA CIO Activities but Technology Application activities are planned in the outyears. Technology Application Development is responsible for developing and advancing policies and initiatives that will support short and long-term solutions to specific cyber security 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.

Sequence

Benefits

- Ensures that information security considerations are integrated into the enterprise architecture and business processes of the organization. The full integration of management processes organization-wide will reduce risk – providing greater degrees of security, privacy, reliability, and cost effectiveness for core missions and business functions.

- The capabilities inherent in enterprise risk management help management achieve enterprise targets and improve resource deployment. Enterprise risk management helps ensure effective reporting and compliance with laws and regulations, and helps avoid damage to the mission, performance, reputation, and associated consequences.

Other Information

- E-Government Act of 2002 (P.L. 107-347, 44 U.S.C. Ch 36)
- P.L. 106-65, "National Defense Authorization Act [Section 3212(d)], enacted October 1999
- P.L. 107 347, Title III, Federal Information Security Management Act of 2002 (FISMA), enacted December 2002
- Paperwork Reduction Act (P.L. 104-13, 44 U.S.C. 3501 et seq)
- Privacy Act, P.L 93-579, 5 U.S.C. 552a
- Freedom of Information Act, P.L. 89-487, 5 U.S.C. 552
- OMB Circular Number A-130, Management of Federal Information Resources

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
Cyber Security		
FY 2011		**0**
FY 2012		**0**
FY 2013		**111,022**
FY 2014-FY 2017		**TBD**
Infrastructure Program		
FY 2011	• This activity was transferred from Cyber Security. Funding starts in FY 2013.	**0**
FY 2012	• This activity was transferred from Cyber Security. Funding starts in FY 2013.	**0**
FY 2013	• Fully implement Federal Cloud by December 31, 2012. • Support research, development and deployment of the Cyber Tracer, Insider Threat Capability, Data Leakage Capability, Data Loss Prevention Capability and Continuous Monitoring. • Collapse and Consolidate Networks, Applications, and Services into Virtualized Environments.	**111,022**
FY 2014-FY 2017	• Leverage Cloud Computing to Enable a Low-Cost Shared Services Model. • Build the Next Generation Mobile Infrastructure. • Develop and implement the Joint Cyber Security Coordination Center (JC3)	**TBD**
Technology Application Development		
FY 2011	• This activity was transferred from Cyber Security. Funding starts in FY 2013.	**0**
FY 2012	• This activity was transferred from Cyber Security. Funding starts in FY 2013.	**0**
FY 2013	• Funding was transferred to higher priorities within NNSA CIO Activities.	**0**
FY 2014-FY 2017	• Employ a layered defense-in-depth cyber security model across the NNSA enterprise that will ensure integrated and layered protections are implemented consistently across NNSA computing environments. • Provide improvement to JC3 Capability and enhancement to CSL capability.	**TBD**

Enterprise Secure Computing (Homeland Security)
Overview

Enterprise Secure Computing provides state-of-the-art enterprise level classified computing infrastructure that enables effective collaboration and information sharing necessary for the NNSA Enterprise.

Sequence

Benefits

- Establishes a secure enterprise network accredited at the S/RD level.
- Establishes user type accreditation allowing for rapid deployment across all NNSA and DOE sites with minimal effort required to initiate.
- Enforces consistent security, processes, and equipment standards to minimize support complexities and reduces overall support costs.
- Supports a variety of standardized connection design options to allow sites with minimal high-availability requirements to connect in a cost effective manner
- Two-factor authentication provides robust identity, access, and authorization control to all assets.
- Is configured with security baked in with sensors deployed throughout the infrastructure to provide rich situational awareness.
- Provides a platform by which NNSA can begin to collapse and consolidate redundant networks and applications across the Nuclear Security Enterprise.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• This activity was transferred from Cyber Security. Funding starts in FY 2013.	**0**
FY 2012	• This activity was transferred from Cyber Security. Funding starts in FY 2013.	**0**
FY 2013	• Complete integration of Kerberos authentication for select National Laboratories. • Complete development of the ESN Gateway to DoD SIPRNet. • Complete integration of the NNSA Secret Network (NSN) with DoD SIPRNet. • Complete development of IARC as the Compute Network Defense Service Provider (CNDSP) for the NSE. • Continue integration of PRIDE applications. • Continue deployment of the Small Site Hub. • Continue development of classified cloud computing for the NSE (2NV).	**14,000**
FY 2014-FY 2017	• Continue integration of PRIDE applications. • Continue deployment of the Small Site Hub. • Continue development of classified cloud computing for the NSE (2NV).Virtual desktop infrastructure • Two-factor authentication PKI • Implementation of the Department computer network defense service provider • Implementation of classified cloud • Implementation of voice over IP with the classified environment	**TBD**

Federal Unclassified Information Technology
Overview

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. 2NV is the IT transformation that is a foundational activity towards implementing the "One NNSA" vision established by the NNSA Administrator. The $30M profile will provide for the current technology implementation. 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.

Sequence

Benefits

- Decreases cost and improves efficiency by 20%
- Improves ability to recruit technology-savvy college graduates
- Allows secure, business-to-business transactions between sites and M&Os (enabling future shared services)
- Decreases data sprawl by consolidating data in the cloud, layering improved security measures, and providing enhanced data surety
- Desktop virtualization reduces the attack surface and provides another layer of security
- Application virtualization reduces patching time, allowing vulnerabilities to be remediated more quickly
- Hub and spoke networking model improves cyber auditing and logging capabilities
- Untethers users from their desktops and enables mobile workers
- Provides a more efficient, consolidated approach to the delivery of IT solutions
- Reduces the need for duplicative point solutions driving efficiency through data abstraction
- Virtualization reduces the capital expenditures and carbon footprint of IT solutions

Other Information

- V. Kundra, 25 Point Implementation Plan to Reform Federal Information Technology Management, December 9, 2010. (http://www.cio.gov/pages.cfm/page/White-House-Forum-on-IT-Management-Reform)

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• This activity was transferred from the Office of the Administrator account. Funding starts in FY 2013.	**0**
FY 2012	• This activity was transferred from the Office of the Administrator account. Funding starts in FY 2013.	**0**
FY 2013	• During FY 2013, the NNSA OCIO and the DOE OCIO will collaboratively expand commodity capabilities within the VDI platform. Notional examples include the following: (1) Work with DOE to incorporate NNSA electronic records management solution into storage; (2) Refined portal experience — internal/external; (3) App store; (4) Data warehousing/BI (Business Intelligence); (5) VoIP (Voice over Internet Protocol); (6) Shared line of business applications (HR/HCM [Human Resources/Human Capital Management], Finance, Procurement); (7) Platform as a Service (PaaS) for NNSA Application Hosting; (8) Single endpoint device for both classified and unclassified computing; (9) Focused on the collapsing redundant point	**30,000**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	solutions into enterprise solutions by leveraging a service oriented architecture. • Focused on migrating legacy system to cloud-based infrastructure. • Baselined the cost/benefit ratio for existing solutions to enable identification of areas of potential innovation.	
FY 2014-FY 2017	• Increase efficiencies related to the provisioning of the commodity computing infrastructure in order to re-invest savings to generate new efficiencies; creating a self-sustaining cycle of continuous improvement that creates a best in class business value for the American taxpayer. • Increase efficiencies related to the provisioning of the IT solutions in order to re-invest savings to generate new efficiencies; creating a self-sustaining cycle of continuous improvement that creates a best in class business value for the American taxpayer.	**TBD**

Capital Operating Expenses and Construction Summary
Capital Operating Expenses[a]

(dollars in thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Capital Operating Expenses			
General Plant Projects	0	0	0
Capital Equipment	0	0	0
Total, Capital Operating Expenses	**0**	**0**	**0**

[a] Funds are appropriated for Operations and Maintenance, which includes operating expenses, capital equipment and general plant projects. The program no longer budgets separately for capital equipment and general plant projects. Funding shown reflects estimates based on actual FY 2011 obligations.

National Security Applications
Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Total, National Security Applications	**0**	**10,000**	**18,248**
Total, Science, Technology and Engineering Capability	**19,794**	**0**	**0**

Out-Year Funding Profile by Subprogram and Activity

The outyear numbers for Weapons Activities do not reflect programmatic requirements. Rather, they are an extrapolation of the FY 2013 request based on rates of inflation in the Budget Control Act of 2011. The Administration will develop outyear funding levels based on actual programmatic requirements at a later date.

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
Consolidated Appropriations Act, 2012 (P.L. 112-74)
National Defense Authorization Act for FY 2012 (P.L. 112-81)

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.

The technical scope of the program is organized into the following focus areas with specific R&D objectives:

1) Advanced Science: develop a new generation of transportable, high-performance radiation sources to support nuclear counterterrorism and weapons effects missions.

2) Experimental Capabilities: advance the ability to test and characterize military systems, materials, and components in nuclear weapon environments and to validate the models and codes used to certify the hardness of these systems to their effects.

3) Science Based Output: support design, qualification, and continued assessments of outputs of nuclear weapons through increased understanding of the underlying physical systems and the development and maintenance of computational and experimental tools.

4) Standoff Detection of Special Nuclear Material: Better understand the physical principles of and develop technologies that enable standoff detection of metallic Highly Enriched Uranium (HEU) and HEU weapons. Focus is on signatures, active interrogation source models, and alternative detection modalities.

5) Electromagnetic Pulse (EMP) Effects and Response Modeling and Simulation: create validated models and simulations of the response and effects of EMP on electronic components, systems, and subsystems and to determine EMP and radio frequency (RF) signatures from underground nuclear tests in support of the Comprehensive Test Ban Treaty and US nuclear monitoring missions.

6) Technical Nuclear Forensics: maintain and improve experimental, modeling, and simulation capabilities for post-detonation forensics of a nuclear device to support attribution.

These specific technical objectives allow for critically targeted investments in the national security science, technology and engineering capabilities necessary to address current and future global security issues. Although core to U.S. Government nuclear security and threat reduction priorities, these ongoing activities have not been funded consistently over time because they have been seen as secondary or tertiary mission components of a number of different organizations within NNSA. Nuclear Forensics modeling and EMP effects modeling, in particular, are two capabilities that

have atrophied since the end of the Cold War. The funds in the NSA program will greatly aid in retaining key personnel and assist in training the next generation of experts in these fields, ensuring a U.S. Government capability in case of a malevolent nuclear event.

By consolidating all of these activities under one budget line overseen by a single office, DOE-NNSA and DTRA have created a cohesive plan for undertaking the R&D required to solve these complex scientific problems. Through its support of these activities, the NSA program will advance and sustain our basic understanding of and develop solutions for key national security challenges such as detection of nuclear material, nuclear forensics, and foreign weapons effects/survivability.

Program Accomplishments and Milestones

In the prior appropriation year, NSA accomplished two significant milestones in program management and/or program development. These accomplishments include: 1) Signing of a DTRA-NNSA FY 2011 Joint Program Plan, which identifies NNSA and DTRA funding levels for each Focus Area as well as the key technical milestones and deliverables for which each NNSA laboratory is responsible. This Joint Program Plan will provide the template for future program plans throughout the life of the MOU; 2) Consolidation of leadership of the NSA line under one organization (Office of Nuclear Threat Science) and identification of those offices responsible for overseeing the technical program within each Focus Area.

Explanation of Changes

The Department requests $18.2M in Fiscal Year 2013 for National Security Applications, which is a +$8.2M increase from the enacted FY 2012 level.

The 82% increase in this account reflects the commitment by the NNSA to develop the Enhanced SNM Detection technology (Negative Muon interrogation) to a viability decision point. Further, the additional funds will stabilize our limited EMP and Forensic modeling expertise and activities needed to understand unique foreign weapons effects.

Program Planning and Management

NSA is a highly collaborative activity primarily between multiple DOE/NNSA offices and the Defense Threat Reduction Agency. Multiple meetings that include both executive and technical levels are used to determine the funding priorities, review ongoing activities, and select new projects through a proposal vetting process.

Strategic Management

In meeting the identified challenges to NNSA, the Department has implemented a new oversight structure for activities under the NSA line. Under the new structure, program oversight is consolidated under the Office of Nuclear Threat Science (NTS). NTS has identified relevant lead action officers for each technical focus area from across NNSA program offices to monitor and oversight the day-to-day activities.

Two external factors present the strongest impact to the overall achievement of the program's strategic goal:

- Full funding for the MOU from DTRA. The jointly-approved work scope is contingent on the laboratories receiving funds from both NNSA and DTRA. If funds from DTRA are not available in FY 2013, the technical program will continue, but under a reduced scope.
- Availability of key personnel at the laboratories. Steady funding for FY 2013 and beyond will ensure that key technical personnel at the laboratories will be available to perform the work. If funding is at risk, these individuals may work on other technically unrelated projects, placing the capability at risk.

Major Outyear Priorities and Assumptions

The outyear numbers for Weapons Activities do not reflect programmatic requirements. Rather, they are an extrapolation of the FY 2013 request based on rates of inflation in the Budget Control Act of 2011. The Administration will develop outyear funding levels based on actual programmatic requirements at a later date. Major Outyear Priorities and Assumptions will be delineated in that update.

Program Goals and Funding

The outyear numbers for Weapons Activities do not reflect programmatic requirements. Rather, they are an extrapolation of the FY 2013 request based on rates of inflation in the Budget Control Act of 2011. The Administration will develop outyear funding levels based on actual programmatic requirements at a later date. Program Goals and Funding will be delineated in that update.

Explanation of Funding and/or Program Changes

	(Dollars in Thousands)		
	FY 2012 Enacted	FY 2013 Request	FY 2013 vs. FY 2012
National Security Applications	**10,000**	**18,248**	**+8,248**

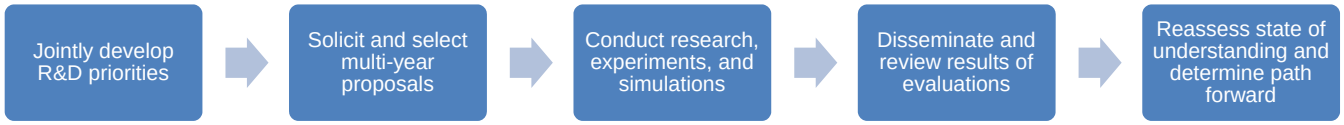
The National Security Applications request sustains modest, but critical, investments in national security science, technology and engineering capabilities necessary to (a) address currently recognized global security issues and (b) agilely and adeptly respond to similar, yet currently unrecognized, future threats. In some instances, continued investment will help restore capabilities that have atrophied, such as in the areas of nuclear forensics modeling and EMP effects modeling. In other instances, the investment will sustain and strengthen existing capabilities. In all instances, the goal is to assure that the U.S. Government maintains a robust response to nuclear security and threat reduction priorities. The NSA program will also be an aid in retaining key personnel by offering challenging and consequential work and assist in training the next generation of experts to protect the nation from nuclear threats posed by terrorists and non-state actors.

Total Funding Change, National Security Applications	**10,000**	**18,248**	**+8,248**

National Security Applications
Overview

The funds in the National Security Applications budget line support activities under the DTRA-NNSA MOU which enhance national security by developing solutions to the problems of standoff detection of nuclear material, nuclear forensics, weapons effects and survivability, and nuclear device modeling and simulation. The NNSA laboratories are the only suitable element within the U.S. Government for conducting the technical analyses that lie at the heart of these issues. Through support of the NSA program, the Department will not only contribute to U.S. nuclear security, but also sustain the limited cadre of experienced scientists and engineers whose are capabilities vital to USG counterterrorism, counter- and nonproliferation, and stockpile stewardship missions.

Sequence



Benefits

- Improve the U.S.'s ability to attribute nuclear detonations through nuclear forensics, thereby improving deterrence.
- Better prepare the nation's critical infrastructure for nuclear attack by increasing our understanding of electromagnetic pulse effects.
- Further global nonproliferation efforts by strengthening the science supporting the CTBT.
- Protect the US from nuclear attack by improving standoff detection capabilities.

Other Information

See "Memorandum of Understanding Between The Department of Defense—Under Secretary of Defense for Acquisition, Technology, and Logistics and the Department of Energy—National Nuclear Security Administration" and "FY11 Counterterrorism, Survivability, and Weapons Effects Joint Program Plan" for more information.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Completed Phase 1 source evaluation series • Demonstrated computing platform to assess load concepts and perform simulations and experiments • Developed and demonstrated iron & krypton plasma sources on National Ignition Facility • Developed initial 3D high frequency seismic model for underground test source term characterization • Evaluated utility of cosmic ray muons and the Nuclear Material Identification System for warhead counting and identification • Developed plan to enhance and/or assess the capability of electrical modeling tools for EMP effects and response • Developed Special Nuclear Material (SNM) Chronometers and continue development of the interpretation of non-nuclear structural materials in Debris Diagnostics	**19,794**[a]
FY 2012	• Complete Phase 2 source evaluation series and predictive model to guide source design • Conduct initial nuclear test monitoring decoupling experiments on NRL laser • Validate 3D seismic model with the results of laser, low energy, and medium-large	**10,000**

[a] This amount appears under the title Science, Technology and Engineering Capability.

Fiscal Year	Activity	Funding (Dollars in Thousands)
	field experiments • Conduct experiments with portable bremsstrahlung source for detecting shielded SNM & pulsed power-based technology for standoff active interrogation • Develop and demonstrate capability and utility of circuit, mixed signal, and semiconductor simulators to simulate effects and response in an electromagnetic environment • Continue development of DSD forensics database, Integrated Knowledge Engine, and Forensics Inversion Tool Suite	
FY 2013	• Demonstrate neutron generator coupled with advanced load designs • Nuclear weapons effects test with Missile Defense Agency Active Telescope • Demonstrate warm X-ray source on Z-machine • Demonstrate full-scale pulser prototype • Begin planning for impulse generation experiment capability at Z-machine • Conduct EMP electronic damage assessments with complimentary modeling and simulation of effects and response • Improve and expand modeling and simulation capabilities as well as physical databases for equations of state and nuclear cross sections • Maintain and improve experimental capabilities for sample irradiation and subsequent laboratory analysis activities	**18,248**
FY 2014- FY 2017	• Continue to conduct R&D on materials science, computational modeling, experimental capabilities, potential nuclear device output, standoff detection of nuclear materials, EMP effects, and nuclear forensics	**TBD**

Capital Operating Expenses and Construction Summary
Capital Operating Expenses[a]

(dollars in thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Capital Operating Expenses			
General Plant Projects	0	0	0
Capital Equipment	667	682	697
Total, Capital Operating Expenses	**667**	**682**	**697**

Outyear Capital Operating Expenses

(dollars in thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request
Capital Operating Expenses				
General Plant Projects	0	0	0	0
Capital Equipment	712	728	744	760
Total, Capital Operating Expenses	**712**	**728**	**744**	**760**

[a] Funds are appropriated for Operations and Maintenance, which includes operating expenses, capital equipment and general plant projects. The program no longer budgets separately for capital equipment and general plant projects. Funding shown reflects estimates based on actual FY 2011 obligations.

Defense Nuclear Nonproliferation

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, and the purchase of not to exceed one passenger motor vehicle for replacement only, $2,458,631,000, to remain available until expended.

Explanation of Change

Change from the language proposed in FY 2012 consists of a change to the requested funding amount and a cancellation of unobligated balances. The Defense Nuclear Nonproliferation cancellation of unobligated balances of $30 million is associated with the completion of the Elimination of Weapons Grade Plutonium Production Program and was proposed for cancellation to offset requirements elsewhere within DOE.

Overview
Appropriation Summary by Program

(dollars in thousands)

	FY 2011 Current	FY 2012 Enacted [a]	FY 2013 Request
Defense Nuclear Nonproliferation			
Nonproliferation and Verification Research and Development	355,407	354,150	548,186
SBIR/STTR [Non-Add]	[5,579]	[6,245]	[11,727]
Nonproliferation and International Security	147,494	153,594	150,119
International Nuclear Materials Protection and Cooperation [b]	578,633	569,927	311,000
Fissile Materials Disposition	802,198	685,386	921,305
Global Threat Reduction Initiative [b]	444,689	498,000	466,021
Legacy Contractor Pensions	0	55,823	62,000
Subtotal of Defense Nuclear Nonproliferation	**2,328,421**	**2,316,880**	**2,458,631**
Use of Prior Year Balances	-2,050	0	0
Rescission of Prior Year Balances	-45,000	-21,000	0
Total, Defense Nuclear Nonproliferation	**2,281,371**	**2,295,880**	**2,458,631**

Out-Year Appropriation Summary by Program

(dollars in thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request
Defense Nuclear Nonproliferation				
Nonproliferation and Verification Research and Development	412,622	420,344	428,417	437,719
Nonproliferation and International Security	156,363	167,070	173,718	177,490
International Nuclear Materials Protection and Cooperation [b]	282,628	288,026	293,870	300,171
Fissile Materials Disposition	950,000	960,000	975,000	996,170
Global Threat Reduction Initiative [b]	485,775	494,866	504,371	515,322
Legacy Contractor Pensions	63,138	64,320	65,555	66,978
Total, Defense Nuclear Nonproliferation	**2,350,526**	**2,394,626**	**2,440,931**	**2,493,850**

[a] FY 2012 Enacted reflects rescission of $7.4 million associated with savings from the contractor pay freeze.

[b] FY 2011 total includes international contributions for INMP&C of $300,000 from South Korea, $117,000 from the United Kingdom of Great Britain, $512,076 from Norway, $540,602 from New Zealand, and $5,169,026 from Canada. International contributions for GTRI include $8,207,791 from Canada, and $499,970 from the Netherlands.

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
Consolidated Appropriations Act, 2012 (P.L. 112-74)
National Defense Authorization Act for FY 2012 (P.L. 112-81)

Overview

The Office of Defense Nuclear Nonproliferation (DNN) supports NNSA's goals of reducing nuclear dangers, modernizing the NNSA infrastructure, and strengthening the science, technology, and engineering base by eliminating or securing inventories of surplus nuclear and radiological materials and infrastructure usable for nuclear material; providing technical and policy leadership to limit or prevent the spread of materials, technology, and expertise relating to weapons of mass destruction; and advancing technologies to detect the proliferation of weapons of mass destruction worldwide.

DNN is responsible for implementing key United States Government nuclear security, nonproliferation, and arms control activities. These critical national security missions include: securing vulnerable nuclear and radiological material at facilities throughout the world; removing plutonium and highly enriched uranium from partner countries; eliminating U.S. nuclear material declared surplus to defense needs; negotiating and providing the technical capability to verify arms control treaties and agreements; strengthening other countries' capacities to implement nonproliferation obligations; and enhancing other nations' capabilities to deter and detect illicit movement of nuclear and radiological materials.

Within the appropriation, DNN funds the following programs: Nonproliferation and Verification Research and Development (R&D), Nonproliferation and International Security (NIS), International Nuclear Materials Protection and Cooperation (INMP&C), Fissile Materials Disposition (FMD), and Global Threat Reduction Initiative (GTRI).

Program Accomplishments and Milestones

Significant DNN accomplishments and milestones in the prior appropriation year include:

SECURING/ELIMINATING MATERIALS

1) removed or eliminated 272 kilograms of highly enriched uranium (HEU) from countries such as Ukraine, Belarus, Serbia, and Kazakhstan; 2) completed a large-scale campaign to provide secure long-term storage for more than 10 metric tons (MT) of HEU and 3 MT of plutonium in spent fuel in Kazakhstan – enough for 775 nuclear weapons; 3) converted or verified shutdown of four foreign HEU research reactors to allow removal of the HEU; 4) downblended approximately 14 MT of Russian HEU to low enriched uranium (LEU); 5) helped bring into force the amended U.S.-Russia Plutonium Management and Disposition Agreement (PMDA), which commits each country to dispose of no less than 34 MT of excess weapon-grade plutonium; 6) downblended a cumulative 124 MT of U.S. surplus HEU; 7) completed nuclear security upgrades at a cumulative 218 buildings in Russia and the FSU containing weapons-usable nuclear materials; 8) placed a cumulative total of approximately 198 material protection, control, and accounting (MPC&A) regulations in the development phase for the Russian and other FSU countries; 9) installed radiation detection equipment at a cumulative total of 460 border crossing sites and 39 Megaports; and, 10) monitored the downblending of 30 MT of Russian weapons-usable HEU from dismantled nuclear weapons to LEU.

PREVENTING PROLIFERATION

1) led the revision of Nuclear Suppliers Group guidelines to control the transfer of sensitive technology related to enrichment and reprocessing of nuclear material; 2) led successful U.S. Government and international effort to revise international guidelines on the physical protection of nuclear material and nuclear facilities (international Atomic Energy Agency INFCIRC/225/Rev.5) and initiated related training efforts to strengthen nuclear security internationally; 3) established the Nuclear Science and Security Consortium to build a strong personnel pipeline of new technical talent needed to meet future nonproliferation technology challenges; and, 4) provided technical support to Nuclear Security Centers of Excellence in South Korea and Japan.

ADVANCING NONPROLIFERATION TECHNOLOGIES

1) established and demonstrated a reusable conventional explosive source physics test bed for the conduct of experiments to test new capabilities to detect and identify extremely low nuclear detonations at increasing levels of confidence; 2)established a joint research and experimental test bed with the Defense Threat Reduction Agency for detecting and identifying proliferation activities; and, 3) jointly with DoD, instituted a major review of the nation's space-based nuclear detonation detection system. DNN is working towards the following major milestones in 2013.

Milestone	Date
Nuclear Material Removal/Elimination	
Fully achieve NNSA's portion of the President's 4-year goal to secure vulnerable material. This includes:	
Global Threat Reduction Initiative	
• Removing/eliminating all remaining HEU from 9 more countries such as Mexico, Ukraine, and Vietnam.	Dec. 2013
• Converting or verifying as shutdown 7 additional HEU research reactors for a cumulative total of 88 reactors.	Sept. 2013
Fissile Material Disposition	
• Complete construction of the WSB to support mixed oxide (MOX) cold start-up activities.	Sept. 2013
• Begin cold start-up activities of the MOX Fuel Fabrication Facility.	Oct. 2013
R&D	
• Demonstrate technologies for special nuclear material movement detection.	Dec. 2013
INMPC	
• Complete MPC&A upgrades on eight additional buildings containing weapons-usable nuclear material (cumulative 229).	Dec. 2013
NIS	
• Complete successful monitoring of downblending of 500 MT of Russian weapons grade HEU to LEU for use in U.S. civil nuclear reactors (30 MT in FY 2013).	Dec. 2013
• Collaborate with five additional countries and the International Atomic Energy Agency (IAEA) to implement updated nuclear security measures contained in the fifth revision of the IAEA guidance document, INFCIRC/225, and conduct 6 bilateral physical protection assessments at facilities overseas containing U.S.-obligated nuclear material.	Sept. 2013

Explanation of Changes

A total of $2.459 billion is requested for DNN, which is a 7.1 percent increase over the Fiscal Year 2012 enacted level. The request reflects the following increases and decreases over Fiscal Year 2012.

The FY 2013 request increases the levels for Nonproliferation and Verification R&D (+$194,036,000) and Fissile Materials Disposition (+$235,919,000). The request decreases Nonproliferation and International Security (-$3,475,000), the International Nuclear Materials Protection and Cooperation (-$258,927,000), and Global Threat Reduction Initiative (-$31,979,000) and increases Legacy Contractor Pensions (+$6,177,000)

Program Planning and Management

National security priorities articulated in the National Security Strategy, and reflected in the Department of Energy and National Nuclear Security Administration Strategic Plans, will continue to drive program planning and management. These include finishing NNSA's contribution to the four-year effort to secure or eliminate all vulnerable nuclear weapon materials worldwide; disposing of excess nuclear weapon materials in the United States; supporting the development of new technologies for national security application; promoting the secure expansion of nuclear energy; and building capabilities worldwide to deter and detect the illicit movement of nuclear and radiological materials.

These objectives will be pursued in the context of senior level commitment within DOE and NNSA to improving how we develop, implement, and measure the effectiveness of our efforts.

Goal Area by Subprogram

Defense Nuclear Nonproliferation - Research and Development		
STRATEGIC GOAL: Secure our Nation: Enhance nuclear security through defense, nonproliferation, and environmental efforts		
OBJECTIVE: Reduce global nuclear dangers		
TARGETED OUTCOME: Complete by the end of 2013, demonstrations of next-generation technologies and methods to detect movement of special nuclear material for new treaty monitoring tools to ensure obligations of foreign governments are being met		
FY 2013 Annual Measure: Special Nuclear Material Detection: Cumulative percentage of progress toward demonstrating the next generation of technologies and methods to detect Special Nuclear Material movement.		
	Target	**Actual/Met or Not Met**
Budget Year	100%	
Current Year	90%	
Prior Year	80%	80%
By the end of FY 2013, demonstrate the next generation of technologies and methods to detect Special Nuclear Material movement. This result is important because it improves U.S. capability to detect the illicit transport and diversion of special nuclear material (SNM).		
Defense Nuclear Nonproliferation - International Nuclear Materials Protection and Cooperation		
STRATEGIC GOAL: Secure our Nation: Enhance nuclear security through defense, nonproliferation, and environmental efforts		
OBJECTIVE: Reduce global nuclear dangers		
TARGETED OUTCOME: Support the President's goal of securing vulnerable nuclear materials worldwide, target is the end of 2013.		
FY 2013 Annual Measure: Materials Protection, Control and Accountability (MPC&A) Upgrades – Buildings: Cumulative number of buildings containing weapons-usable material with completed MPC&A upgrades.		
	Target	**Actual/Met or Not Met**
Budget Year	229	
Current Year	221	
Prior Year	218	218
By the end of FY 2013, complete MPC&A upgrades on approximately 229 buildings containing weapons-usable nuclear material including Post Bratislava work-scope. This result is important because it prevents the theft/diversion of vulnerable nuclear weapons for use by terrorists.		

STRATEGIC GOAL: Secure our Nation: Enhance nuclear security through defense, nonproliferation, and environmental efforts		
OBJECTIVE: Reduce global nuclear dangers		
TARGETED OUTCOME: Support the President's goal of securing vulnerable nuclear materials worldwide, target is the end of 2013		
FY 2013 Annual Measure #1: Nuclear Material Removed: Cumulative number of kilograms of vulnerable nuclear material (HEU and plutonium) removed or disposed.		
	Target	**Actual/Met or Not Met**
Budget Year	3,835	
Current Year	3,455	
Prior Year	3,297	3,125
By December 2013, remove or dispose of 4,353 kilograms of vulnerable nuclear materials (HEU and plutonium) to meet the President's 4-Year plan. (GTRI will continue to remove U.S.-origin fuel from foreign research reactors until 2019 as an incentive for converting research reactors from HEU to LEU fuel.) This result is important becuase this effort will minimize the amount of weapons-useable material around the world.		

Major Outyear Priorities and Assumptions

We will have strong cooperation and commitments from our international partners in order to fully achieve the four-year effort to secure vulnerable nuclear materials by the December 2013 target.

We will continue to implement actions from the 2012 Nuclear Security Summit and will continue to work cooperatively with international partners through the G8 Global Partnership on nuclear and radiological security.

Russia will agree to convert or shutdown its HEU-fueled research reactors.

Nuclear power will continue to expand in several geopolitically important regions of the world.

Faced with a growing workload and aging workforce, the IAEA and international safeguards system will be under continued strain to effectively carry out its safeguards mission.

The network of nuclear security centers of excellence that developed from the 2010 Nuclear Security Summit will continue to expand and mature. The China Center of Excellence is slated for completion in FY 2013; the Indian Center of Excellence is projected to complete the design phase in 2013; additional centers will be developing in other countries.

Exchanges of nuclear security best practices and training/exercises will continue.

The U.S.-Russian HEU Purchase Agreement will be completed and not extended beyond December 2013.

Expertise proliferation continues to be a significant risk and that risk has expanded globally.

There will be long-term NNSA budget stability to sustain coherent R&D campaigns.

Program Goals and Funding

Mature programs, such as some of our activities in Russia, will focus more on sustainability, while also seeking to identify opportunities to use the expertise that the United States and Russia have developed jointly and apply that in other countries.

Other efforts, such as the four-year effort to secure and remove vulnerable nuclear material, will complete a major set of priority removals, but the program will continue to sustain completed security upgrades, make additional improvements to security systems where warranted, and address emerging threats.

Achieving enduring nuclear security depends on the sustainability of DNN's efforts. Developing effective partnerships with other countries and with international organizations, as well as industry and non-governmental organizations, is key to long-term impact and sustainability. In the past, these partnerships have leveraged both technical and funding resources for a number of programs. For example, we have received funding from multiple international partners and will encourage such collaborations in the future. In addition, engaging countries through the IAEA by utilizing programs like the Peaceful Uses Initiative, allows the United States to both meet its commitment to promote peaceful uses of nuclear technology, while supporting priority efforts, such as strengthening information-based safeguards and preparing the nonproliferation infrastructure for nuclear energy in countries new to nuclear technology.

Promoting transparent arms reductions and implementation of nonproliferation treaties, including developing the required verification technologies and approaches and associated transparency monitoring tools, is critical to reducing or eliminating proliferation concerns and reinforces the 2010 Nuclear Posture Review's call for a bold arms control agenda to demonstrate U.S. leadership and mobilize international support.

Explanation of Funding and/or Program Changes

	(Dollars in Thousands)		
	FY 2012 Enacted	FY 2013 Request	FY 2013 vs. FY 2012
Defense Nuclear Nonproliferation			
Nonproliferation and Verification Research and Development	**354,150**	**548,186**	**+194,036**
This increase allows the program to meet all six of the R&D goals to reduce nuclear danger by the timelines indicated in the 2011 NNSA Strategic Plan, and to increase effectiveness of multi-lab, interagency, large-scale field experimentation critical for nonproliferation test monitoring and arms control. The increase also permits production of satellite sensors for nuclear detonation detection at the rate needed to sustain replenishment of current capability as required and sustains the capability to monitor nuclear threats to the U.S. such as surface and above-ground nuclear detonations. A one-time addition of $150 million to support domestic uranium enrichment RD&D will allow us to demonstrate technical leadership as we build a new framework for international nuclear cooperation, better understand the scale-up limits of uranium enrichment technologies for enhanced efficiency and to better assess potential proliferation of new uranium enrichment programs around the world.			
SBIR/STTR [Non-Add]	**[6,245]**	**[11,727]**	**[5,482]**
The increase results from the one-time addition of $150 million to support domestic uranium enrichment RD&D included in the Nonproliferation and Verification Research and Development program which is subject to SBIR/STTR.			
Nonproliferation and International Security	**153,594**	**150,119**	**-3,475**
The decrease reflects: (1) the maturation of certain NGSI-sponsored safeguards technologies which allows a reduction in testing and evaluation costs; (2) the deceleration of the pace of engagement for foreign partner export control outreach and training efforts to accommodate funding in other higher priority areas; and (3) the elimination of certain lower priority policy studies and analyses.			

	(Dollars in Thousands)		
	FY 2012 Enacted	FY 2013 Request	FY 2013 vs. FY 2012
International Nuclear Materials Protection and Cooperation	**569,927**	**311,000**	**-258,927**
Decrease reflects the planned FY 2012 completion of: ongoing Maintenance and Sustainability support to the Russian Ministry of Defense (MOD); installation of Training and Logistic Management systems at all MOD locations; and funding for a number of major upgrade and sustainability initiatives at several sites. The decrease also reflects: the cessation of funding for two projects – MOD Regulations and MPC&A Operations Monitoring (MOM) – that will be transitioned to Russian responsibility at the end of FY 2012; reduced support for equipment sustainability by the transportation security project and protective force project teams; and the completion of installation of detection equipment at a cumulative 496 SLD sites, including 45 Megaports. Second Line of Defense FY 2013 funding represents a near-term transition to mobile detection deployment and sustainability activities while DNN further evaluates the longer-term strategy for the Core and Megaport programs.			
Fissile Materials Disposition	**685,386**	**921,305**	**+235,919**
This increase supports: the beginning of cold start-up activities for the MOX project; the shift of work scope to provide steady state feedstock to the Mixed Oxide Fuel Fabrication facility in lieu of the cancelled Pit Disassembly and Conversion Facility line item project; the initiation of activities required to convert depleted uranium required for MOX operations; and qualification of alternative MOX fuel designs by multiple vendors.			
Global Threat Reduction	**498,000**	**466,021**	**-31,979**
This decrease in funding for nuclear material removal efforts is consistent with the four-year plan. Funding was requested in FY2012 for long lead-time efforts that will support removals that occur in early FY2013 to meet the four-year deadline of December 31, 2013. However, within GTRI an increase in funding is provided to conversion efforts for the establishment of a reliable domestic production capability for the critical medical isotope Mo-99 without the use of HEU.			
Legacy Contractor Pensions	**55,823**	**62,000**	**+6,177**
Rescission of Prior Year Balances	**-21,000**	**0**	**+21,000**
Total, Defense Nuclear Nonproliferation	**2,295,880**	**2,458,631**	**+162,751**

Supporting Information

Operating Expenses, Capital Equipment and Construction Summary[a]

(dollars in thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Defense Nuclear Nonproliferation			
Operating Expenses	1,657,853	1,794,346	2,019,976
Capital Equipment	47,665	48,714	49,786
General Plant Projects	65	66	67
Construction	575,788	452,754	388,802
Total, Defense Nuclear Nonproliferation	**2,281,371**	**2,295,880**	**2,458,631**

[a] Funds are appropriated for Operations and Maintenance, which includes operating expenses, capital equipment and general plant projects. The program no longer budgets separately for capital equipment and general plant projects. Funding shown reflects estimates based on actual FY 2011 obligations.

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 2013 is $3,355,275.

Minority Serving Institution Partnerships Program

The Minority Serving Institution Partnerships Program (MSIPP-NNSA) aligns MSI investments with the NNSA mission in order to develop the needed skills and talent for NNSA's enduring technical workforce at the laboratories and production plants, and to enhance the research and education at under-represented colleges and universities.

NNSA previously supported MSI efforts, including Historically Black Colleges and Universities (HCBUs), through the Office of the Administrator, Weapons Activities, Defense Nuclear Nonproliferation, and Naval Reactors appropriations. FY 2013 will initiate the transition from the existing set of minority serving institution projects to the MSIPP, although the appropriations will still be requested in WA, DNN, and NR. The FY 2013 Request is $14.7 million of which $4.2million is requested within Defense Nuclear Nonproliferation.

The goals of the MSIPP are as follows: 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 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 sites; and 5) Increase the number of MSI graduates/Postdocs hired into DOE's technical and scientific workforce.

Legacy Contractor Pensions

This program provides the annual Defense Nuclear Nonproliferation share of the Department of Energy's payment to the University of California for 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 (LLNL) and Los Alamos (LANL) National Laboratories. The UCRP benefit for these individuals is a legacy cost and DOE's annual payment to the UC is required by contracts W-7405-ENG-48 (UC LLNL) and W-7405-ENG-36 (UC LANL). The amount of the annual payment is determined by actuarial valuation in the actuarial validation 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.

Nonproliferation and Verification Research and Development
Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Nonproliferation and Verification Research and Development			
Proliferation Detection (PD)	229,427	222,150	240,536
Homeland Security-Related Proliferation Detection [Non-Add]	[50,000]	[50,000]	[50,000]
Nuclear Detonation Detection (NDD)	125,980	132,000	157,650
Domestic Uranium Enrichment RD&D	0	0	150,000
SBIR/STTR [a] [Non-Add]	0	[6,245]	[11,727]
Total, Nonproliferation and Verification R&D	**355,407**	**354,150**	**548,186**

Out-Year Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request
Nonproliferation and Verification Research and Development				
Proliferation Detection (PD)	248,312	252,955	257,790	263,369
Homeland Security-Related Proliferation Detection [Non-Add]	[50,000]	[50,000]	[50,000]	[50,000]
Nuclear Detonation Detection (NDD)	164,310	167,389	170,627	174,350
Domestic Uranium Enrichment RD&D	0	0	0	0
SBIR/STTR [Non-Add]	[8,446]	[8,941]	[9,598]	[10,461]
Total, Nonproliferation and Verification R&D	**412,622**	**420,344**	**428,417**	**437,719**

[a] FY 2011 current appropriation reflects the $5,579 thousand transferred out of the DNN appropriation for SBIR/STTR.

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
Consolidated Appropriations Act, 2012 (P.L. 112-74)
National Defense Authorization Act for FY 2012 (P.L. 112-81)

Overview

In support of the Secretary's Strategic Goal to enhance nuclear security through defense, nonproliferation, and environmental efforts, the Defense Nuclear Nonproliferation, Nonproliferation and Verification Research and Development (DNN R&D) program drives the innovation of unilateral and multi-lateral technical capabilities to detect, identify, and characterize foreign: 1) nuclear weapons programs, 2) illicit diversion of special nuclear materials, and 3) nuclear detonations. In FY 2013, this program will also support domestic uranium enrichment RD&D.

To meet national and Departmental nuclear security requirements, R&D leverages the unique facilities and scientific skills of the NNSA nuclear security enterprise, other DOE national laboratories, academia, and industry for the performance of research, conduct of technology demonstrations, and development of prototypes for integration into operational systems.

Program Accomplishments and Milestones

In FY 2011, R&D accomplished four significant milestones in program management and program development. These were:

1) Established and demonstrated a reusable conventional explosive source physics test bed for the conduct of experiments to test new capabilities to detect and identify extremely low nuclear detonations at increasing levels of confidence;
2) Established a joint program with the Defense Threat Reduction Agency to detect signatures and identify observable phenomenology of proliferant activities;
3) Established the Nuclear Science and Security Consortium (NSSC) in academia to develop NNSA laboratory partnerships with academia and increase NNSA's use of university research in nuclear nonproliferation; and
4) Jointly with DoD, instituted a major review of the nation's space-based nuclear detonation detection system.

Explanation of Changes

The Department requests $548,186,000 in FY 2013 for research and development for Proliferation Detection, Nuclear Detonation Detection, and Domestic Uranium Enrichment RD&D.

The FY 2013 request increases the levels for Proliferation Detection (PD) (+$18,386,000), Nuclear Detonation Detection (NDD) (+$25,650,000), and Domestic Uranium Enrichment Research, Development and Demonstration (RD&D) (+$150,000,000).

Program Planning and Management

R&D's targets and goals are aligned to DOE's Strategic Goal 3: *Secure Our Nation* by enhancing nuclear security and NNSA's Strategic Goal 1: *Reduce Nuclear Dangers* by developing technical capabilities to detect foreign nuclear weapons development, detect nuclear detonations, detect the movement or diversion of special nuclear materials, monitor compliance with nuclear arms control and nonproliferation commitments, and discourage the unnecessary spread of enrichment technology, and inform policymakers of current and future technical capabilities available for meeting potential nuclear nonproliferation and arms control treaty objectives. The updated measures are compiled and provided in the FY 2013 Annual Performance Plan (APP) Report. The Government Performance and Results Act (GPRA) Unit Program Number 52 of the APP identifies the corporate performance measures that the program uses to track progress toward these and other outcomes.

Strategic Management

DNN R&D operates on a set of key principles that guide the conduct of our programmatic activity. The application of these principles ensures that DNN R&D achieves the highest quality and most relevant research and development with the maximum effective use of the funds afforded us by the taxpayer. We are always mindful that we serve as stewards of the peoples' money and as such always strive to obtain the highest quality R&D done for the least cost. Our operating principles are: Maintain a Disciplined, Robust, and Transparent approach to R&D Management, Engagement with the User Community, and Support Small Business Development.

Three external factors present the likeliest impediment to the achievement of the program's strategic goals:

- long-term NNSA budget stability to sustain coherent R&D campaigns;
- long-term budget stability of US government partner organizations in order to sustain synergistic joint activities; and,

- viability of research and development efforts in the interagency community.

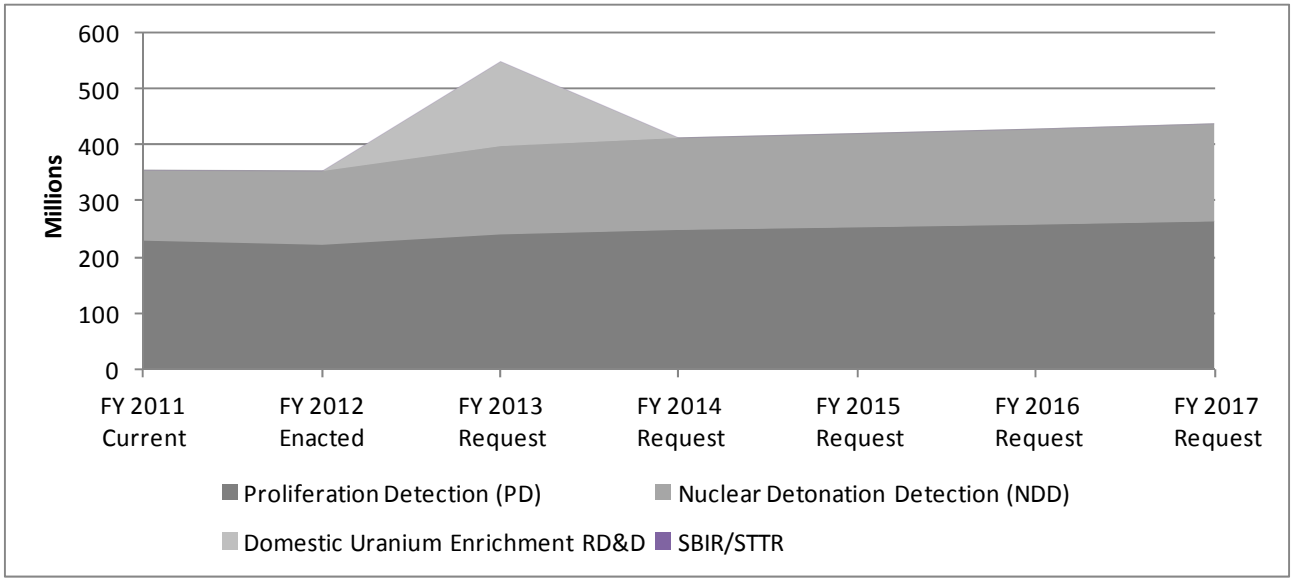
Major Outyear Priorities and Assumptions

The outyear projections for the R&D program are $1,661,656,000 (FY 2014 – FY 2017) and $37,446,000 (FY 2014 – FY 2017) for SBIR and STTR, for an R&D out-year projection (FY 2014 – FY 2017) total of $1,699,102,000. This will support R&D leading to detection capabilities that address current and projected threats to national security posed by the proliferation of nuclear weapons, and diversion of special nuclear material. 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. The success of international nuclear treaties and agreements depends, in part, upon having the technical means and policy context to support negotiations and detect non-compliance.

Program Goals and Funding

R&D's targets and goals are aligned to DOE's Strategic Goal 3: *Secure Our Nation* by enhancing nuclear security and NNSA's Strategic Goal 1: *Reduce Nuclear Dangers* by developing technical capabilities that improve the detection, identification, and characterization of the full life cycle of foreign nuclear weapons development programs. These technology development efforts will include not only meeting US-only nuclear security requirements, but also bi-lateral and multi-lateral nuclear treaty verification requirements. DNN R&D will achieve this vision by leveraging the unique expertise, capabilities, and resources of the National Nuclear Security Enterprise, academia, and industry through the sponsorship of leading edge research, conducting technology demonstrations, and developing prototypes that mature into integrated operational systems to meet national nuclear security needs and requirements. DNN R&D makes important and unique contributions to the Department's and Nation's nuclear nonproliferation efforts.

Figure 1: Relative Out-Year Funding Priorities in Defense Nuclear Nonproliferation – Nonproliferation and Verification Research and Development



Explanation of Funding and/or Program Changes

	(Dollars in Thousands)		
	FY 2012 Enacted	FY 2013 Request	FY 2013 vs. FY 2012
Nonproliferation and Verification Research and Development			
Proliferation Detection	**222,150**	**240,536**	**+18,386**
The increase allows progress on all six R&D goals to reduce nuclear danger by the timelines indicated in the 2011 NNSA Strategic Plan and to increase effectiveness of multi-lab, interagency, and large-scale field experimentation critical for nonproliferation test monitoring and arms control.			
Nuclear Detonation Detection	**132,000**	**157,650**	**+25,650**
The increase permits production of satellite sensors for nuclear detonation detection at the rate needed to sustain replenishment of current capability as required. This sustains the capability to monitor nuclear threats to the U.S. such as surface and above-ground nuclear detonations as required by Public Law 110-181; Sec 1065 & Public Law 111-383; Sec 913 (National Defense Authorization Acts for Fiscal Years 2008 & 2011).			
Domestic Uranium Enrichment RD&D	**0**	**150,000**	**+150,000**
The increase also includes a one-time addition of $150 million, prior to the reduction for SBIR/STTR, to support domestic uranium enrichment RD&D to better understand uranium enrichment technologies for enhanced efficiency and support a domestic capacity for uranium enrichment. Having a domestic capacity for uranium enrichment has important national security and nonproliferation implications, including discouraging the unnecessary spread of enrichment technology by contributing directly to sustained confidence in the international commercial enrichment market, improving the ability to detect proliferant programs, and producing tritium.			
SBIR/STTR	**[6,245]**	**[11,727]**	**[5,482]**
Reflects the contribution of R&D funding for SBIR/STTR, previously calculated from and included in the non-production portions of PD and NDD lines above. For FY 2013 only, an increase of $4.575 million is associated with domestic uranium enrichment RD&D. Final calculations and decisions are made during the year of execution.			
Total Funding Change, Nonproliferation and Verification Research and Development	**354,150**	**548,186**	**+194,036**

Proliferation Detection
Overview

The Proliferation Detection (PD) subprogram develops technologies to detect foreign nuclear weapons programs; supports nuclear arms control treaties verification and monitoring for compliance; and supports national nuclear security. The PD efforts are aligned along five functional areas. Fissile Material Production and Weapons Development Detection efforts are targeted towards the detection of foreign weapons programs. Radiation Sensing and Warhead Monitoring supports the development of nuclear security and nuclear arms control treaty monitoring and verification tools and applications and supports operational interdiction and nuclear security efforts across NNSA. Nonproliferation Enabling Technologies supports a broad base to bring new, cross-cutting technologies to multiuse applications in NNSA and the interagency community. The National Center for Nuclear Security (NCNS) is the fourth functional area and is an integrating function located at the Nevada National Security Site. The NCNS studies and tests the application of technology in support of the Nation's treaty verification and monitoring needs. Finally, PD includes university research and the Nuclear Science and Security Consortium (NSSC), which supports nuclear nonproliferation-related research by university graduate and post-graduate technical talent in a way that efficiently links university and Laboratory research in nonproliferation technology development.

Sequence

Benefits

- The Proliferation Detection (PD) subprogram provides technical expertise and leadership toward the development of next-generation nuclear detection technologies and methods to detect foreign nuclear materials and weapons production.
- The PD subprogram develops the tools, technologies, and techniques used to detect, locate, and analyze the global proliferation of nuclear weapons technology with special emphasis on verification technology and transparency measures.
- The PD subprogram develops capabilities to monitor foreign nuclear weapons program activities and to verify foreign compliance with nuclear security and arms control treaties.
- The PD subprogram, where synergistic, develops technologies that also support missions of international ports and border interdiction, special nuclear material search and identification, and incident response and recovery.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• **Fissile Material Production and Weapons Development Detection –** provided technical expertise and leadership in the development of next generation nuclear detection technologies, focused on advanced technologies and approaches for detecting foreign proliferant activities, including fissile material and weapon production facilities, equipment, and processes. • **Radiation Sensing and Warhead Monitoring –** provided technical expertise and leadership in addressing the most challenging problems related to detection, localization, and characterization of Special Nuclear Material, conducted research necessary to demonstrate next-generation detection capabilities for warhead monitoring, SNM detection, chain-of-custody, and the illicit diversion of SNM.	**229,427**

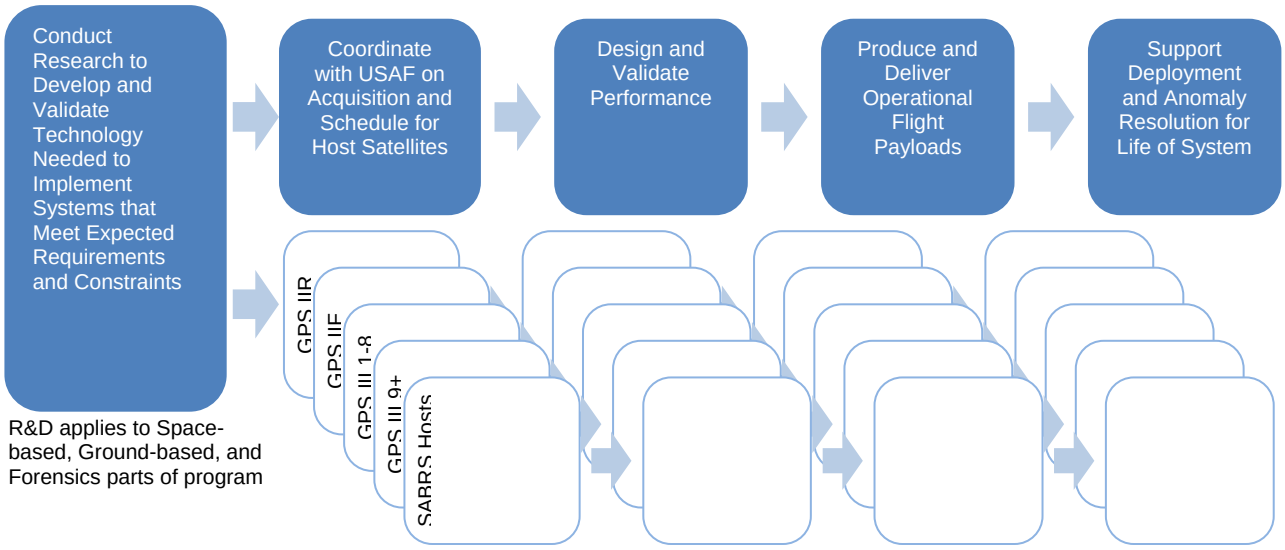
Fiscal Year	Activity	Funding (Dollars in Thousands)
	• **Nonproliferation Enabling Technologies -** developed and validated cross-cutting models, algorithms, methods, and operational capabilities that are key to this and other Defense Nuclear Nonproliferation programs and programs within the interagency community with synergistic national and homeland security missions. • **National Center for Nuclear Security –** operational demonstrations and research that supported U.S. capabilities to monitor and verify international treaties and cooperative agreements. Established two test beds to focus spiraled research and development efforts, for production detection and for seismic source physics. • **University Program –** supported university research that complements laboratory research. Established the National Science and Security Consortium (NSSC) for research in nuclear science and security that complements Lab research projects.	
FY 2012	• **Fissile Material Production and Weapons Development Detection -** provides technical expertise and leadership in the development of next generation nuclear detection technologies, focus on advanced technologies and approaches for detecting foreign proliferant activities, including fissile material and weapon production facilities, equipment, and processes. Begin operation of sensor development test bed. • **Radiation Sensing and Warhead Monitoring –** provides technical expertise and leadership in addressing the most challenging problems related to detection, localization, and characterization of Special Nuclear Material, conducts the research necessary to demonstrate next-generation detection capabilities for warhead monitoring, SNM detection, chain-of-custody, and the illicit diversion of SNM. Establish warhead measurement campaign for developing potential future transparency regime. • **Nonproliferation Enabling Technologies -** develops and validates cross-cutting models, algorithms, methods, and operational capabilities that are key to this and other Defense Nuclear Nonproliferation programs and programs within the interagency community with synergistic national and homeland security missions. • **National Center for Nuclear Security –** operational demonstrations and research that supports U.S. capabilities to monitor and verify international treaties and cooperative agreements. Establish three additional test beds to focus research and development in chain-of-custody, gas migration physics, and forensics. • **University Program –** supports university research that complements laboratory research and research fellowships in nuclear science and security. First full year of support for NSSC fellows.	**222,150**
FY 2013	• **Fissile Material Production and Weapons Development Detection -** provides technical expertise and leadership in the development of next generation nuclear detection technologies, focus on advanced technologies and approaches for detecting foreign proliferant activities, including fissile material and weapon production facilities, equipment, and processes. Conclude up to four operational cycles of the sensor development test bed. • **Radiation Sensing and Warhead Monitoring –** provides technical expertise and leadership in addressing the most challenging problems related to detection, localization, and characterization of Special Nuclear Material, conducts the research necessary to demonstrate next-generation detection capabilities for	**240,536**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	warhead monitoring, SNM detection, chain-of-custody, and the illicit diversion of SNM. Achieve NNSA Strategic Plan goal to demonstrate technologies for special nuclear material movement detection. Conclude baseline data collection for warhead measurement campaign. • **Nonproliferation Enabling Technologies -** develops and validates cross-cutting models, algorithms, methods, and operational capabilities that are key to this and other Defense Nuclear Nonproliferation programs and programs within the interagency community with synergistic national and homeland security missions. • **National Center for Nuclear Security –** operational demonstrations and research that supports U.S. capabilities to monitor and verify international treaties and cooperative agreements. Expand field experimentation and associated laboratory supporting research, especially in nuclear forensics. • **University Program –** supports university research that complements laboratory research and research fellowships in nuclear science and security that contribute to maintaining technical expertise in nonproliferation at the Laboratories. Begin assessment of how program is meeting goals and program objectives.	
FY 2014-FY 2017	• **Fissile Material Production and Weapons Development Detection -** provides technical expertise and leadership in the development of next generation nuclear detection technologies, focus on advanced technologies and approaches for detecting foreign proliferant activities, including fissile material and weapon production facilities, equipment, and processes. Conclude expected operational testing at production detection test bed. Modification of test bed for future development possible, based on FY11-FY14 outcomes. Achieve NNSA Strategic Plan goals to demonstrate technologies for uranium and plutonium production detection and to demonstrate remote monitoring capabilities for reactor operations. • **Radiation Sensing and Warhead Monitoring –** provides technical expertise and leadership in addressing the most challenging problems related to detection, localization, and characterization of Special Nuclear Material, conducts the research necessary to demonstrate next-generation detection capabilities for warhead monitoring, SNM detection, chain-of-custody, and the illicit diversion of SNM. Achieve NNSA Strategic Plan goal to demonstrate in field experiments, warhead monitoring and end-to-end chain-of-custody capabilities. • **Nonproliferation Enabling Technologies -** develops and validates cross-cutting models, algorithms, methods, and operational capabilities that are key to this and other Defense Nuclear Nonproliferation programs and programs within the interagency community with synergistic national and homeland security missions. • **National Center for Nuclear Security –** operational demonstrations and research that supports U.S. capabilities to monitor and verify international treaties and cooperative agreements. Continue operations, testing, and data collection at test beds, with the final set of large experiments at the nonproliferation test bed. • **University Program –** supports university research that complements laboratory research and research fellowships in nuclear science and security. Conclude and assess first full cycle of NSSC.	**1,022,426**

Nuclear Detonation Detection
Overview

The Nuclear Detonation Detection (NDD) program 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.

Sequence



Benefits

- Designs, builds, and supports the satellite sensors that the Department of Defense deploys and operates as part of the nation's nuclear test treaty monitoring and nuclear Integrated Threat Warning/Attack Assessment systems.
- Conducts advanced nuclear forensics research to improve the speed, accuracy, reliability, confidence, and specificity of nuclear forensics analysis.
- Provides technical expertise and leadership for development of next-generation seismic and radionuclide nuclear explosion monitoring technologies.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• **Surface, Atmospheric, and Space Detonation Detection (using Satellite-Based systems) -** built the Global Burst Detector (GBD) and Space and Atmospheric Burst Reporting System (SABRS) payloads for detecting and reporting nuclear detonations**.** Supported the integration, initialization, and operation of these payloads. Supported the research, development, and engineering efforts to prepare next generation sensors. Delivered GBD for GPS IIF #10, conducted delta-Critical Design Reviews (CDRs) for two key subsystems for the GBDs for GPS III #1-8, delivered two GBD simulators to Air Force GPS III satellite vendor, delivered SABRS #1, and conducted SABRS #2 Preliminary Design Review (PDR). • **Nuclear Forensics Research -** conducted research, technology development, and related science to improve post-detonation technical nuclear forensic capabilities.	**125,980**

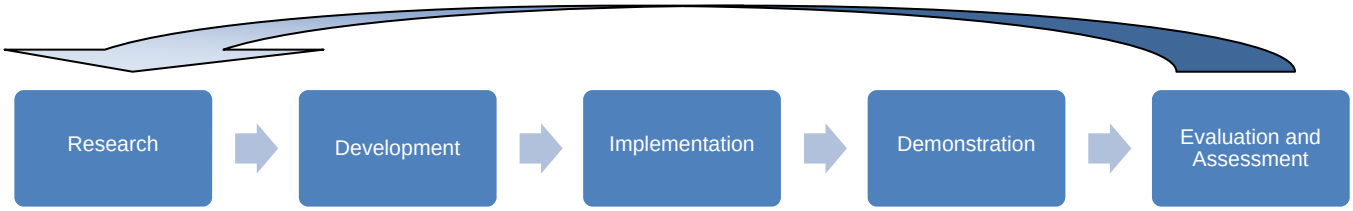
Fiscal Year	Activity	Funding (Dollars in Thousands)
	• **Underground, Underwater, and Atmospheric Detonation Detection (using Ground-Based systems) -** provided research products, with appropriate testing, demonstration, verification, and technical support for use in the U.S. National Data Center and U.S. Atomic Energy Detection System.	
FY 2012	• **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. Anticipate delivery of GBDs IIF#11, III#1, will conduct System Requirements Review (SRR) and System Design Review (SDR) for GBDs for GPS III9+. The SABRS #2 Critical Design review (CDR) has been deferred pending resolution of satellite hosting issues. • **Nuclear Forensics Research -** conducts research, technology development, and related science to improve post-detonation technical nuclear forensic capabilities. Initiating forensics collaboration with NCNS effort in Proliferation Detection. • **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. Anticipates tech-transfer of Regional Seismic Travel Time code to both National Data Center and international monitoring partners.	**132,000**
FY 2013	• **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 GBDs IIF#12, III#2, will conduct Preliminary Design Review (PDR) for GBDs for GPS III9+. • **Nuclear Forensics Research -** conducts research, technology development, and related science to improve post-detonation and interdicted nuclear material technical nuclear forensic capabilities. • **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. Emphasize maturation of 3-dimensional geophysical models for improved event location and yield determination and technologies for deployable radionuclide analysis.	**157,650**
FY 2014-FY 2017	• **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 GBDs for GPS III at a rate to match Air Force need, 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	**676,676**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	capabilities. • **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. Emphasize the incorporation of knowledge from NCNS source physics experiments and other field and laboratory test campaigns into methods to improve event discrimination.	

Domestic Uranium Enrichment RD&D
Overview

Domestic uranium enrichment RD&D supports increased understanding of uranium enrichment technologies for enhanced efficiency. The project is designed to focus on meeting the following performance objectives: overall plant availability; consistency in manufacturing; material stress; and redundancy and resiliency in plant support systems.

Sequence



Benefits

- Domestic uranium enrichment RD&D supports having a domestic enrichment capability, which has the following benefits:
- Allows the United States to discourage the unnecessary spread of enrichment technology by contributing directly to sustained confidence in the international commercial enrichment market.
- Provides the U.S. an unencumbered source of enriched uranium, critical in the near-term for the national security tritium production mission.
- Provides a U.S. capability to enrich uranium to make fuel, critical in the long-term for meeting demand for defense-related research reactors and for naval nuclear propulsion reactors.
- Allows the U.S. to better detect, deter, and assess potential proliferation of new uranium enrichment programs around the world.
- Helps preserve the technical knowledge base and the supply chain needed to support uranium enrichment capabilities needed by the USG for the foreseeable future.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• No funding requested.	**0**
FY 2012	• No funding requested.	**0**
FY 2013	• Domestic uranium enrichment RD&D supports a domestic uranium enrichment capability that will allow us to better assess potential proliferation of new enrichment programs around the world; maintain a domestic supplier that can enrich uranium for the USG without peaceful use restrictions; and maintain global leadership in the effort to minimize the excessive spread of enrichment technology. The project will focus on meeting the following performance objectives: plant availability; consistency in manufacturing; material stress; and redundancy and resilience in plant support systems.	**150,000**
FY 2014-FY 2017	• No funding requested.	**0**

Capital Operating Expenses and Construction Summary
Capital Operating Expenses[a]

(dollars in thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Capital Operating Expenses			
General Plant Projects	0	0	0
Capital Equipment	31,877	32,578	33,295
Total, Capital Operating Expenses	**31,877**	**32,578**	**33,295**

Outyear Capital Operating Expenses

(dollars in thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request
Capital Operating Expenses				
General Plant Projects	0	0	0	0
Capital Equipment	34,027	34,776	35,541	36,323
Total, Capital Operating Expenses	**34,027**	**34,776**	**35,541**	**36,323**

[a] Funds are appropriated for Operations and Maintenance, which includes operating expenses, capital equipment and general plant projects. The program no longer budgets separately for capital equipment and general plant projects. Funding shown reflects estimates based on actual FY 2011 obligations.

Nonproliferation and International Security
Funding Profile by Subprogram and Activity[a]

(Dollars in Thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Nonproliferation and International Security			
Dismantlement and Transparency	49,207	0	0
Global Security Engagement and Cooperation	47,289	0	0
International Regimes and Agreements	39,824	0	0
Treaties and Agreements	11,174	0	0
Nuclear Safeguards and Security	0	54,897	54,723
Nuclear Controls	0	47,444	45,420
Nuclear Verification	0	39,969	40,566
Nonproliferation Policy	0	11,284	9,410
Total, Nonproliferaiton and International Security	**147,494**	**153,594**	**150,119**

Out-Year Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request
Nonproliferation and International Security				
Dismantlement and Transparency	0	0	0	0
Global Security Engagement and Cooperation	0	0	0	0
International Regimes and Agreements	0	0	0	0
Treaties and Agreements	0	0	0	0
Nuclear Safeguards and Security	56,999	60,902	63,326	64,701
Nuclear Controls	47,309	50,549	52,560	53,701
Nuclear Verification	42,253	45,147	46,943	47,962
Nonproliferation Policy	9,802	10,472	10,889	11,126
Total, Nonproliferaiton and International Security	**156,363**	**167,070**	**173,718**	**177,490**

[a] The Nonproliferation and International Security Program implemented a budget structure change starting in FY 2012. The structure change created a more efficient and clearer program organization with activities aligned along functional lines that reflect U.S. nonproliferation priorities and initiatives. The new structure depicts more clearly the alignment of people, technology, and resources to meet and implement nuclear nonproliferation objectives.

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
Consolidated Appropriations Act, 2012 (P.L. 112-74)
National Defense Authorization Act for FY 2012 (P.L. 112-81)

Overview

The Nonproliferation and International Security (NIS) program directly contributes to meeting the Secretarial goal of "Securing our Nation," and plays a critical role in meeting the following objectives as detailed in the Department of Energy (DOE) Strategic Plan: enhance nuclear security through defense, nonproliferation, and environmental efforts; reduce global nuclear dangers; enhance nonproliferation efforts and the security of nuclear materials; and support the President's arms control and nonproliferation agendas. NIS supports National Nuclear Security Administration (NNSA) efforts to prevent and counter the proliferation or use of weapons of mass destruction (WMD), including materials, technology, and expertise, by state and non-state actors. NIS focuses on strengthening the nonproliferation regime in order to reduce proliferation and terrorism risks by applying its unique expertise to safeguard nuclear material and strengthen its physical security; control the spread of WMD-related material, equipment, technology, and expertise; verify nuclear reductions and compliance with nonproliferation treaties and agreements; and develop and implement cross-cutting DOE/NNSA nonproliferation and arms control policy. NIS pursues these objectives through four programs: (1) Nuclear Safeguards and Security; (2) Nuclear Controls; (3) Nuclear Verification; and (4) Nonproliferation Policy.

Given the continuing pursuit of nuclear weapons by terrorists and states of concern, NIS must overcome a number of formidable challenges including, but not limited to: maintaining support for international nonproliferation and arms control regimes; strengthening the physical protection of nuclear materials; assuring the robustness of the safeguards human capital base; and keeping pace with the development and diffusion of proliferation relevant technologies and expertise.

Program Accomplishments and Milestones

In the prior appropriation year, NIS programs accomplished a number of significant milestones.

The Nuclear Safeguards and Security subprogram accomplishments include: (1) Led U.S. Government and international efforts to revise international guidelines on the physical protection of nuclear material and nuclear facilities (International Atomic Energy Agency INFCIRC/225/Rev.5); (2) Provided technical support to Nuclear Security Centers of Excellence in South Korea and Japan, fulfilling two Nuclear Security Summit commitments; (3) Working with industry and international partners, developed recommendations to the IAEA for the development of guidance documents for Safeguards-by-Design at four facility types; (4) Delivered five safeguards technologies to international partners for use in international safeguards systems; and (5) Trained over 400 foreign nationals on safeguards methods, practices, and technologies and funded over 100 interns and post-doctoral candidates to work on safeguards issues within the DOE complex.

The Nuclear Controls subprogram accomplishments include: (1) Initiated, in coordination with other DOE/NNSA offices, a comprehensive nuclear forensics engagement program, including projects with nine partners that emphasize international capacity-building and information-sharing to improve attribution and responses to counter illicit nuclear trafficking, directly supporting the Nuclear Security Summit Work Plan and advancing the nuclear security goals of the Global Initiative to Combat Nuclear Terrorism; (2) Conducted 7,600 statutorily mandated reviews of U.S. export license applications, DOE projects with foreign nationals, and nuclear software code requests in order to control the spread of WMD-related material, equipment, technology, and expertise; (3) Trained over 2,500 frontline enforcement officers, licensing officials, and manufacturers in preventing proliferators from acquiring WMD-sensitive goods for a cumulative total of over 15,000 personnel trained since 9/11; and (4) Worked with regional and multilateral organizations to promote controls on WMD-related commodities, including regional multi-country events in East and West Africa, as well as Northern and Southeast Europe.

The Nuclear Verification subprogram accomplishments include: (1) Represented NNSA throughout the New START ratification process and since its entry-into-force, including through: support for U.S. implementation of the Treaty; participation during the Treaty's Bilateral Consultative Commission; and support for the 30-day technical evaluation of Russian radiation detection equipment and interagency coordination regarding the acceptance of this equipment for use during Type One

inspections in the United States; (2) Conducted 24 Special Monitoring Visits to Russian highly enriched uranium (HEU) processing facilities under the U.S.-Russia HEU Transparency Program, and monitored the downblending of 30 metric tons of Russian weapons-origin HEU under the U.S.-Russia HEU Transparency Program; (3) Improved the Uranium Sourcing database tool by delivering a more efficient and robust version of the statistical query tool (iDAVE2) and analyzing an additional 165 uranium samples; (4) Transferred the reactor core sampling capability from the United Kingdom to the United States, established appropriate storage, maintenance, and training facilities for the tool, and trained and certified a U.S. team that is now ready for deployment; and (5) Further developed and maintained existing capabilities to verify declarations about key elements of the plutonium nuclear fuel cycle in countries of concern.

The Nonproliferation Policy subprogram accomplishments include: (1) Strengthened Nuclear Suppliers Group (NSG) guidelines restricting the transfer of sensitive enrichment and reprocessing technology; (2) Supported U.S. Government efforts to secure a ten-year extension of the mandate of the 1540 Committee, an integral part of the international framework to prevent the proliferation of nuclear, chemical, and biological weapons and their means of delivery and helped extend the G8 Global Partnership against the Spread of Weapons and Materials of Mass Destruction; (3) Facilitated entry into force of the U.S.-Russia Agreement for Cooperation in the Field of Peaceful Uses of Nuclear Energy (123 Agreement); and (4) Advanced several initiatives to assure the supply of nuclear fuel, including achieving IAEA Board of Governors approval of the IAEA low enriched uranium (LEU) Reserve, to which the United States contributed $50 million, and the inauguration of the American Assured Fuel Supply, a 230 MT reserve of LEU.

In addition to these technical accomplishments, NIS implemented a new strategic plan and accompanying management reorganization. The reorganization enabled NIS to better: align its program priorities and financial management requirements; attract, develop, and retain qualified personnel; support sound organizational and management practices; and improve communication with internal and external stakeholders.

Explanation of Changes

The request for Nonproliferation and International Security is a 2.3% percent decrease from the FY 2012 appropriation. The FY 2013 request decreases the levels for Nuclear Safeguards and Security (-$.174M), Nuclear Controls (-$2.024M), and Nonproliferation Policy (-$1.874M), and increases funding for Nuclear Verification (+$.597M).

Program Planning and Management

NIS's targets and goals are aligned to DOE's Strategic Goal 3: Secure Our Nation. NIS measures are compiled and provided in the FY2013 Annual Performance Plan (APP) Report. The GPRA Unit Program sections of the APP identify the corporate performance measures that the programs use to track progress toward outcomes. In order to accomplish its mission to prevent and counter the proliferation or use of weapons of mass destruction (WMD), including materials, technology, and expertise, by state and non-state actors, NIS: has institutionalized short and long-term forecasting/planning efforts to enable real time responses to critical emerging threats to national security; maintains professional, multi-disciplinary staff, with robust skill sets, to respond to new security priorities and emergent national security challenges; fully exploits the world-class expertise of our National Laboratories to increase our design, testing, and fielding capabilities for safeguards, detection, and verification technologies; and partners with U.S. agencies, international organizations, and non-governmental organizations to further our nonproliferation goals, e.g., Departments of State and Defense, and the International Atomic Energy Agency. In addition, NIS validates its work through technical and financial program reviews and applies rigorous project management throughout its project portfolio to ensure the most effective and efficient use of taxpayer dollars.

Strategic Management

The persistent pursuit of nuclear weapons by terrorists and states of concern makes it clear that our nonproliferation programs are urgently required, and must proceed on an accelerated basis. In order to accomplish its mission to prevent and counter the proliferation or use of weapons of mass destruction (WMD), including materials, technology, and expertise, by state and non-state actors, NIS will:

- Institutionalize short and long-term forecasting/planning efforts to enable real time responses to critical emerging threats to national security;
- Maintain professional, multi-disciplinary staff, with robust skill sets, to respond to new security priorities and emergent national security challenges;

- Fully exploit the world-class expertise of our National Laboratories to increase our design, testing, and fielding capabilities for safeguards, detection, and verification technologies; and,
- Partner with U.S. agencies, international organizations, and non-governmental organizations to further our nonproliferation goals, e.g., Departments of State, Defense, Homeland Security, Justice, Treasury, and Commerce.

A number of external factors outside NIS's direct control may strongly impact the overall achievement of the program's strategic goal. These external factors include the following:

- Rapid global change, technological advancement, and political unpredictability result in continuous emergence of nonproliferation "wild cards";
- The willingness of foreign governments'/partners' to cooperate and their ability to absorb engagement;
- Achieving consensus in multilateral frameworks; and
- Expanding civil nuclear power without compromising nonproliferation goals.

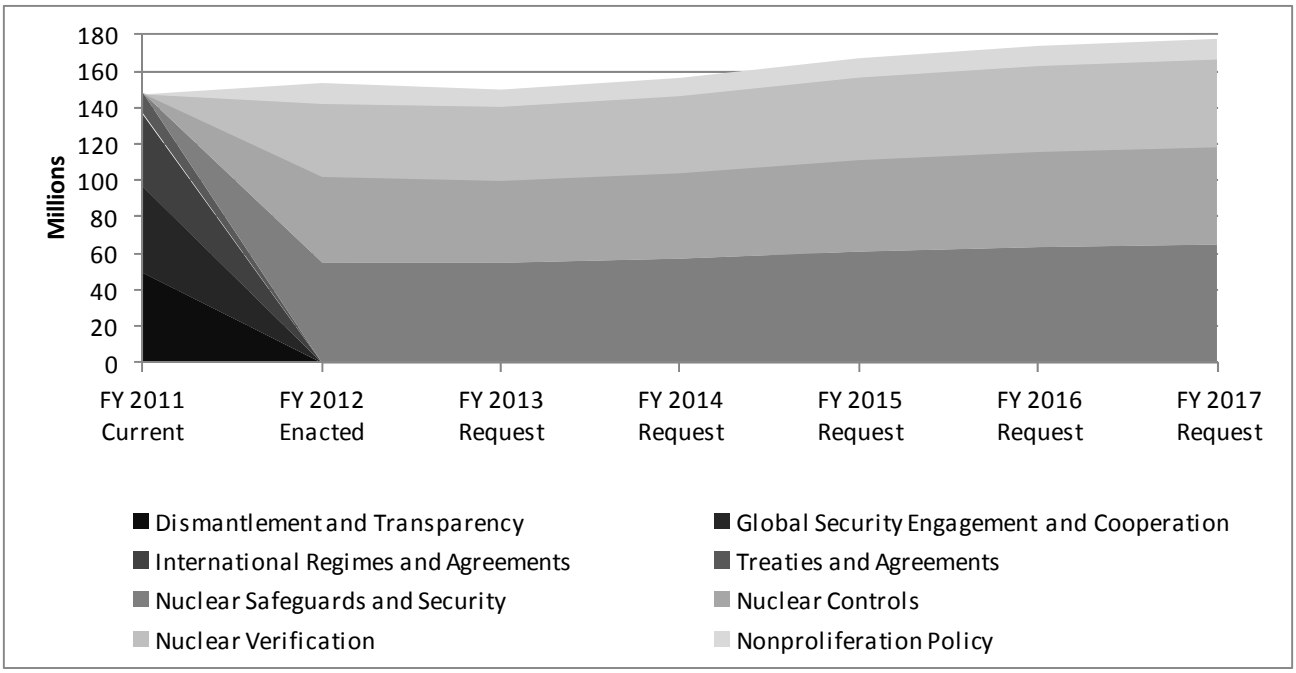
Major Outyear Priorities and Assumptions

NIS outyear funding profile totals $674,641 (FY 2014 – FY 2017). NIS will place increasing emphasis on the Next Generation Safeguards Initiative (NGSI), a subprogram designed to strengthen IAEA safeguards and revitalize the U.S. technical and human capital base that supports them. NGSI complements related NIS priorities to reduce proliferation risks associated with growing international interest in the use of nuclear power. NIS also will support the applied development and evaluation of technologies to support U.S. arms control and nonproliferation initiatives separate from its work associated with NGSI. This will include advanced radiation measurement technologies that could be applied under the New START Treaty as well as other technologies for treaty verification, transparency, and nonproliferation purposes. Finally, the NIS funding profile also will provide for activities that prevent and counter WMD proliferation, including continued support for U.S. efforts to address proliferation by Iran, North Korea, and proliferation networks, implement nuclear arms reduction and associated agreements, strengthen international nonproliferation agreements and standards, implement statutory export control and safeguards requirements, encourage global adherence to and implementation of international nonproliferation requirements, and support high-priority diplomatic initiatives.

Program Goals and Funding

NIS directly contributes to meeting the Secretarial goal of "Securing our Nation," and plays a critical role in meeting the following objectives as detailed in the Department of Energy (DOE) Strategic Plan: enhance nuclear security through defense, nonproliferation, and environmental efforts; reduce global nuclear dangers; enhance nonproliferation efforts and the security of nuclear materials; and support the President's arms control and nonproliferation agendas. NIS will focus on strengthening the nonproliferation regime in order to reduce proliferation and terrorism risks by developing and applying its unique expertise to safeguard nuclear material and strengthen its physical security; control the spread of WMD-related material, equipment, technology, and expertise; verify nuclear reductions and compliance with nonproliferation treaties and agreements; and develop and implement cross-cutting DOE/NNSA nonproliferation and arms control policy.

Figure 1: Relative Out-Year Funding Priorities in Defense Nuclear Nonproliferation - Nonproliferation and International Security



Explanation of Funding and/or Program Changes

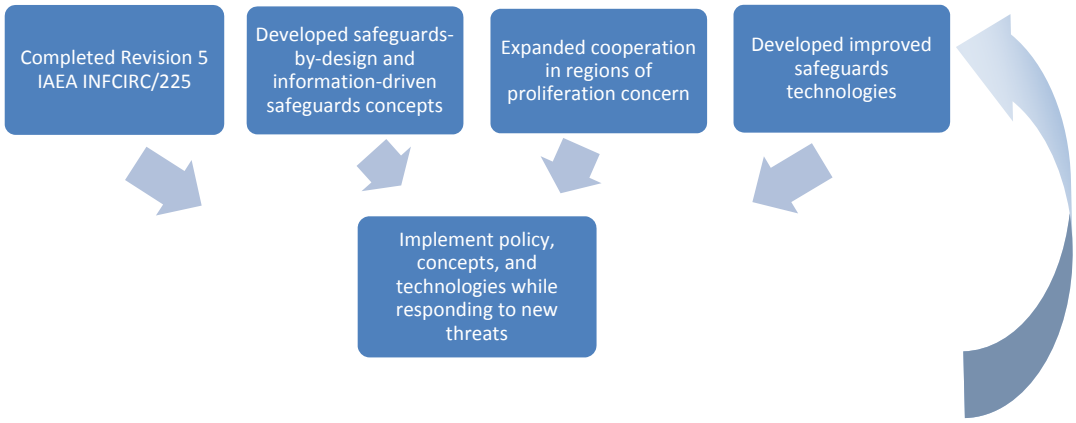
	(Dollars in Thousands)		
	FY 2012 Enacted	FY 2013 Request	FY 2013 vs. FY 2012
Nonproliferation and International Security			
Nuclear Safeguards and Security	**54,897**	**54,723**	**-174**
The funding decrease is due to the maturation of certain NGSI-sponsored safeguards technology development projects which will allow a reduction in testing and evaluation costs.			
Nuclear Controls	**47,444**	**45,420**	**-2,024**
The decrease is due to the deceleration of the pace of engagement for foreign partner export control outreach and training efforts in order to accommodate funding in other higher priority areas.			
Nuclear Verification	**39,969**	**40,566**	**+597**
The Increase in funding will allow for development of additional advanced technology for treaty verification and monitoring.			
Nonproliferation Policy	**11,284**	**9,410**	**-1,874**
The decrease is due to the elimination of lower priority policy studies/analyses undertaken by National Laboratories, non-governmental organizations, or institutes of higher learning in support of the Department's implementation of high level nonproliferation initiatives and in response to emerging and immediate nonproliferation and counter-proliferation security issues including the global expansion of nuclear energy and evolution of the nuclear fuel cycle.			
Total Funding Change, Nonproliferation and International Security	**153,594**	**150,119**	**-3,475**

Nuclear Safeguards and Security
Overview

The Nuclear Safeguards and Security (NSS) subprogram strengthens the nuclear nonproliferation and nuclear 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 physical protection and safeguards norms and best practices, and is responsible for the implementation of U.S. Additional Protocol (AP) and Voluntary Offer Agreement (VOA) Safeguards activities at DOE/NNSA sites and facilities.

This subprogram consists of four activities: Safeguards Policy; Safeguards Engagement; Safeguards Technology Development; and International Nuclear Security.

Sequence



Benefits

- Through the Next Generation Safeguards Initiative (NGSI) works to strengthen the international safeguards system, which provides assurances to the international community that states are not diverting nuclear material from peaceful activities to nuclear weapons programs.
- Builds international political capital for current and future nonproliferation and arms control efforts by implementing U.S. Additional Protocol and Voluntary Offer Agreement Safeguards activities at DOE/NNSA facilities
- Reduces non-state actor proliferation by ensuring the security of U.S.-obligated nuclear material at foreign facilities and engaging international partners to strengthen the physical protection of all nuclear material and facilities against theft and sabotage.

Funding and Activity Schedule[a]

Fiscal Year	Activity	Funding (Dollars in Thousands)
Nuclear Safeguards and Security		
FY 2011		**52,671**
FY 2012		**54,897**
FY 2013		**54,723**
FY 2014-FY 2017		**245,928**
Safeguards Policy		
FY 2011	• Initiated program to develop safeguards concepts and approaches at nuclear fuel cycle facilities, including gas centrifuge enrichment plants and developed concepts and policy approaches to support the IAEA's transition to information-driven safeguards. • Continued to develop internship programs, university short-courses, and a university-level safeguards textbook in support of human capital development and train 110 students through summer internships.	**15,915**
FY 2012	• Investigate new safeguards concepts and approaches including safeguards at gas centrifuge enrichment plants and develop safeguards by design to improve IAEA efficiency and effectiveness including supporting the IAEA's transition to information-driven safeguards. • Support human capital development efforts to attract, educate, and train new safeguards experts by engaging approximately 150 students and young professionals through Lab internships, short courses, university courses, and graduate and post-doctoral fellowships.	**15,750**
FY 2013	• Develop and refine new safeguards concepts and approaches including safeguards at gas centrifuge enrichment plants and refine safeguards by design to improve IAEA efficiency and effectiveness including supporting the IAEA's implementation of information-driven safeguards. • Support human capital development efforts to attract, educate, and train new safeguards experts by engaging approximately 125 students and young professionals through Lab internships, university courses, and graduate and post-doctoral fellowships, and retain expertise at the National Laboratories and IAEA.	**15,596**
FY 2014-FY 2017	• Move safeguards by design from concept to standard practice and deploy gas centrifuge enrichment plant safeguards approaches into operating facilities. • Continue internships and fellowships to provide a pipeline of qualified candidates to the National Laboratories and the IAEA for safeguards staffing and retention.	**70,090**
Safeguards Engagement		
FY 2011	• Developed an approach, including with international partners, to evaluate safeguards issues for electrochemical processing. • Cooperated with countries in the Middle East and North Africa that have credible plans for nuclear power development to establish infrastructures that emphasize safety, security, and safeguards. • Evaluated management practices at uranium ore concentrate (UOC) production facilities.	**17,444**

[a] All FY 2011 numbers provided in this chart are comparable to the new structure implemented in FY 2012.

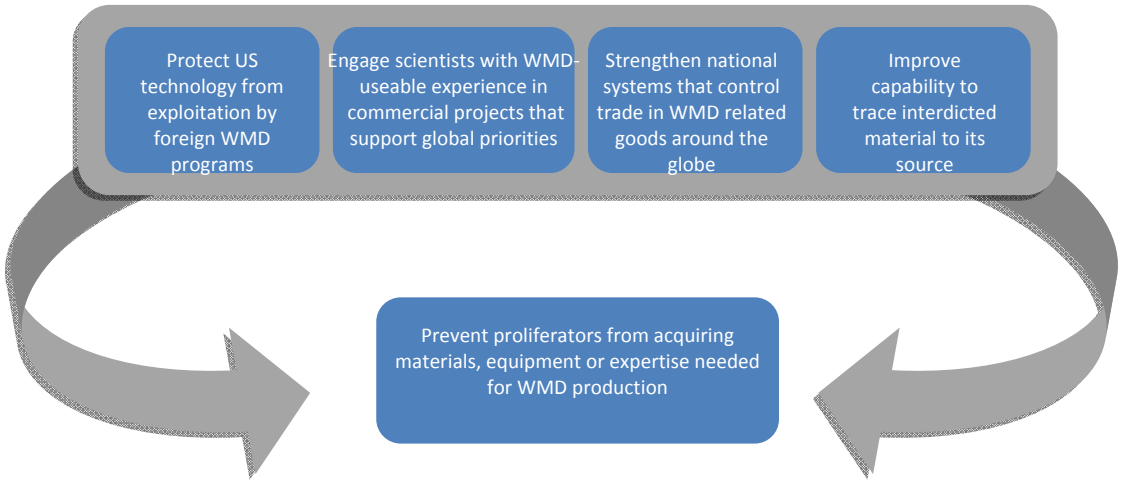
Fiscal Year	Activity	Funding (Dollars in Thousands)
Nuclear Safeguards and Security		
FY 2012	• Collaborate with international partners to identify and analyze safeguards issues related to electrochemical processing. • Expand cooperation with countries in the Middle East and Southeast Asia with credible plans for nuclear power development to build technical capacities for implementing IAEA safeguards. • Establish internationally-accepted practices to strengthen the management and controls of UOC production facilities.	**17,181**
FY 2013	• Collaborate with international partners to conduct lab-scale feasibility test of electrochemical processing. • Continue to strengthen the capacity of international partners to implement IAEA safeguards effectively. • Initiate bilateral cooperation with select uranium mining states to strengthen the management and control of UOC production facilities.	**16,310**
FY 2014-FY 2017	• Develop an integrated safeguards concept for electrochemical processing based on R&D conducted with international partners. • Identify and engage new international partners to ensure effective implementation of IAEA safeguards. • Institutionalize management and control practices at UOC production facilities in select uranium mining states.	**73,298**
Safeguards Technology Development		
FY 2011	• Modeled fourteen non-destructive assay techniques for determining plutonium in spent fuel. • Delivered DOE-developed safeguards technologies to international partners or commercial entities for deployment in safeguards systems worldwide. • Surveyed DOE Complex for safeguards technical and infrastructure needs. • Evaluated prototype commercial neutron detectors for potential use as alternatives to He-3 for safeguards systems.	**15,600**
FY 2012	• Initiate production of new non-destructive assay instruments for measurements of plutonium in spent fuel. • Develop new safeguards technologies for nuclear fuel cycle facilities. • Initiate improvements in safeguards technical and infrastructure capabilities across the nuclear security enterprise. • Address shortfall of He-3 for safeguards uses by building a neutron coincidence counter using commercially available alternative detectors.	**15,472**
FY 2013	• Test spent fuel non-destructive assay instruments with domestic or foreign partners, and refine capabilities for future systems. • Demonstrate new safeguards technologies for nuclear fuel cycle facilities with domestic and foreign partners. • Continue ongoing improvements to safeguards technical and infrastructure capabilities across the nuclear security enterprise. • Continue to address shortfall of He-3 for safeguards by testing commercial detector alternatives in safeguards instruments.	**15,277**
FY 2014-FY 2017	• Deploy spent fuel non-destructive assay instruments with domestic or foreign partners. • Deploy new safeguards technologies for nuclear fuel cycle facilities with domestic and foreign partners.	**68,656**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Nuclear Safeguards and Security		
	• Address additional needs as they arise in safeguards technical and infrastructure capabilities across the nuclear security enterprise. • Continue to address shortfall of He-3 for safeguards by deploying commercial detector alternatives in safeguards instruments.	
International Nuclear Security		
FY 2011	• Completed IAEA INFCIRC/225/Revision 5 (Nuclear Security Recommendations on Physical Protection of Nuclear Material and Nuclear Facilities) and developed training program to implement new provisions. • Provided technical support to key international partners to fulfill 2010 Nuclear Security Summit commitments. • Conducted seven bilateral physical protection assessments at facilities overseas containing U.S.-obligated nuclear material, in support of the President's four-year pledge to secure most vulnerable nuclear material worldwide.	**3,712**
FY 2012	• Conduct training on the new provisions of IAEA INFCIRC/225/Revision 5 and work with international partners to ensure that applied physical protection measures are consistent with internationally agreed-upon physical protection standards. • Provide technical support to international partners, including centers of excellence, to fulfill 2010 Nuclear Security Summit commitments and support the 2012 Nuclear Security Summit. • Conduct six bilateral physical protection assessments at facilities overseas containing U.S.-obligated nuclear material, in support of the President's 4-year pledge to secure most vulnerable nuclear material worldwide.	**6,494**
FY 2013	• Increase the number of partnerships or expand collaboration with existing international partners and the IAEA to ensure that states are implementing nuclear security measures in accordance with the recent fifth revision of the IAEA guidance document, INFCIRC/225. • Continue providing technical support to international partners to help them fulfill their 2010 and 2012 Nuclear Security Summit commitments. • Conduct six to eight bilateral physical protection assessments at facilities overseas containing U.S.-obligated nuclear material, in accordance with existing statutory mandates and in support of the President's 4-year pledge to secure most vulnerable nuclear material worldwide.	**7,540**
FY 2014-FY 2017	• Continue engaging international partners to help them implement the nuclear security standards in INFCIRC/225/Revision 5. • Continue providing technical support to international partners to help them fulfill their 2012 Nuclear Security Summit commitments. • Maintain an expanded schedule of bilateral assessments, to ensure security of U.S.-obligated nuclear material at foreign facilities.	**33,884**

Nuclear Controls
Overview

The Nuclear Controls (NC) subprogram builds global capacity to prevent the spread of WMD materials, knowledge and expertise by: strengthening foreign partner WMD export control systems at the governmental and industry level; providing technical support to enhance U.S. Government capacity to detect and prevent illicit WMD-related commodity technology transfers to foreign programs of concern; mitigating the risk of expertise proliferation through science & technology (S&T) collaboration and partnerships; and supporting regime compliance through regional technical collaborations in priority areas, such as nonproliferation nuclear forensics and seismic monitoring. This subprogram consists of the following engagement activities: International Nonproliferation Export Control Program (INECP); Global Security through Science Partnerships (GSSP)[a] (formerly known as Global Initiatives for Proliferation Prevention (GIPP)); Confidence Building Measures (CBM); Export Control Review and Compliance; and Weapons of Mass Destruction Interdiction.

Sequence



Benefits

- Promotes global security by engaging domestic and international partners and scientific communities to address shared security concerns in critical areas such as nonproliferation, nuclear forensics, and seismic monitoring.
- Raises awareness of the nonproliferation regime and best practices, strengthen overall security within volatile regions and create partnerships that can lead to international stability.
- Directly counters proliferation acquisition networks by reviewing transfers of U.S. goods to screen for diversion risk and promoting adoption of U.S. best practices and multilateral trade control norms around the world.
- Reduces the risk of expertise migration to states of proliferation concern and terrorists.

[a] In 2013 a new approach known as Global Security through Science Partnerships (GSSP) will replace the Global Initiatives for Proliferation Prevention (GIPP) model to refocus efforts geographically, leverage complementary NNSA and U.S. Government programs, and utilize new engagement methods that build partnerships and collective responsibility.

Funding and Activity Schedule[a]

Fiscal Year	Activity	Funding (Dollars in Thousands)
Nuclear Controls		
FY 2011		**45,960**
FY 2012		**47,444**
FY 2013		**45,420**
FY 2014-FY 2017		**204,119**
International Nonproliferation Export Control		
FY 2011	• **U.S. Enforcement:** Provided specialized, commodity-specific information to U.S. law enforcement agencies with the authority to investigate export control violations, including DHS/Custom and Border Protection, DHS/Immigration and Custom Enforcement, FBI, and others. • **Foreign Partner Engagement:** Continued to focus on industry outreach and Commodity Identification Training, which teaches customs agents and other officials to recognize WMD-sensitive goods; and capitalized on regional outreach opportunities by leveraging INECP-trained experts in European Union, Asian and FSU regional engagements, with first-time regional activities in Africa.	**14,132**
FY 2012	• **U.S. Enforcement:** Conduct investigations-based training and consultations for Department of Homeland Security/Immigration and Customs Enforcement's (DHS/ICE) newly established Counterproliferation Centers; conduct Commodity Identification Training (CIT) courses for DHS/Customs and Border Protection's (CBP); conduct training and provide support to CBP's National Targeting Center; and conduct training at major U.S. ports that combines localized targeting support with CIT for CBP inspectors and ICE investigators. • **Foreign Partner Engagement:** Expand cooperation to include new partners on CIT in Africa and the Middle East; and launch and sustain a variety of regional technical expert working groups on strategic commodity controls to supplement bilateral engagements in South East Asia, the Western Hemisphere, the European Union, and the former Soviet Union.	**14,106**
FY 2013	• **U.S. Enforcement:** Institutionalize training at the U.S. Customs and Border Protection's (CBP) Outbound Advanced Academy while maintaining training and technical projects at a level similar to FY 2012. • **Foreign Partner Engagement:** Deploy new or improved technical tools, and build upon knowledge generated by INECP at the IAEA and the World Customs Organization, and upon the regional/multilateral expertise generated by INECP within several technical expert working groups initiated in FY 2012 to improve national export control implementation capacities.	**12,869**
FY 2014-FY 2017	• **U.S. Enforcement:** Conduct training, including CIT and provide technical support at a similar overall level in the out-years, with a focus on WMD-related commodities and knowledge of known proliferation significance. • **Foreign Partner Engagement:** Reduce work in the European Union (EU) due to expected successes, while working with the EU and others with new (as of FY 2011-2012) partners to further these countries' export control implementation capacities in order to increase the probability of detecting illicit transfers and in anticipation of significant legitimate nuclear-related transfers that will increase proliferation risks.	**57,833**

[a] All FY 2011 numbers provided in this chart are comparable to the new structure implemented in FY 2012.

Fiscal Year	Activity	Funding (Dollars in Thousands)
Nuclear Controls		
Global Security through Science Partnerships (formerly Global Initiatives for Proliferation Prevention)		
FY 2011	• Engaged 1,650 former WMD scientists, technicians and engineers from over 80 facilities in the former Soviet Union (FSU) and Iraq on R&D projects to support global priorities including national security, energy efficiency, and the advancement of medical science. • Continued to engage high priority institutes in line with an interagency risk assessment. • In the FSU, new work focused on technologies that support global security and nonproliferation, and emphasized cost-share activities. • In Iraq, engagement remained steady based on the assessed risk.	**17,623**
FY 2012	• In 2010, NNSA commissioned an assessment of the Expertise Proliferation Risk which determined that there is a significant WMD expertise proliferation threat that no longer is limited to Russia and the FSU or to expertise acquired by direct involvement in weapons programs. Therefore, in FY 2013, NNSA is changing its approach to expertise proliferation and initiating a global effort with a new methodology to address the expertise proliferation threat. In Russia, existing projects utilizing the old model are being closed out by the end FY 2012. GIPP is increasing the level of activity in the rest of the former Soviet Union and continuing activities based on assessed risk in Iraq.	**14,972**
FY 2013	• Based on the 2010 Expertise Proliferation Risk assessment and building on existing GIPP capabilities, a new approach will replace the GIPP model to refocus efforts geographically, leverage complementary NNSA and U.S. Government programs, and utilize new engagement methods that build partnerships and collective responsibility for scientific best practices. The transformed activity, entitled Global Security through Science Partnerships (GSSP), will be based on regional and country-based threat assessments that quantify the relative risk of proliferation facing foreign institutes and facilities. The activity toolbox will include: (1) innovative science and technology partnerships, including public-private partnerships building on GIPP's industry model; (2) nonproliferation education programs to establish or enhance security cultures; (3) programs to establish a shared code of ethics and responsibility in the global scientific community; and (4) facilitation of a global dialogue on State responsibility and exchange of best practices. Partnership and shared financial responsibility will be required for any new projects in Russia and other economically stable countries.	**15,660**
FY 2014-FY 2017	• The transformed activity, GSSP, will build on its initial efforts focused on mitigating the risk of expertise proliferation, expanding existing engagements, and initiating pilot efforts with 1-2 new countries according to assessed risk and in line with the program's whole-of-government approach. Partnership and shared financial responsibility will be required for any new projects in Russia and other economically stable countries. Project cost-share will be pursued in all countries.	**70,376**
Confidence Building Measures		
FY 2011	• Initiated/expanded cooperation with regional and bilateral partners to promote international capacity-building activities in nuclear forensics. • Supported seismology collaborations in the Middle East to promote understanding of the Comprehensive Nuclear-Test-Ban Treaty (CTBT) and to strengthen the International Monitoring System. • Promoted regional technical cooperation in nonproliferation through the Middle East Scientific Institute for Security (MESIS) in Amman, Jordan.	**1,551**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Nuclear Controls		
FY 2012	• Expand cooperation in nuclear forensics with multiple partners on bilateral capacity-building and research and development activities as well as multilateral training. • Sponsor bilateral and multilateral workshops and training seminars in seismic monitoring to promote data-sharing and capacity-building across countries in the Middle East, to strengthen in-country technical capabilities to implement the CTBT. • Restructure efforts with the MESIS, to facilitate its transition into a fully self-sufficient and financially independent partner in the Middle East.	**2,751**
FY 2013	• Build on multilateral and regional capacity-building efforts to strengthen core nuclear forensics capabilities in priority areas in advance of the 2014 Nuclear Security Summit. • Continue to partner with the Comprehensive Nuclear-Test-Ban Treaty Organization to strengthen the technical capabilities of Signatory States to implement the treaty and to improve the International Monitoring System. • Utilize MESIS to advance NIS, NNSA, and U.S. Government nonproliferation objectives in the Middle East, and further establish MESIS as a trusted and valuable nonproliferation asset for the U.S. Government.	**2,432**
FY 2014-FY 2017	• Continue to engage advanced fuel cycle states in research and development collaborations to harmonize nuclear forensic analytical capabilities and to further support international efforts to strengthen core nuclear forensic capabilities in key regions. • Build on outreach activities in South and Southeast Asia, where seismic monitoring cooperation can serve to advance both nonproliferation objectives as well as regional hazard mitigation interests. • Complete restructuring efforts with the MESIS, resulting in a fully self-sufficient and financially independent partner in the Middle East that can play a more active role in advancing DOE/NNSA and U.S. Government nonproliferation priorities in the region in a cost-effective manner.	**10,929**
Export Control Review and Compliance		
FY 2011	• Reviewed statutorily mandated U.S. export license applications for dual-use items and munitions that could have uses in the development or production of WMD and their delivery systems, and provided technical guidance to DOC, DOD and other U.S. agencies. • Provided export control and nonproliferation guidance to U.S. industry and DOE activities to help ensure compliance across the DOE Complex and its contractors. • Performed technical and nonproliferation reviews of DOE sensitive software code requests and DOE programs/projects involving foreign nationals. • Served as technical advisors for multilateral control list review, and for negotiations in meetings of the Missile Technology Control Regime (MTCR) and the Australia Group (AG) (chem/bio WMD) international export control regime, and the Wassenaar Arrangement (WA) on High Performance Computers. • Operated secure internet-based systems for the AG and the Nuclear Suppliers Group (NSG) that allow AG and NSG members to share information on license denials. Performed technical reviews of suspicious shipments for proliferation risk. • Provided access to the Proliferation Trade Control Directory (PTCD) to aid export enforcement officials in inspection and investigation of export controlled shipments.	**9,818**
FY 2012	• Continue implementing the statutory interagency export licensing process for WMD related dual-use and certain munitions items, nuclear software codes, and	**12,360**

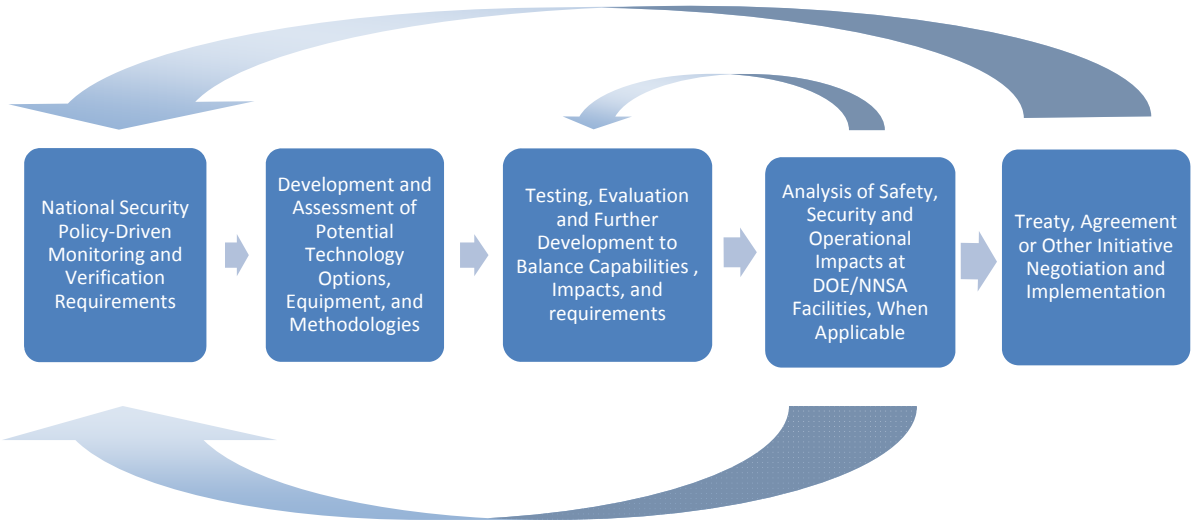
Fiscal Year	Activity	Funding (Dollars in Thousands)
Nuclear Controls		
	international projects. This includes maintaining multilateral control regime information sharing networks for the NSG and the AG, and specialized computer directories and data bases. • Continue serving a technical advisory role in supporting the State Department and interagency in the multilateral control regimes, including the AG, the MTCR and the WA. This ensures evolving export control policy adequately reflects the latest technology advancements, and export control initiatives advance the capacity of the U.S. Government to promote and achieve strengthened multilateral control norms. • Conduct outreach to the U.S. Government by providing seminars on nonproliferation policy issues, nuclear fuel cycle technology, and paths toward nuclear weapons capability. The demand for additional training has led to an expansion in the nuclear course content and the creation of missile and Export Controlled Information (ECI) seminars. • Deploy the Nonproliferation Policy Analysis and Interdiction Resource (NPAIR) system, allowing for enhanced efficiency and effectiveness of export control analysis that is conducted for all aspects of the activity area.	
FY 2013	• Continue to provide recommendations, guidance and technical support for statutory export control reviews. • Continue a technical advisory role in supporting the multilateral control regimes, including the NSG, AG, and the MTCR, to ensure evolving policy adequately reflects the latest technology. • Continue to provide nonproliferation seminars for U.S. Government, and work to develop training to enhance human capital capabilities in export control compliance within the DOE complex and for contractors. • Continue to enhance NPAIR deployment and utilization to conduct evaluations of export controlled items and nonproliferation issues.	**11,437**
FY 2014-FY 2017	• Continue to provide recommendations, guidance and technical support for statutory export control reviews. • Continue to provide support to multilateral control regimes with respect to state-of-the-art technology assessments, enabling the regimes to remain relevant and effective. • Continue to offer and refine the training courses to stay abreast with changing export controlled technologies and proliferation concerns. • Fully exploit the capabilities of NPAIR with analysis techniques and information holdings.	**51,399**
Weapons of Mass Destruction Interdiction		
FY 2011	• Through the WMD Interdiction activity, provided critical technical support, real-time "reach-back" capabilities, and policy guidance to U.S. interdiction groups via the Interdiction Technical Analysis Group (ITAG), including the Nuclear Interdiction Analysis Group (NIAG), Missile Technology Analysis Group (MTAG), and SHIELD; and supported the Proliferation Security Initiative and the implementation of U.S. nonproliferation sanctions. • Increased coverage of WMD technologies in the technical reference guides, enhanced DOE National Laboratory technical support to the U.S. interagency community, and provided assessments of WMD-related items, proliferation program choke-points, and international trade flows to determine interdiction opportunities.	**2,836**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Nuclear Controls		
FY 2012	• Continue the WMD Interdiction activity, which supports U.S. Government interdiction efforts through the Interdiction Technical Analysis Group (ITAG), an inter-laboratory technical team established under this activity area that provides critical technical support, real-time "reach-back" capabilities, and policy guidance to U.S. interdiction groups and activities and support for the Proliferation Security Initiative and the implementation of U.S. nonproliferation sanctions. The implementation of the NPAIR system allows for enhancements in the ITAG case processing and associated analysis.	**3,255**
FY 2013	• Enhance ITAG and DOE National Laboratory technical support to the U.S. interdiction groups. • Increase coverage of WMD technologies in the technical reference guides. • Continue to provide timely assessments of WMD-related items, proliferation program choke-points, and international trade flows to determine interdiction opportunities.	**3,022**
FY 2014-FY 2017	• The data resources developed under the NPAIR system and the experience gained from the implementation of the system will allow for continued enhancements to the ITAG support for U.S. Government interdiction efforts.	**13,582**

Nuclear Verification
Overview

The Nuclear Verification (NV) subprogram reduces or eliminates proliferation concerns by promoting transparent arms reductions, including negotiating, implementing and strengthening U.S. nonproliferation and arms control treaties and agreements, and developing the required verification technologies and approaches and associated transparency-monitoring tools. This subprogram is responsible for the following activities: U.S.-Russian Federation Plutonium Production Reactor Agreement (PPRA); U.S.-Russian Federation Highly Enriched Uranium (HEU) Purchase Agreement; the Chemical Weapons Convention (CWC); nuclear testing limitations; U.S.-Russian Federation New START Treaty, including participation in the consultative commission; future nonproliferation initiatives, including in countries of proliferation concern; ad hoc denuclearization and monitoring agreements; and activities to develop advanced verification equipment and technologies for the U.S. Government and in coordination with the IAEA. This subprogram will design and develop for use new verification tools, equipment, and methods for implementing arms control and nonproliferation treaties and agreements.

Sequence



Benefits

- Develops negotiating and ratification strategies and implementation capabilities for arms control and nonproliferation and develops associated agreements for monitoring and verification requirements.
- Develops technologies and equipment tailored for monitoring compliance with arms control and nonproliferation treaties and agreements and detecting potential clandestine weapons programs or illicit diversions of nuclear materials, and ensuring future initiatives best protect NNSA interests and activities.
- Provides the capability to perform at short notice the activities necessary for verifying and/or dismantling nuclear programs of concern to the U.S. Government and International partners.

Funding and Activity Schedule[a]

Fiscal Year	Activity	Funding (Dollars in Thousands)
Nuclear Verification		
FY 2011		**39,268**
FY 2012		**39,969**
FY 2013		**40,566**
FY 2014-FY 2017		**182,305**
Warhead Dismantlement and Fissile Material Transparency		
FY 2011	• Developed and assessed advanced technical concepts for warhead and fissile material transparency and verification including measurement capabilities for material verification and advanced tamper detection and equipment authentication, and through related collaborative initiatives with the United Kingdom. • Supported U.S. Government New START Treaty implementation activities, including evaluation of Russian radiation detection equipment for use during inspections in the United States. • Supported U.S. Government engagement on activities associated with the consideration of entry-into-force of the Comprehensive Nuclear-Test-Ban Treaty (CTBT), consistent with NNSA-specific considerations regarding operations, safety, and security across the NNSA Nuclear Security Enterprise. • Completed monitoring of stored plutonium oxide and shutdown Russian plutonium production reactors under the terms of the U.S.-Russia Plutonium Production Reactor Agreement (PPRA) to ensure accountability pending final disposition.	**15,311**
FY 2012	• Continue the development and assessment of advanced concepts for warhead and fissile material transparency and verification, including the design of authenticatable material measurement equipment, and the initiation of measurements on NNSA assets to enable consideration of potential future verification approaches. • Support New START implementation, including activities associated with the use of radiation detection equipment under the Treaty. • Support activities associated with the consideration of the potential entry-into-force of the CTBT, including exercises to further develop a potential monitoring and verification regime. Complete exercise activities with the United Kingdom relating to possible future warhead and material monitoring and verification approaches. • Conduct PPRA monitoring activities to ensure Russian plutonium oxide remains in secure storage and shutdown Russian plutonium production reactors remain in a non-operational status. Prepare for experts' familiarization visits to the last three shutdown Russian plutonium production reactors, in order to bring those reactors into the PPRA monitoring regime. • Complete accreditation activities for the Organization for the Prohibition of Chemical Weapons (OPCW) analysis laboratory at Lawrence Livermore National Laboratory (LLNL).	**16,012**
FY 2013	• Complete measurements of NNSA assets to support analysis of potential monitoring and verification initiatives, consistent with NNSA considerations regarding operations, safety and security. Complete the development of a fieldable nuclear materials identification system. • Continue to support New START implementation and activities associated with the consideration of the potential entry-into-force of the CTBT, including exercises to	**15,393**

[a] All FY 2011 numbers provided in this chart are comparable to the new structure implemented in FY 2012.

Fiscal Year	Activity	Funding (Dollars in Thousands)
Nuclear Verification		
	further develop the potential monitoring and verification regime. • Complete 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, including preparations for bringing the last three shutdown Russian plutonium production reactors into the PPRA monitoring regime. • Maintain accreditation of OPCW analysis laboratory at LLNL.	
FY 2014-FY 2017	• Continue to support implementation of the New START Treaty and U.S. consideration of potential future arms control initiatives, while supporting NNSA specific considerations regarding operations, safety and security across the NNSA Nuclear Security Enterprise. • Continue the development and analysis of advanced technologies and concepts for warhead and fissile material transparency and verification, including non-destructive assay of nuclear materials, information blinding techniques to protect sensitive information, and advanced item monitoring and tamper-indicating methods to provide continuity of knowledge over time while ensuring equipment and containers are not accessed. • Continue to pursue collaborative monitoring and verification initiatives with the United Kingdom and other partner countries to develop potential common approaches to verification challenges. • Continue to support strengthening all aspects of a potential CTBT, to include exercises to further develop the monitoring and verification regime. • Continue to monitor stored plutonium oxide and shutdown plutonium production reactors in Russia to ensure adherence with the PPRA. • Maintain accreditation of OPCW analysis laboratory at LLNL.	**69,176**
Nuclear Noncompliance Verification		
FY 2011	• Improved the Uranium Sourcing database tool by delivering a more efficient and robust version of the statistical query tool (iDAVE2) and analyzing an additional 165 Uranium samples. • Transferred reactor core sampling capability from the United Kingdom to the United States, established appropriate storage, maintenance and training facilities for the tool, and trained and certified a U.S. team that is now ready for deployment. • Developed nuclear fuel cycle analyses and provided suggestions for verification activities for select countries of concern as requested by IAEA. • Further developed and maintained existing capabilities to, on short notice, verify declarations about key elements of the plutonium nuclear fuel cycle in countries of concern. • Provided planning and readiness to support verifiable dismantlement of nuclear programs in countries of proliferation concern.	**7,389**
FY 2012	• Begin development of a capability for age dating UF_6 in cylinders to verify declarations of the uranium fuel cycle in countries of concern. • Further develop nuclear fuel cycle analyses and provide suggestions for verification activities for select countries of concern as requested by IAEA. • Provide training to the IAEA on verification techniques developed by NNV. • Continue to improve and maintain existing capabilities to, on short notice, verify declarations about key elements of the plutonium nuclear fuel cycle in countries of	**7,389**

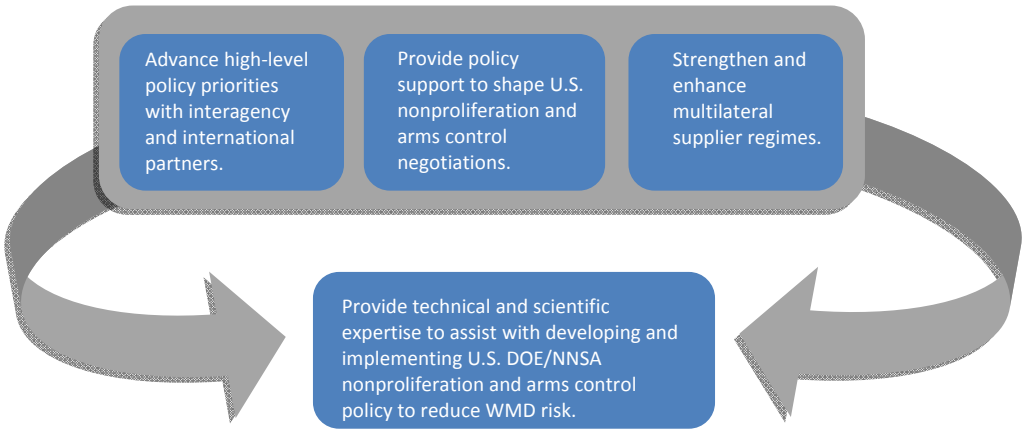
Fiscal Year	Activity	Funding (Dollars in Thousands)
Nuclear Verification		
	concern. • Provide planning and readiness to support verifiable dismantlement of nuclear programs in countries of proliferation concern.	
FY 2013	• Continue development of a capability for age dating UF_6 in cylinders to verify declarations of the uranium fuel cycle in countries of concern. • Provide fuel cycle analyses and suggestions for verification activities for select countries of concern as requested by IAEA. • Address outstanding needs in verification technical capabilities for the uranium and plutonium fuel cycles. • Maintain existing capabilities to, on short notice, verify declarations about key elements of the plutonium nuclear fuel cycle in countries of concern. • Provide planning and readiness to support verifiable dismantlement of nuclear programs in countries of proliferation concern.	**7,184**
FY 2014-FY 2017	• Demonstrate the capability to age date UF_6 in cylinders to verify declarations of the uranium fuel cycle in countries of concern. • Develop fuel cycle verification tools and technologies as identified by analyses performed in previous years. • Continue to provide fuel cycle verification support and training to the IAEA. • Address outstanding needs in verification technical capabilities for the uranium and plutonium fuel cycles. • Maintain existing capabilities to, on short notice, verify declarations about key elements of the plutonium nuclear fuel cycle in countries of concern. • Provide planning and readiness to support verifiable dismantlement of nuclear programs in countries of proliferation concern.	**32,285**
HEU Transparency Implementation		
FY 2011	• Completed 24 monitoring visits to Russian nuclear facilities, monitored the conversion of 30 MT of Russian weapons-origin highly-enriched uranium (HEU) to low-enriched uranium (LEU) for a cumulative total of 432 MT downblended and verifiably eliminated, and continued to monitor and assess Russian HEU to LEU processing data.	**16,568**
FY 2012	• Complete 24 monitoring visits to Russian nuclear facilities, monitor the conversion of 30 MT of Russian weapons-origin HEU to LEU for a cumulative total of 462 MT downblended and verifiably eliminated, support a Russian monitoring visit to the United States, and continue to monitor and assess Russian HEU to LEU processing data.	**16,568**
FY 2013	• Complete 24 monitoring visits to Russian nuclear facilities, monitor the conversion of 30 MT of Russian weapons-origin HEU to LEU for a cumulative total of 492 MT downblended and verifiably eliminated, support a Russian monitoring visit to the United States, and continue to monitor and assess Russian HEU to LEU processing data.	**17,989**
FY 2014-FY 2017	• Fulfill all transparency monitoring provisions under the U.S.-Russia HEU Purchase Agreement. At the end of CY 2013 (Q1 of FY 2014) complete monitoring visits to four Russian HEU processing facilities, monitor the conversion of 8 MT of Russian weapons-origin HEU to LEU for a cumulative total of 500 MT downblended and verifiably eliminated. The HEU Purchase Agreement will remain in force until FY 2015, when all Russian LEU will have been shipped to the United States where it will be fabricated into nuclear fuel, and delivered to commercial nuclear power plants. In FY 2014 and	**80,844**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Nuclear Verification		
	FY 2015, the program will meet transparency requirements by completing assessments of Russian HEU to LEU processing data, providing U.S. LEU processing data and forms to Russia, and supporting Russian monitoring visits to the USEC Paducah facility and four U.S. nuclear fuel fabrication facilities.	

Nonproliferation Policy
Overview

The Nonproliferation Policy (NP) subprogram develops and implements DOE/NNSA nonproliferation and arms control policy. The subprogram's activities support implementation of bilateral and multilateral, Presidential-directed, or Congressionally-mandated nonproliferation and international security requirements stemming from high-level nonproliferation initiatives, agreements, and treaties. Specifically, the NP subprogram conducts policy and technical analysis on urgent national security issues, proliferation trends in regions and countries of concern, and options to strengthen international regimes and mechanisms for preventing proliferation; 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. The NP subprogram is responsible for the following elements: Global Regimes, Regional Analysis and Engagements, and Multilateral Supplier Policy.

Sequence



Benefits

- Ensures that peaceful nuclear cooperation occurs in accordance with U.S. nonproliferation policy and that the International Atomic Energy Agency's IAEA's Technical Cooperation Program has the support required from the DOE National Laboratories to implement its peaceful nuclear cooperation goals, while supporting the development of diplomatic strategies that highlight the U.S. record of accomplishment on nuclear disarmament.
- Strengthens multilateral supplier regimes to limit the spread of sensitive technologies, such as enrichment and reprocessing, and to shut down illicit and clandestine procurement.
- Advances high-level U.S. Government nonproliferation priorities, including effective implementation of UNSCR 1540 and the G8 Global Partnership, through cross-cutting planning and analysis to ensure that NNSA's broad capabilities are fully integrated with these critical USG priorities.
- Facilitates engagement in proliferation-sensitive regions through Track 1.5 and Track II initiatives and leverages these efforts to build capacity for greater regional, government-to-government cooperation in arms control, non-proliferation, and disarmament issues.

Funding and Activity Schedule[a]

Fiscal Year	Activity	Funding (Dollars in Thousands)
Nonproliferation Policy		
FY 2011		**9,595**
FY 2012		**11,284**
FY 2013		**9,410**
FY 2014-FY 2017		**42,289**
Global Regimes		
FY 2011	• Commenced negotiations on administrative arrangements for section 123 peaceful nuclear cooperation agreements with Canada, India, and Russia. • Completed negotiations on the Washington Agreement II, which allows for the construction of the URENCO US and AREVA-Eagle Rock enrichment facilities in the United States. • Completed two Fissile Material Cut-Off Treaty (FMCT) studies related to the verification principles to be employed at DOE/NNSA nuclear material production facilities. • Submitted new 10 CFR Part 810 nuclear technology transfer regulations for public review and comment. • Formally established the American Assured Fuel Supply to help ensure the supply of nuclear material to domestic and international civil nuclear industry.	**4,239**
FY 2012	• Provide statutorily-mandated technical assistance to negotiations supporting agreements for cooperation and their administrative arrangements, focusing on the conclusion of Administrative Arrangements with Canada, India, and Russia. • Represent DOE/NNSA in potential negotiations on a FMCT. • Develop positions and represent DOE in bilateral/multilateral discussions at the First Preparatory Committee Meeting to the Nuclear Nonproliferation Treaty Review Conference. • Finalize entry into force of new 10 CFR Part 810 nuclear technology transfer regulations. • Provide technical support in the development of IAEA Nuclear Fuel Bank, as part of the President's new framework for civil nuclear cooperation.	**4,641**
FY 2013	• Provide statutorily-mandated technical assistance to negotiations supporting agreements for cooperation and their administrative arrangements. • Represent DOE/NNSA in potential negotiations on a FMCT and continue development of verification regime for the Treaty. • Develop positions and represent DOE in bilateral/multilateral discussions at the Second Preparatory Committee Meeting to the Nuclear Nonproliferation Treaty Review Conference. • 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.	**3,750**
FY 2014-FY 2017	• Continue to provide statutorily-mandated technical assistance to negotiations supporting section 123 peaceful uses cooperation agreements and their administrative arrangements. • Continue to represent DOE/NNSA in potential negotiations on a FMCT and at the NPT	**16,853**

[a] All FY 2011 numbers provided in this chart are comparable to the new structure implemented in FY 2012.

Fiscal Year	Activity	Funding (Dollars in Thousands)
Nonproliferation Policy		
	PrepComs and Revcon. • Conclude development of a new international framework for civil nuclear cooperation and proceed to implement such framework in government and with industry.	
Regional Analysis and Engagement		
FY 2011	• With Sandia National Laboratories and Texas A&M University, established a nuclear energy safety, safeguards and security educational institute in Abu Dhabi, United Arab Emirates. • Conducted policy activities and analyses undertaken by National Laboratories, non-government organizations, or institutes of higher learning in critical regions of the world to promote stability and implement nonproliferation and counter-proliferation security priorities such as better control over nuclear trade and reducing the nuclear danger.	**1,860**
FY 2012	• Conduct policy activities and analyses undertaken by National Laboratories, non-government organizations, or institutes of higher learning in critical regions of the world to promote stability and implement nonproliferation and counter-proliferation security priorities such as better control over nuclear trade and reducing the nuclear danger. • Provide policy and technical analyses of, and responses to, emerging and immediate nonproliferation and counter-proliferation security issues including the global expansion of nuclear energy and evolution of the nuclear fuel cycle.	**2,500**
FY 2013	• Build on 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.	**2,000**
FY 2014-FY 2017	• Review regional proliferation trends and revise and develop policy and technical analyses to reflect emerging arms control, nonproliferation, and counter-proliferation security challenges.	**8,986**
Multilateral Supplier Policy		
FY 2011	• Completed negotiations in the Nuclear Suppliers Group to strengthen controls on enrichment and reprocessing technologies. • Upgraded the Nuclear Suppliers Group Information Sharing System to be more secure and robust with regards to the sharing of denial information. • Completed negotiations with 45 partner governments on 7 proposals to update the nuclear reactor section of the NSG control list to cover evolving technologies. • Started work on updating sections on the NSG controls lists associated with weaponization, reprocessing, and enrichment.	**3,496**
FY 2012	• Continue to lead the U.S. effort to conduct a fundamental review of the NSG control list to ensure it adequately reflects the latest technology developments in the nuclear fuel-cycle and dual-use technology. • Support the U.S. Government hosting and chairing the NSG. • Implement NSG controls on transit and brokering of nuclear materials and technology. • Update the NSG Information Sharing System.	**4,143**
FY 2013	• Complete U.S. Government term as Chairman of the NSG. • Study the potential creation of an international convention on nuclear export controls.	**3,660**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Nonproliferation Policy		
	• Participate in the NSG Troika for outreach and membership issues. • Implement the concept of industry self-regulation within the NSG Guidelines. • Complete the effort to conduct a fundamental review of the NSG control list to ensure it adequately reflects the latest technology developments in the nuclear fuel-cycle and dual-use technology.	
FY 2014-FY 2017	• Lead the U.S. effort to conduct a fundamental review of the NSG's Guidelines to reflect an evolving globalized nuclear industry. • Conduct technical studies to determine new technologies of proliferation concern that should be controlled by the NSG. • Lead the effort to have the NSG control lists implemented within the model IAEA Additional Protocol Annex for import/export reporting.	**16,450**

Capital Operating Expenses and Construction Summary

Capital Operating Expenses[a]

(dollars in thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Capital Operating Expenses			
General Plant Projects	80	82	84
Capital Equipment	614	628	642
Total, Capital Operating Expenses	**694**	**710**	**726**

Outyear Capital Operating Expenses

(dollars in thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request
Capital Operating Expenses				
General Plant Projects	86	88	90	92
Capital Equipment	656	670	685	700
Total, Capital Operating Expenses	**742**	**758**	**775**	**792**

[a] Funds are appropriated for Operations and Maintenance, which includes operating expenses, capital equipment and general plant projects. The program no longer budgets separately for capital equipment and general plant projects. Funding shown reflects estimates based on actual FY 2011 obligations.

International Nuclear Materials Protection and Cooperation
Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
International Nuclear Materials Protection and Cooperation			
Navy Complex	34,332	33,664	39,860
Strategic Rocket Forces/12th Main Directorate	51,359	59,105	8,300
Weapons Material Protection [a]	93,318	80,735	46,975
Civilian Nuclear Sites	53,027	59,117	60,092
Material Consolidation and Conversion	13,867	14,306	17,000
National Infrastructure and Sustainability Program [b]	60,928	60,928	46,199
Second Line of Defense	265,163	262,072	92,574
International Contributions [c]	6,639	0	0
Total, International Nuclear Materials Protection and Cooperation	**578,633**	**569,927**	**311,000**

Out-Year Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request
International Nuclear Materials Protection and Cooperation				
Navy Complex	39,742	39,767	39,843	39,823
Strategic Rocket Forces/12th Main Directorate	14,300	14,300	14,300	14,300
Weapons Material Protection [a]	54,857	54,882	54,958	54,938
Civilian Nuclear Sites	59,972	59,997	60,074	60,053
Material Consolidation and Conversion	20,000	20,000	20,000	20,000
National Infrastructure and Sustainability Program [b]	46,081	46,106	46,182	46,162
Second Line of Defense	47,676	52,974	58,513	64,895
Total, International Nuclear Materials Protection and Cooperation	**282,628**	**288,026**	**293,870**	**300,171**

[a] Weapons Material Protection was formerly known as Rosatom Weapons Complex.

[b] National Infrastructure and Sustainability was formerly known as National Programs and Sustainability.

[c] FY 2011 total includes international contributions of $300,000 from South Korea, $117,000 from the United Kingdom of Great Britain, $512,076 from Norway, $540,602 from New Zealand, and $5,169,026 from Canada.

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
Consolidated Appropriations Act, 2012 (P.L. 112-74)
National Defense Authorization Act for FY 2012 (P.L. 112-81)

Overview

The International Nuclear Materials Protection and Cooperation (INMP&C) program supports the Secretary's goal of enhancing nuclear security through defense, nonproliferation, and environmental efforts by significantly increasing the security of vulnerable stockpiles of nuclear weapons and weapons-usable nuclear materials worldwide, preventing the loss of such material, and significantly improving the ability to deter, detect, and interdict their illicit trafficking.

INMP&C works cooperatively with partner countries to implement security upgrades at nuclear facilities under the Material Protection Control and Accounting (MPC&A) Program. MPC&A teams work to provide a suite of upgraded physical security systems and nuclear material control and accounting upgrades. To complement efforts to secure materials at their source, INMP&C supports the consolidation of nuclear materials into smaller, more defensible and more sustainable locations. Consolidation not only reduces the risk to materials in multiple unsecured locations; it also reduces the overall financial burden of storing the materials. Similarly, INMP&C is helping its partners to reduce their overall holding of nuclear materials by down-blending civilian highly enriched uranium (HEU) to low-enriched uranium (LEU).

INMP&C's Second Line of Defense (SLD) Program focuses on preventing pathways for nuclear smuggling through border crossings, airports, seaports, and within borders. Working in partnership with foreign governments, the SLD Core Program implements a comprehensive process for enhancing detection capabilities for the detection of special nuclear and other radioactive materials country-wide. The SLD Megaports Initiative provides similar support with a focus on the complex challenge of scanning containerized cargo as it moves through the global maritime shipping system.

Improvement in a partner country's ability to secure, reduce, and interdict nuclear materials must be sustained by the country in the long term. INMP&C implements a variety of programs to develop or improve indigenous infrastructures and capabilities at the site and national levels in areas such as regulations and procedures, inspections, training, maintenance, performance testing, life-cycle planning, and nuclear security culture.

Program Accomplishments and Milestones

In the prior appropriation year, INMP&C accomplished three significant milestones in program management and/or program development. Such accomplishments include: 1) completed deployments of SLD radiation detection systems at all 383 Federal Customs Service of Russia crossing points (airports, seaports, and land crossings); 2) completed MPC&A security upgrades to 218 buildings containing weapons usable material; and 3) downblended 13.7 metric tons of HEU to LEU.

Explanation of Changes

The Department's request of $311,000,000 in Fiscal Year 2013 reflects a 45 percent decrease over the FY 2012 level. The FY 2013 request increases the levels for Navy Complex (+$6,196,000), Civilian Nuclear Sites (+$975,000), and Material Consolidation and Conversion (+$2,694,000). This request decreases Strategic Rocket Forces/12th Main Directorate (-$50,805,000), Weapons Material Protection (-$33,760,000), National Infrastructure and Sustainability (-$14,729,000), and the Second Line of Defense Program (-$169,498,000).

Program Planning and Management

The office of International Nuclear Material Protection & Cooperation (INMP&C) supports NNSA and DOE strategic objective 3: "Secure Our Nation" by enhancing nuclear security and reducing global nuclear dangers through efforts to improve the security of weapons-usable materials in Russia, the FSU, and other countries. INMP&C regularly validates its work and funding priorities, engages in annual planning and implementation reviews of its work across the Future Years Nuclear Security Program (FYNSP), allocates resources to fund the highest priority work, and addresses near-term and out-year challenges using a systematic solution approach.

INMP&C applies robust project management principles and controls throughout its project portfolio to ensure the most effective and efficient use of taxpayer dollars. An internet-based project management and planning system facilitates communication and project oversight.

Strategic Management

The program will:

- Continue to support the President's Prague commitment to lead an international effort to secure all vulnerable nuclear material in four years.

- Continue to improve efforts to deter, detect, and interdict the illicit trafficking of weapons-usable material.
- Continue to emphasize increased proportions of cost-sharing with international partners.
- Continue to coordinate nonproliferation activities with inter-agency and international partners such as Department of Defense, Department of Homeland Security, Department of State, and the International Atomic Energy Agency, among others.

Three external factors present the strongest impact to the overall achievement of the programs strategic goal:
- Foreign partner commitment to remain engaged with the United States,
- New agreements needed, such as extension of the Cooperative Threat Reduction umbrella agreement, and
- Continued effort in developing concepts of operations and technology for effective mobile and discrete detection.

Major Outyear Priorities and Assumptions

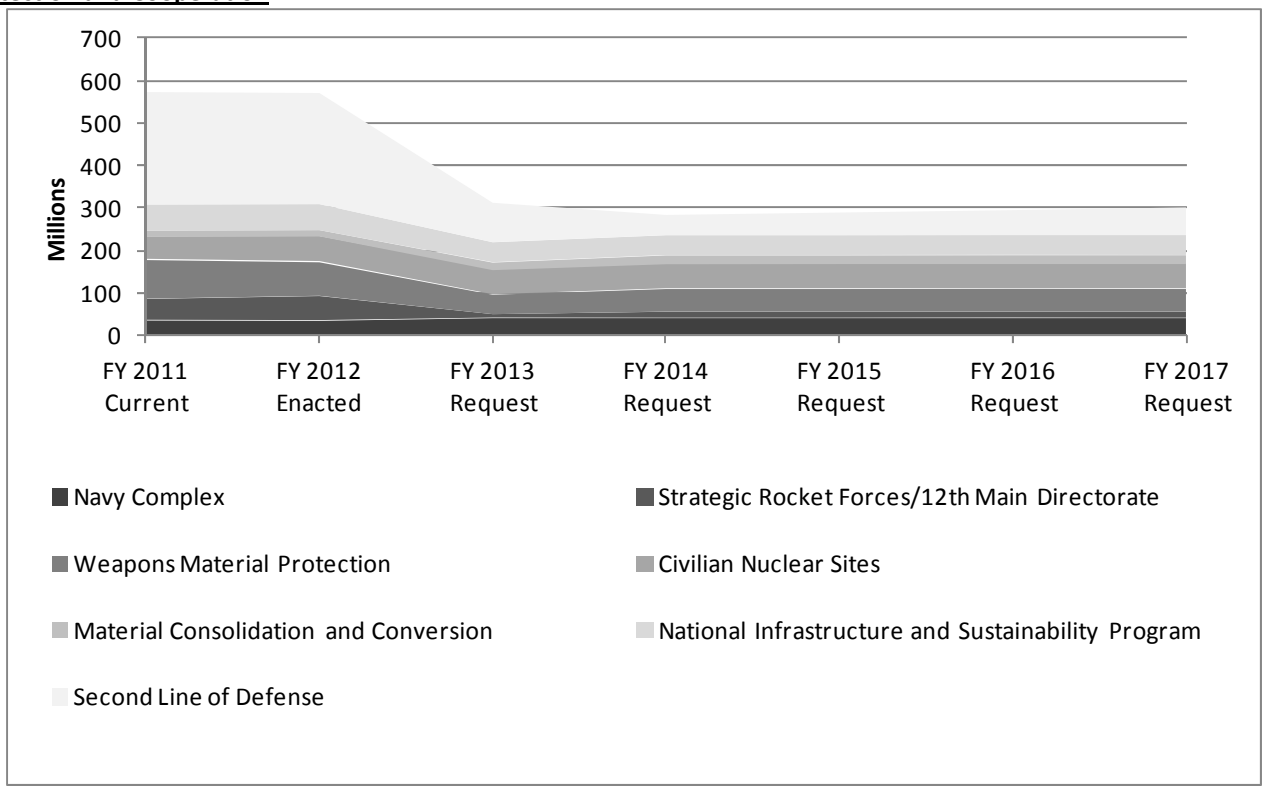
The outyear projections for the INMP&C program total approximately $1,164,695,000 (FY 2014 – FY 2017). The Program plays a key role in supporting the Secretary's goal of enhancing nuclear security through defense, nonproliferation, and environmental efforts by significantly increasing the security of vulnerable stockpiles of nuclear weapons and weapons-usable nuclear materials worldwide, preventing the loss of such material, and significantly improving the ability to deter, detect, and interdict their illicit trafficking.

To meet the NNSA strategic long-term goal of Nuclear Nonproliferation, the INMP&C program completed MPC&A upgrades in Russia at a total of 73 warhead sites at the end of calendar year 2008 and plans to: (1) complete upgrades to approximately 229 buildings containing weapons exploitable nuclear material by the end of fiscal year 2013; (2) downblend a cumulative total of approximately 15 MTs of HEU by the end of fiscal year 2013; and (3) install radiation detection equipment at a cumulative 486 border crossings around the world and at 45 ports of interest in approximately 40 countries by the end of 2013. These results will directly support the goal of Nuclear Nonproliferation by providing a first line of defense by securing warheads and weapons exploitable nuclear materials at their source, and a second line of defense by preventing pathways and detecting the illicit transfer of nuclear materials.

Program Goals and Funding

INMP&C supports the U.S. Department of Energy's Secure Our Nation Goal by preventing terrorists from acquiring nuclear and radiological materials that could be used in weapons of mass destruction (WMD) or other acts of terrorism. INMP&C does so by: 1) working cooperatively with partner countries to implement security upgrades at sites storing or processing nuclear materials; 2) supporting the consolidation and downblending of nuclear materials in those countries; 3) improving efforts to deter, detect, and interdict the illicit traffic of weapons-usable material through the use of stationary and mobile radiation detection equipment at border crossings, airports, seaports, and within borders; and 4) developing or improving indigenous infrastructures and capabilities in partner countries that facilitate the sustainability of effective security and detection equipment operations. Together these provide a coordinated approach to achieve INMP&C's mission to deny terrorists access to nuclear and radiological materials.

Figure 1: Relative Out-Year Funding Priorities in Defense Nuclear Nonproliferation - International Nuclear Materials Protection and Cooperation



Explanation of Funding and/or Program Changes

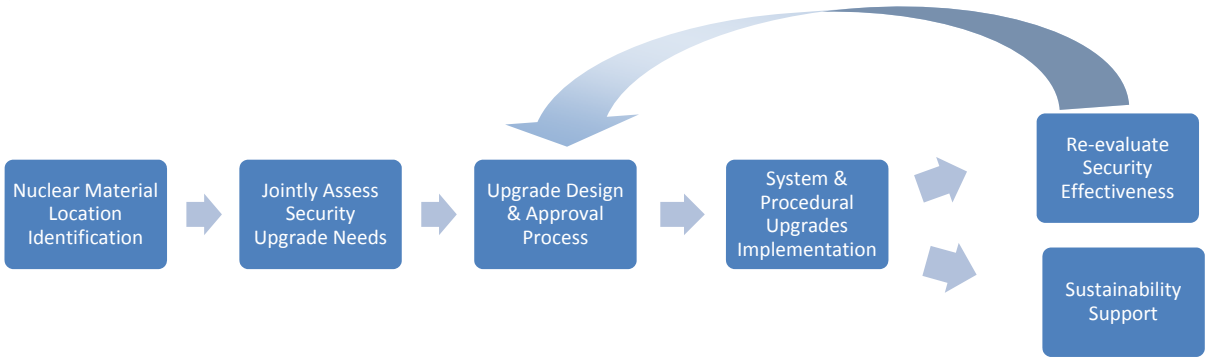
	(Dollars in Thousands)		
	FY 2012 Enacted	FY 2013 Request	FY 2013 vs. FY 2012
International Nuclear Materials Protection and Cooperation			
Navy Complex	**33,664**	**39,860**	**+6,196**
Increase reflects the beginning of a series of replacements of outdated security equipment that has reached the end of it serviceable life to bring Navy sites to the level of upgrades established at the 12th Main Directorate Bratislava Initiatives sites.			
Strategic Rocket Forces/12th Main Directorate	**59,105**	**8,300**	**-50,805**
Decrease reflects the planned FY 2012 completion of ongoing Maintenance and Sustainability support to the Russian Ministry of Defense (MOD). Installation of Training and Logistic Management systems at all MOD locations are also projected to be completed in FY 2012.			
Weapons Material Protection	**80,735**	**46,975**	**-33,760**
Decrease reflects the completion in funding for a number of major upgrade and sustainability initiatives at several sites.			
Civilian Nuclear Sites	**59,117**	**60,092**	**+975**
Increase represents greater support for retrofits of MPC&A equipment installed early in the program, which by FY 2013 will be obsolete; retrofit costs are expected to be higher in FY 2013 than FY 2012 due to equipment age.			
Material Consolidation and Conversion	**14,306**	**17,000**	**+2,694**
Increase represents a greater amount of HEU downblended to LEU. Downblending process upgrades in FY 2011 and FY 2012 should increase capacity by 50%, allowing for greater downblending in FY 2013 (approximately 1.5 metric tons (MT) compared to the current rate of approximately 1MT per year).			
National Infrastructure and Sustainability Program	**60,928**	**46,199**	**-14,729**
Decrease reflects the cessation of funding for two projects – MOD Regulations and MPC&A Operations Monitoring (MOM) – that will be transitioned to Russian responsibility at the end of FY 2012. It also reflects reduced support for equipment sustainability by the transportation security project and protective force project teams.			

	(Dollars in Thousands)		
	FY 2012 Enacted	FY 2013 Request	FY 2013 vs. FY 2012
Second Line of Defense	**262,072**	**92,574**	**-169,498**
· Core Program	**129,402**	**73,000**	**-56,402**
Decrease reflects completion of installation of detection equipment at 449 sites and transition to mobile detection deployment and sustainability activities.			
· Megaports	**132,670**	**19,574**	**-113,096**
Decrease reflects completion of installation of detection equipment at 45 sites and a transition to sustainability activities.			
Total Funding Change, International Nuclear Materials Protection and Cooperation	**569,927**	**311,000**	**-258,927**

Navy Complex
Overview

The Navy Complex program element was established to improve security of Russian Navy warhead and weapons exploitable material by installing improved security systems at Russian Navy nuclear warhead sites, Russian Navy highly enriched uranium (HEU) fuel storage facilities (fresh and damaged fuel), and shipyards where nuclear materials are present. These sites include a total of 47 sites: 39 Russian Navy nuclear warhead sites and 8 Russian Navy fuel and other nuclear material storage sites.

Sequence



In concert with foreign counterparts, the program element works to assess security upgrade needs. This is followed by a collaborative design process and the actual implementation of new security systems and procedures. Once the upgrade phase is complete, the sustainability phase is initiated. In parallel, the upgraded security system is re-evaluated to ensure that risk reduction goals were met. When additional needs are identified, follow-on upgrades are identified to provide additional protection. This is likely to include additional insider threat mitigation measures and other defense-in-depth initiatives. This step is conceptually reflective of the dynamic nature of security in which best practices dictate the constant re-evaluation of security system effectiveness in the face of evolving threats.

Benefits

- Reduces the risk of theft by terrorists of nuclear weapons and weapons exploitable nuclear propulsion fuel by upgrading, strengthening, and modernizing security systems deployed at Russian Federation (RF) Navy nuclear weapon and nuclear propulsion fuel storage sites.
- Reduces the likelihood that upgraded systems will fail to protect nuclear weapons and materials by helping to ensure that necessary training and maintenance capabilities are incorporated into RF Navy standard operating procedures.

Funding and Activity Schedule

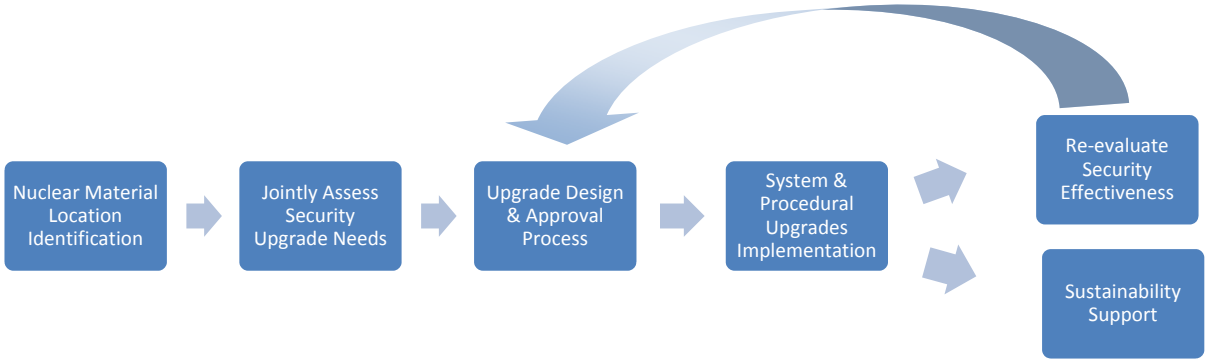
Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Provided sustainability and training efforts to help ensure that the equipment provided is effective in protecting the material at 4 fuel sites and 12 nuclear warhead sites. • Retrofitted MPC&A equipment at the end of its service life at 1 site. • Upgrades to address insider threats completed at 1 site. • Completed security upgrades at 1 checkpoint. • Provided sustainability support to 1 previously upgraded checkpoint. • Provided support for the RF MOD Personnel Reliability Program. • Replaced outdated security equipment at 4 sites.	**34,332**

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• Provide sustainability and training efforts to help ensure that the equipment provided is effective in protecting the material at 4 fuel sites and 12 nuclear warhead sites. • Complete security upgrades at 2 additional checkpoints. • Provide sustainability support at 2 previously upgraded checkpoints. • Continue to provide support for Personnel Reliability Programs.	**33,664**
FY 2013	• Provide workshops and training for the systems and procedures previously installed and implemented. • Provide systematic replacement of outdated security equipment that has reached the end of it serviceable life at 8 sites. • Implement additional upgrades to bring Navy sites to the level of upgrades established at 12th Main Directorate's Bratislava Initiative sites.	**39,860**
FY 2014-FY 2017	• Continue to provide training and workshops for the systems and procedures previously installed and implemented. • Provide systematic replacement of outdated security equipment that has reached the end of it serviceable life at sites previously upgraded. • Implement additional upgrades to bring Navy sites to the level of upgrades established at 12th Main Directorate's Bratislava Initiative sites.	**159,175**

Strategic Rocket Forces/12th Main Directorate
Overview

The Strategic Rocket Forces (SRF)/12th Main Directorate program element improves security of Russian warheads by installing improved MPC&A systems at Russian Federation Strategic Rocket Forces and 12th Main Directorate nuclear warhead sites. These sites, which include 25 SRF sites (at 11 bases) and nine 12th Main Directorate sites, have been approved by the U.S. Government for MPC&A upgrades. The process for working with the SRF and the 12th Main Directorate is based upon the refined process developed for working with the Russian Navy, which includes: (1) upgrades to designs driven by vulnerability assessments (VAs), (2) a rapid upgrades and/or a comprehensive upgrades phase, and (3) a sustainability program, which assures the systems will remain effective after the installation of upgrades is complete.

Sequence



In concert with foreign counterparts, the program element works to assess security upgrades needs. This is followed by a collaborative design process and the actual implementation of new security systems and procedures. Once the upgrade phase is complete, the sustainability phase is initiated. In parallel, the upgraded security system is re-evaluated to ensure that risk reduction goals were met. When additional needs are identified, follow-on upgrades are identified to provide additional protection. This is likely to include additional insider threat mitigation measures and other defense-in-depth initiatives. This step is conceptually reflective of the dynamic nature of security in which best practices dictate the constant re-evaluation of security system effectiveness in the face of evolving threats.

Benefits

- Reduces the risk of theft by terrorist of Russian nuclear warhead stockpiles under the command of the RFMOD by upgrading strengthening, and modernizing security systems deployed at Russian Federation Strategic Rocket Force and 12th Main Directorate nuclear weapon sites.
- Helps reduce the likelihood that upgraded systems will fail to protect nuclear weapons and materials by helping to ensure that necessary training and maintenance capabilities are incorporated into SRF and 12th Main Directorate standard operating procedures.
- Reduces the threat posed by insiders (RF military personnel) by strengthening human reliability programs used to vet military personnel with access to nuclear weapon.

Funding and Activity Schedule

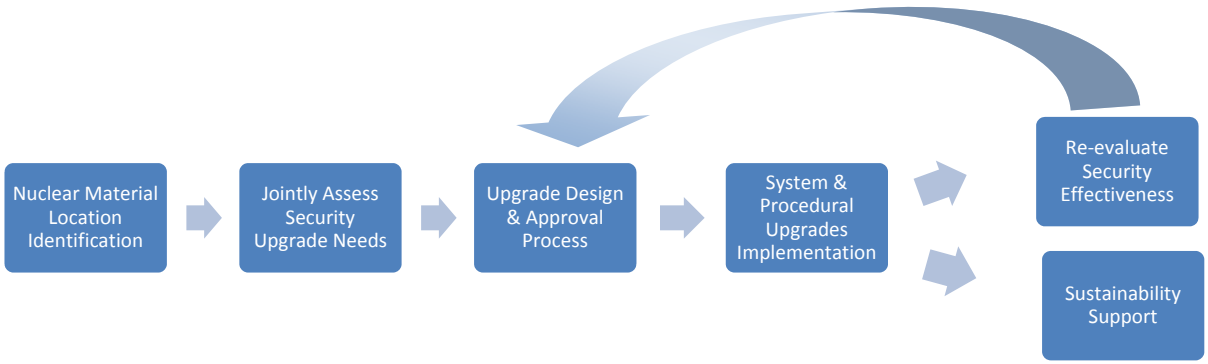
Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Provided sustainability support at: 23 SRF sites and 3 12th Main Directorate sites. • Built/supported 3 training and maintenance centers to ensure sustainability of security system upgrades installed at nuclear weapons sites. • Provided additional MPC&A upgrades to other SRF sites that will provide additional protection from theft and/or diversion of warheads from these sites.	**51,359**
FY 2012	• Provide sustainability support at: 23 SRF sites and 3 12th Main Directorate sites. • Complete/support for 3 training and maintenance centers to ensure sustainability of upgrades installed at the sites. • Provide additional MPC&A upgrades to other SRF sites that will provide additional protection from theft and/or diversion of warheads from these sites.	**59,105**
FY 2013	• Decrease from FY 2012 reflects completion of sustainability support in FY 2012 • Provide support for 3 training and maintenance centers to help ensure sustainability of site upgrades. • Provide systematic replacement of outdated security equipment that has reached the end of it serviceable life at up to 11 sites. • Begin to provide additional MPC&A upgrades at SRF sites at the same level of upgrades provided at the 12th Main Directorate's Bratislava sites. The upgrades will provide additional protection from theft and/or diversion of warheads from these sites.	**8,300**
FY 2014-FY 2017	• Continue to provide support for training and maintenance centers to help ensure sustainability of upgrades. • Provide systematic replacement of outdated security equipment that has reached the end of it serviceable life at sites previously upgraded.	**57,200**

Weapons Material Protection
Overview

The Weapons Material Protection, formerly known as the Rosatom Weapons Complex, element primarily focuses on nuclear material security upgrades at seven large nuclear sites located within Russian closed cities. These sites include nuclear weapons design facilities, component handling, and material production and reprocessing facilities with many nuclear material storage and handling locations. The goal of this joint cooperative program is to provide financial and technical assistance to improve the protection of nuclear materials from internal and external theft scenarios through security system and procedural upgrades. Sustainability assistance is also provided with the aim of ensuring that systems continue to operate effectively over time and that sites have the infrastructure elements in place to manage them. Where necessary, the program will also finance the replacement of systems that were upgraded earlier in the cooperation that are at the end of their operational lifecycles.

This program element also supports continued MPC&A activities outside of Russia, including sustainability activities at nine sites in Kazakhstan, Ukraine, Belarus, and Uzbekistan, and engagement with the International Atomic Energy Agency (IAEA) to promote best practices related to nuclear material control, accounting, and sustainability. Funding will also be allocated to continuing efforts to establish a best practices exchange on nuclear material security topics with India.

Sequence



In concert with foreign counterparts, the program element works to assess security upgrades needs. This is followed by a collaborative design process and the actual implementation of new security systems and procedures. Once the upgrade phase is complete, the sustainability phase is initiated. In parallel, the upgraded security system is re-evaluated to ensure that risk reduction goals are met. When additional needs are identified, follow-on upgrades are identified to provide additional protection. This is likely to include additional insider threat mitigation measures and other defense-in-depth initiatives. This step is conceptually reflective of the dynamic nature of security in which best practices dictate the constant re-evaluation of security system effectiveness in the face of evolving threats.

Benefits

- Reduces the threat of outsider theft at seven large Russian facilities that store and process metric tons of weapons-usable nuclear material by improving physical security systems including detection, delay, assessment, and guard force capabilities.
- At the forefront of mitigating insider threats of theft or diversion at several of the largest bulk processing facilities in the world by focusing not just on physical protection upgrades but material control and accounting upgrades, as well as helping implement other insider-related activities such as waste stream screening, operational monitoring, and human reliability programs.
- By sustaining security upgrades, continues to serve as a necessary bridge to DOE/NNSA Global Threat Reduction Initiative efforts to remove weapons-usable materials from countries in the former Soviet Union.

- Helps the IAEA fill a gap in the nuclear security architecture and raise awareness of the importance of material control and accounting in facility-level security postures.
- Fosters nuclear material security best practices exchanges with India.

Funding and Activity Schedule

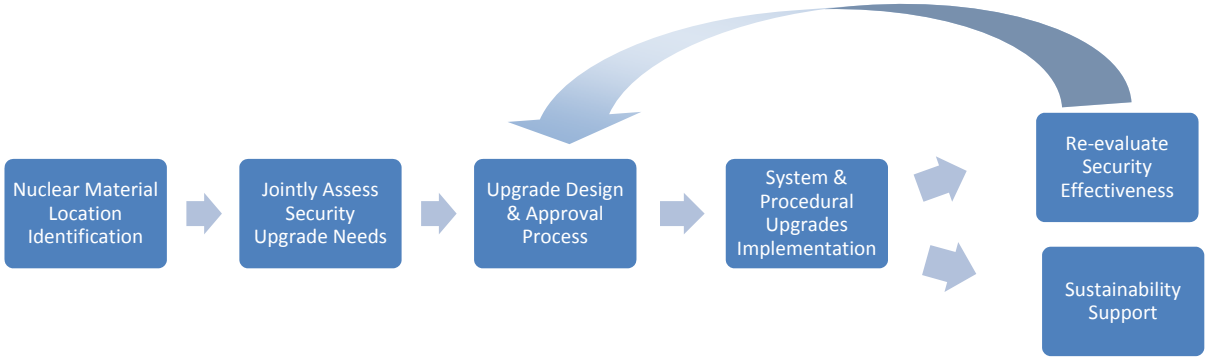
Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Insider-related upgrades were funded at two of the largest bulk processing facilities in Russia. • A new perimeter was funded at one guarded area with 9 buildings that have weapons-usable nuclear material at one of the primary weapons design facilities in Russia. • A new perimeter was completed around a guarded area with 15 buildings that have weapons-usable nuclear material at one of the primary weapons design facilities in Russia. • Comprehensive physical protection upgrades were completed at 2 buildings at one of the primary weapons design facilities in Russia. • A commuter rail platform was completed at a large bulk processing facility in Russia. • Waste stream screening upgrades were funded at six Russian nuclear sites. • Continued to support selective MPC&A activities in Kazakhstan, Ukraine, Belarus, and Uzbekistan, consistent with the removal of attractive nuclear materials by the DOE/NNSA Global Threat Reduction Initiative. • Supported engagement with the International Atomic Energy Agency to promote best practices related to nuclear material control, accounting, and sustainability. • Continued engagement with India on nuclear material security best practices.	**93,318**
FY 2012	• Insider-related upgrades will be completed at two of the primary bulk processing facilities in Russia. • Comprehensive MPC&A upgrades will commence at 10 new buildings that store and process weapons-usable nuclear material at one of the largest bulk processing facilities in Russia. 3 building will be completed this fiscal year. • A new perimeter will be completed at a guarded area with 2 buildings that have weapons-usable nuclear material and a new perimeter will be funded at a guarded area with 16 buildings that have weapons-usable nuclear material at one of the primary weapons design facilities in Russia. • Physical protection upgrades will be completed at 3 additional buildings that have weapons-usable nuclear material at one of the primary weapons design facilities in Russia. • A new guard house and central alarm station will be completed at one of the primary weapons design facilities in Russia. • Human reliability program engagement will commence with two bulk processing facilities. Continue support for selected MPC&A activities in Kazakhstan, Ukraine, Belarus, and Uzbekistan as appropriate. Particular efforts focused on creating a regional MPC&A training facility in Kazakhstan and a new secure material storage vault at a facility in Belarus. • Continue engagement with the International Atomic Energy Agency to promote best practices related to nuclear material control, accounting, and sustainability.	**80,735**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	• Continue engagement with India on nuclear material security best practices.	
FY 2013	• Comprehensive MPC&A upgrades will be completed at 7 buildings that store and process weapons-usable nuclear material. • Physical protection upgrades will be completed at a rail transfer point for weapons-usable nuclear material at a large bulk processing facility. • A new perimeter will be completed at a guarded area with 16 buildings that have weapons-usable nuclear material at one of the primary weapons design facilities in Russia. • Upgrades to the closed city perimeter entry control points at two weapons design facilities will be completed. • Human reliability program engagement will continue with two bulk processing facilities. • Continue support for selected MPC&A activities in Kazakhstan, Ukraine, Belarus, and Uzbekistan as appropriate. Particular efforts focused on creating a regional MPC&A training facility in Kazakhstan. • Continue engagement with the International Atomic Energy Agency to promote best practices related to nuclear material control, accounting, and sustainability. • Continue engagement with India on nuclear material security best practices.	**46,975**
FY 2014-FY 2017	• Continue to fund selective new upgrades to buildings/areas at these sites that were added to the cooperative after the Bratislava Summit, including: (1) nuclear detection on closed city borders; (2) expanded MPC&A upgrades at some buildings to address both outsider and insider threats; (3) Rosatom protective force training center development; and (4) improvements to site-wide material measurement and accounting practices. • Continue efforts towards implementing a comprehensive MPC&A sustainability effort at all 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. • As necessary, the program will continue to finance the replacement of systems that were upgraded earlier in the cooperative agreement that are at the end of their operational lifecycles. • Continue to support MPC&A activities in Kazakhstan, Ukraine, Belarus, and Uzbekistan as needed. • Continue engagement with the International Atomic Energy Agency to promote best practices related to nuclear material control, accounting, and sustainability. • Continue engagement with India on nuclear material security best practices.	**219,635**

Civilian Nuclear Sites
Overview

The Civilian Nuclear Sites program element improves security at 18 civilian nuclear sites in Russia, supports Nuclear Security Culture programs in Russia and many other countries globally, and provides Nuclear Security Best Practices support to China. The basic MPC&A upgrade objective is to employ a cost-effective, graded approach with an initial focus on installing upgrades for the most highly proliferant-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. Following the completion of initial rapid and comprehensive site upgrades, U.S. funding will continue at a reduced level to: (1) help foster site capabilities to operate and maintain installed security systems, and (2) support replacement of equipment and possible additional security enhancements, e.g., perimeter upgrades, as warranted. This program element will also continue to support those sites with completed MPC&A comprehensive upgrades.

Sequence



In concert with foreign counterparts, the program element works to assess security upgrades needs. This is followed by a collaborative design process and the actual implementation of new security systems and procedures. Once the upgrade phase is complete, the sustainability phase is initiated. In parallel, the upgraded security system is re-evaluated to ensure that risk reduction goals are met. When additional needs are identified, follow-on upgrades are identified to provide additional protection. This is likely to include additional insider threat mitigation measures and other defense-in-depth initiatives. This step is conceptually reflective of the dynamic nature of security in which best practices dictate the constant re-evaluation of security system effectiveness in the face of evolving threats.

Benefits

- Improves security at 18 civilian nuclear sites in Russia by installing upgrades for the most highly proliferant-attractive nuclear material at each site. The program also fosters site capabilities to operate and maintain installed security systems, and supports replacement of equipment and possible additional security enhancements, e.g., perimeter upgrades, as warranted.
- Promotes and improves nuclear security through the Nuclear Security Culture program, which promotes and supports MPC&A awareness in Russia, the Former Soviet Union, China, and other countries through cooperation with the IAEA.
- Promotes improved nuclear security in China through engagement on nuclear security best practices, using workshops and training to advance MPC&A elements; in addition, this program element will directly impact Chinese domestic nuclear security training through U.S. support for the China Center of Excellence (COE) which is planned to be the central venue for training in all aspects of nuclear security in China.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Provided sustainability support to 18 civilian nuclear sites with completed MPC&A upgrades including support for training, procedures, maintenance, equipment repair, critical spare parts, performance testing, and other activities at these sites, in order to ensure the sustainability of those upgrades and support additional MPC&A upgrades focused on addressing outsider and insider threats within the Civilian Nuclear sites. • Continued cooperation with countries outside of Russia and the Former Soviet States in order to increase MPC&A awareness and to provide assistance to protect weapons exploitable materials, including 5 best practices workshops on topics ranging from secure transportation to nuclear security culture. • Initiated procurement of long-lead time Material Control and Accountability (MC&A) training equipment for the China Center of Excellence (COE). • Completed activities included training, technical exchanges, and consultations to improve security at nuclear material locations.	**53,027**
FY 2012	• Continue to provide sustainability support to civilian nuclear sites with MPC&A upgrades, including completion of an expanded central storage facility, site-level workshops on the VISA methodology for assessing insider threats, and annual technical maintenance support for installed equipment at 18 sites in Russia. • Continue cooperation with countries outside of Russia and the Former Soviet States in order to increase MPC&A awareness and to provide assistance to protect weapons exploitable materials, to include 6-8 best practices workshops on various MPC&A elements. • Complete technical design review phase for China COE (groundbreaking by Chinese anticipated in FY 2012) and initiate procurement of Physical Protection (PP) and remaining MC&A training equipment for the COE. • Continue training, technical exchanges, and consultations to improve security at nuclear material locations.	**59,117**
FY 2013	• Continue to provide sustainability support to civilian nuclear sites with MPC&A upgrades, including ongoing Russian site-level maintenance and training support, additional Perimeter Intrusion Detection and Assessment System (PIDAS) improvements at two sites in Russia, and retrofit of a Russian site security system with newer, more sustainable equipment. • Continue cooperation with countries outside of Russia/FSU in order to increase MPC&A awareness and to provide assistance to protect weapons exploitable materials. • Continue engagement with China on modern nuclear material security methodologies and best practices, to include continued MPC&A workshops and transition of selected topics to indigenous Chinese instruction. • Continue U.S. expert technical engagement on COE during construction, and continue procurement of MPC&A training equipment for the COE. • Continue to conduct training, technical exchanges, and consultations to improve security at nuclear material locations.	**60,092**
FY 2014-FY 2017	• 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. • Complete U.S. support for physical security of a consolidated material processing facility in Russia, reducing the site’s nuclear material footprint for improved security efficiency.	**240,096**

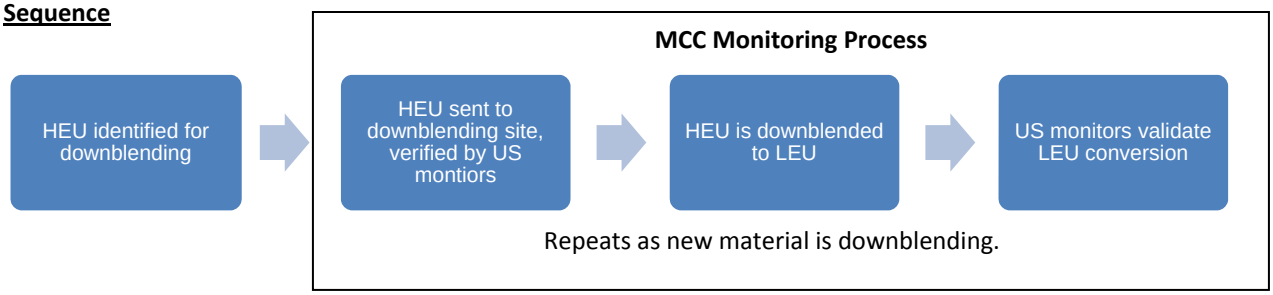
Fiscal Year	Activity	Funding (Dollars in Thousands)
	• Continue to provide sustainability support to civilian nuclear sites with MPC&A upgrades including support for training, procedures, maintenance, equipment repair, critical spare parts, performance testing, and other activities. • Continue U.S. expert 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 into Chinese taught courses for the COE. • Continue training, technical exchanges, and consultations to improve security at nuclear material locations.	

Material Consolidation and Conversion
Overview

The Material Consolidation and Conversion (MCC) program element reduces the complexity and the long-term costs of securing weapons exploitable nuclear material. The MCC project is designed to significantly reduce the proliferation risk associated with weapons exploitable nuclear materials by consolidating excess, weapons-useable HEU and plutonium into fewer, more secure locations.

This approach can decrease the number of proliferant-attractive theft targets and the equipment and personnel costs associated with securing such material. The MCC also converts weapons exploitable special nuclear material (SNM) to a less proliferation-attractive form. By the end of FY 2015, it is planned that the MCC project will convert approximately 17 MTs of HEU to LEU.

Sequence



The above chart is a high-level summary of the basic methodology for implementation of the MPC&A Program. In concert with foreign counterparts, sites and nuclear material locations are incorporated into the cooperation and security upgrades needs are jointly assessed. This is followed by a collaborative design process and the actual implementation of new security systems and procedures. Once the upgrade phase is complete, the sustainability phase is initiated. In parallel, the upgraded security system is re-evaluated to ensure that risk reduction goals were met. When additional needs are identified, follow-on upgrades are identified to provide additional protection. This is likely to include additional insider threat mitigation measures and other defense-in-depth initiatives. This step is conceptually reflective of the dynamic nature of security in which best practices dictate the constant re-evaluation of security system effectiveness in the face of evolving threats.

Benefits

- Reduces the complexity and the long-term costs of securing weapons exploitable nuclear material in Russia.
- Designed to significantly reduce the proliferation risk associated with weapons exploitable nuclear materials by consolidating excess, non-weapons exploitable highly enriched uranium (HEU) and plutonium into fewer, more secure locations.
- Achieves further risk reduction by downblending weapons exploitable HEU to non-weapons exploitable low-enriched uranium (LEU).

Funding and Activity Schedule

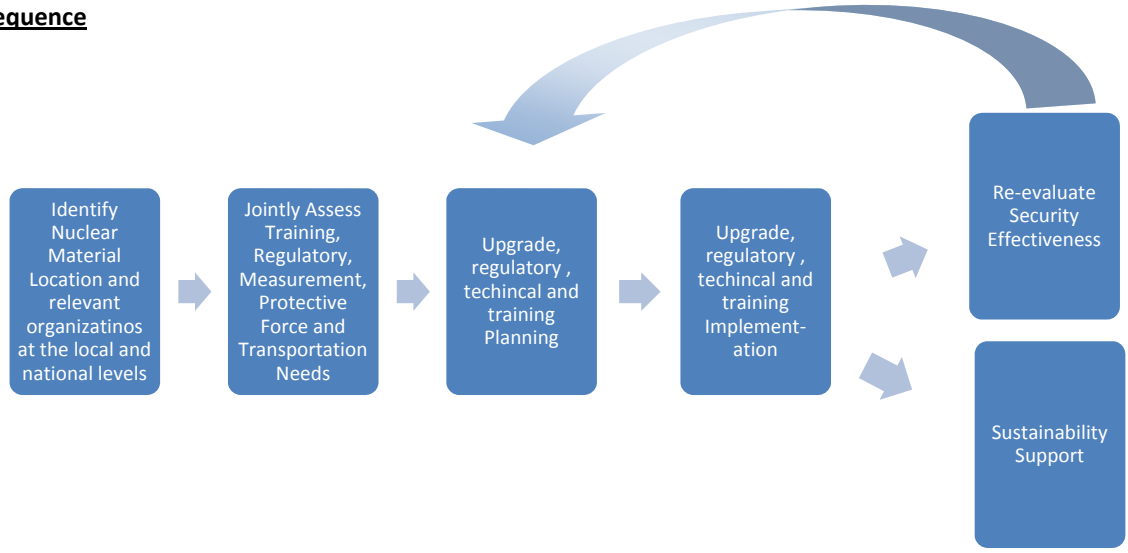
Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Continued to implement the MPC&A strategy to simplify the nuclear security situation in Russia by converting attractive SNM to a less proliferant-attractive form (e.g., HEU to LEU) and to consolidate material to fewer sites and fewer buildings where possible. The program was successful in converting an additional 0.9 MTs of the total 17 MTs of HEU to LEU, (for a cumulative total converted of 13.5 MTs).	**13,867**

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• Continue to convert attractive SNM to a less proliferant-attractive form (e.g., HEU to LEU) and to consolidate material to fewer sites and fewer buildings where possible. Anticipate converting approximately 1MT of HEU to LEU, for a cumulative total of 14.5MT.	**14,306**
FY 2013	• Continue converting attractive SNM to a less proliferant-attractive form (e.g., HEU to LEU) and to consolidate material to fewer sites and fewer buildings where possible. Anticipate converting approximately 1.5MT of HEU to LEU, for a cumulative total of 16MT.	**17,000**
FY 2014-FY 2017	• Continue converting attractive SNM to a less proliferant-attractive form (e.g., HEU to LEU) and to consolidate material to fewer sites and fewer buildings where possible. Anticipate converting approximately 1.5MT of HEU to LEU each year, for a cumulative total of 22MT.	**80,000**

National Infrastructure and Sustainability Program
Overview

The National Infrastructure and Sustainability Program, formerly known as the National Programs and Sustainability, assists Russia and other partner countries in developing and maintaining a nation-wide MPC&A infrastructure, thereby ensuring that U.S.-funded security upgrades and an effective infrastructure can be sustained. Projects include developing and revising regulations, developing inspection capabilities, training, education and regional 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 other partner countries as well as the conditions by which U.S. technical and financial support can be transitioned to the partner countries.

Sequence



In concert with foreign counterparts, the program element works to assess security upgrades needs. This is followed by a collaborative design process and the actual implementation of new security systems and procedures. Once the upgrade phase is complete, the sustainability phase is initiated. In parallel, the upgraded security system is re-evaluated to ensure that risk reduction goals were met. When additional needs are identified, follow-on upgrades are identified to provide additional protection. This is likely to include additional insider threat mitigation measures and other defense-in-depth initiatives. This step is conceptually reflective of the dynamic nature of security in which best practices dictate the constant re-evaluation of security system effectiveness in the face of evolving threats.

Benefits

- Supports sustainable risk reduction by working with partner countries to develop a strong MPC&A regulatory base and a robust MPC&A inspection program to ensure that MPC&A systems and practices at facilities, and within transportation organizations, function effectively to protect nuclear material.
- Works to improve nuclear material security by ensuring that partner countries have a sustainable capability to effectively train personnel responsible for MPC&A at nuclear sites and within transportation organizations and protective force organizations.
- Reduces risk by assisting Russia to properly train and equip protective force organization responsible for guarding nuclear material at sites and in transit.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Worked to develop or revise MPC&A regulations for Russian and Ukraine to support sustainable MPC&A operations. 207 MPC&A regulations are currently in the development phase for Russia and FSU countries, while 59 regulations have been completed by the Russian Federation MOD. • Supported 6 Rostechnadzor Advanced MPC&A Inspection Exercises and Rosatom completed 16 MPC&A inspections. • Worked with Rosatom to sustain existing secure railcars and trucks. • Supported a sustainable and effective measurement-based Material Control and Accountability (MC&A) program by supporting the development or revision of measurement methodologies (MM) and provide reference material (RM) for measurements calibration and operation. • Sustained protective force equipment at 26 Russian sites and continued work to provide updated command and control communications systems at Rosatom sites to improve response times of protective forces to potential threats. • Supported 92 courses at Russian training facilities on physical protection, material control and accounting, and protective force with approximately 1,410 participants. Approximately 15 students will graduate with an Engineering Degree from both National Research Nuclear University (MEPhI) and Tomsk Polytechnic University (TPU).	**60,928**
FY 2012	• Begin work to provide MILES force-on-force equipment for effective protective force training and performance testing. • 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). • Begin development of a Bachelor's program in MPC&A at MEPhI and TPU. • Continue work on 231 MPC&A regulations in the development phase for Russia and FSU countries. The MOD regulatory development project will continue support for completion of the remaining 33 regulations in progress. • In FY 2012, Rostechnadzor will complete 7 MPC&A Advanced Inspection Exercises and Rosatom will complete 16 MPC&A inspections. • Work with Rosatom to sustain existing secure railcars and trucks. • Support a sustainable and effective measurement-based Material Control and Accountability (MC&A) program. In FY 2012, activities to develop MMs will continue; two new MMs and one new RM will be initiated. Several MMs are scheduled to be completed and several hundred RMs will be delivered. Testing of measurement equipment and development of sustainable equipment support infrastructure will continue. • Continue work provide updated command and control communications systems at Rosatom sites. Sustain 3 national-level training academies for MVD-IT guards and sustaining protective force equipment at 26 Russian sites. • Supported 92 courses on physical protection, material control and accounting, and protective force with approximately 1395 participants. • Support MPC&A graduate programs at National Research Nuclear University (MEPhI) and Tomsk Polytechnic University (TPU).	**60,928**

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2013	• Provide upgraded command and control radio systems at 3 Russian sites. Retrofit tactical radio systems at an additional 3 sites. • Provide Human Reliability Program support for the MVD-IT training centers. • Continue work on the cumulative total of 266 MPC&A regulations in the development phase and the 353 regulations that will be in the development phase by the end of FY 2016 for Russia and FSU countries. • Rostechnadzor will complete 5 advanced MPC&A inspection exercises and Rosatom will complete 16 MPC&A inspections. • Support a sustainable and effective measurement-based Material Control and Accountability (MC&A) program. Approximately 15 methodologies for 15 sites and 350 reference standards are expected to be developed. • Sustain 3 national level training academies for Ministry of Internal Affairs-Internal Troops (MVD-IT) nuclear guards and sustain protective force equipment at 26 Russian sites. • Provide MILES equipment to Atomguard and the MVD-IT to support effective protective force performance testing. • Support 78 courses at Russian training facilities on MPC&A and protective force topics with approximately 1165 participants. • 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 programs at National Research Nuclear University (MEPhI) and Tomsk Polytechnic University (TPU).	**46,199**
FY 2014-FY 2017	• 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 20 Rosatom facilities. • Complete a cumulative total of 353 MPC&A regulations in for the Russia and FSU countries. • Rostechnadzor will complete 5 advanced MPC&A inspection exercises and DOE will begin to decrease support for Rosatom inspections in 2014. • Support a sustainable and effective measurement-based Material Control and Accountability (MC&A) program though development of MM and 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 Atomguard and the MVD-IT to support effective protective force performance testing. • Support 64 courses at Russian training facilities on MPC&A, and protective force topics with approximately 1009 participants. • 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 programs at National Research Nuclear University (MEPhI) and Tomsk Polytechnic University (TPU).	**184,531**

Second Line of Defense
Overview

The Second Line of Defense (SLD) program strengthens the capability of foreign governments to deter, detect, and interdict illicit trafficking in nuclear and other radioactive materials across 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/invitation of the government in that country.

The Core program has signed agreements with 24 countries for the provision of fixed and mobile radiation detection systems, as well as integrating fixed sites and mobile systems into National Communications Centers. Core has completed over 421 priority sites and has deployed 27 mobile systems to nine countries. Due to the volume of work in each country and the number of countries, the Core program works in many locations simultaneously. Core has completed all agreed upon RPM installations in Russia, Greece, Georgia, Estonia, Latvia, and Armenia although our on-going cooperation in these countries includes limited support to site configuration changes as well as integrating these sites into National Communications Centers. The FY 2012 appropriation will allow the Core program to continue to work toward meeting our commitments to provide fixed and mobile equipment to key locations, and continue to ensure the effective use and transition to full sustainment of the deployed equipment by Partner Countries. The budget in FY 2013 provides for installation of fixed equipment including discreet installations, increased scope for mobile detection and exercises, and sufficient funding to ensure the effective use and transition to full sustainment of the deployed equipment by Partner Countries. In FY 2014 and beyond, funding exists for mobile detection for law enforcement, exercises, national communications integration, and sustainability. The scope of the Core Program is being reviewed to determine the appropriate level of funding to meet nonproliferation objectives.

The SLD Megaports Initiative has signed agreements with 35 countries and The American Institute for Taiwan to install radiation detection systems to scan cargo containers for nuclear and other radioactive materials regardless of the container destination or point of origin. To date, Megaports has completed equipment installation at 40 international seaports and is working towards implementation at an additional 5 ports in FY 2012. Funding in FY 2013 and beyond will ensure the effective use and transition to full sustainment of the deployed equipment by Partner Countries, but does not include funding for additional Megaports deployments. The scope of the Megaports program is being reviewed to determine the appropriate level of funding to meet nonproliferation objectives.

Benefits

- By strengthening the capability of foreign governments to deter, detect, and interdict illicit trafficking in nuclear and other radioactive materials, the program complements and reinforces material protection, control, and accounting enhancements at storage and handling sites as well as radiation detection at the borders of, and within, the United States, thus serving as a part of the US layered defense strategy.
- Provides a focus on preventing nuclear smuggling in support of the Nuclear Summit agenda.
- Reduces the chances of an adversary gaining access to special nuclear material via the global air passenger and cargo system, the global maritime system, and land routes by providing detection capability to law enforcement and border security officials for use at legal checkpoints. Through close coordination and collaboration with partner countries and other donor countries and organizations, ensures that international radiation detection work is carried out in the most cost efficient and technically appropriate manner.
- Improves the ability of law enforcement to detect and interdict trafficking of nuclear materials by providing mobile and man-portable detection equipment for use throughout the country in intelligence driven operations.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
Second Line of Defense		
FY 2011		**265,163**
FY 2012		**262,072**
FY 2013		**92,574**
FY 2014-FY 2017		**224,058**
Core Program		
FY 2011	• Installed radiation detection equipment at an additional 55 foreign sites in Russia, Estonia, Kazakhstan, Azerbaijan, Latvia, Romania, Bulgaria, Ukraine, Kyrgyzstan, Poland, Mongolia, Croatia, and Armenia, increasing the total sites with completed installations to 421 Installed National Communications Systems in 2 more countries. Continued Russia communications network activities. • Training was provided in equipment maintenance and alarm response to law enforcement personnel in these countries Estonia, Kazakhstan, Lithuania, Latvia, Romania, Bulgaria, Ukraine, Kyrgyzstan, Poland, Mongolia, Croatia, and Mexico. • Continued to provide mobile detection capability at points internal to borders to Slovakia, Hungary, Croatia, Bulgaria, and Jordan. • Provided 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 for over 421 sites in countries where the SLD Core Program has installed such equipment. • Continued to maintain equipment installed by the U.S. Department of Defense in Uzbekistan. In addition to ongoing activities to implement the SLD Core program in countries of strategic importance, efforts to deploy radiation detection technologies at key land border crossings, airports, and seaports in support of United Nations Security Council Resolutions and interagency priorities continued.	**140,279**
FY 2012	• Complete installation of radiation detection equipment at an additional 30 sites, increasing the total sites with completed installations to 450. • Initiate installation of National Communications Systems in 5 countries and continue Russia national communications network activities. • Provide training in equipment maintenance and alarm response in eleven countries. • Provide mobile detection capability to law enforcement personnel for use at internal checkpoints in nine countries. • Provide sustainability and transition support in the form of maintenance and/or repair of equipment, refresher training, and/or technical collaboration and support for radiation detection systems for over 192 sites in countries where the SLD Core Program has installed such equipment. • Continue to maintain equipment installed by the U.S. Department of Defense in Uzbekistan and transition sustainability responsibilities to the partner country. In addition to ongoing activities to implement the SLD Core program in countries of strategic importance, efforts to deploy radiation detection technologies at key land border crossings, airports, and seaports in support of interagency priorities will continue.	**129,402**
FY 2013	• Provide radiation detection equipment to sites in 12 countries. • Install National Communications Systems in 5 countries.	**73,000**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Second Line of Defense		
	• Continue providing training in equipment maintenance and alarm response to law enforcement personnel in 13 countries. • Continue to provide mobile detection capability to law enforcement personnel for use at internal checkpoints in up to 10 countries. • Continue to provide sustainability and transition support in the form of maintenance and/or repair of equipment, refresher training, and/or technical collaboration and support for radiation detection systems at approximately 127 sites in countries where the SLD Core Program has installed such equipment. • Continue to maintain equipment installed by the U.S. Department of Defense in Uzbekistan.	
FY 2014-FY 2017	• Provide mobile and man-portable detection capability to 23 additional countries 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 14 countries. • 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 to countries where the SLD Core Program has installed such equipment. Note: SLD will be actively transitioning full responsibility for maintenance of and training on installed SLD systems to Partner Countries from FY 2012 through FY 2017, with planned completion in 2017. To support ongoing improvement 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 exchanges after Government of Uzbekistan (GOU) assumption of maintenance and training activities. • In FY 2014, continue provision of maintenance, sustainability, training and exercises. • In FY 2015, continue provision of maintenance, sustainability, training and exercises. • In FY 2016, continue provision of maintenance, sustainability, training and exercises.	**224,058**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Second Line of Defense		
Megaports		
FY 2011	• Completed installations at five additional Megaports (increasing the number of completed ports to 39). This involved providing site surveys, engineering assessments, radiation detection equipment design procurement and installation. • Developed a simplified deployment and equipment approach for lower volume, yet strategic ports in lower income countries. • Continued deployments of technologies to address the challenge of scanning transshipped containers, including deployment of a Radiation Detection Straddle Carrier (RDSC) to Jamaica and the production of the first of the second-generation Mobile Radiation Detection and Identification System (MRDIS) units, which will be used to scan containers at key transshipment ports around the world. • Continued outreach to new potential partner countries. • Provided 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 in countries where the SLD Megaports Initiative has installed such equipment.	**124,884**
FY 2012	• Complete installations at six additional Megaports (increasing the number of completed ports to 45). This involves providing site surveys, engineering assessments, radiation detection equipment design procurement, installation and system level acceptance testing (SLAT). • Deploy Mobile Radiation Detection and Identification System (MRDIS) to two ports. • 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 for 36 ports in countries where the SLD Megaports Initiative has installed such equipment.	**132,670**
FY 2013	• 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 in countries where the SLD Megaports Initiative has installed such equipment.	**19,574**
FY 2014-FY 2017	• 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 in countries where the SLD Megaports Initiative has installed such equipment.	**0**

Capital Operating Expenses and Construction Summary

Capital Operating Expenses[a]

(dollars in thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Capital Operating Expenses			
General Plant Projects	0	0	0
Capital Equipment	5,574	5,697	5,822
Total, Capital Operating Expenses	**5,574**	**5,697**	**5,822**

Outyear Capital Operating Expenses

(dollars in thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request
Capital Operating Expenses				
General Plant Projects	0	0	0	0
Capital Equipment	5,950	81	6,215	6,352
Total, Capital Operating Expenses	**5,950**	**81**	**6,215**	**6,352**

[a] Funds are appropriated for Operations and Maintenance, which includes operating expenses, capital equipment and general plant projects. The program no longer budgets separately for capital equipment and general plant projects. Funding shown reflects estimates based on actual FY 2011 obligations.

Fissile Materials Disposition
Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Fissile Materials Disposition			
U.S. Surplus Fissile Materials Disposition			
Operations and Maintenance (O&M)			
U.S. Plutonium Disposition	200,400	205,632	498,979
U.S. Uranium Disposition	25,985	26,000	29,736
Subtotal, O&M	**226,385**	**231,632**	**528,715**
Construction	575,788	452,754	388,802
Total, U.S. Surplus Fissile Materials Disposition	**802,173**	**684,386**	**917,517**
Russian Surplus Fissile Materials Disposition			
Russian Materials Disposition	25	1,000	3,788
Total, Fissile Materials Disposition	**802,198**	**685,386**	**921,305**

Out-Year Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request
Fissile Materials Disposition				
U.S. Surplus Fissile Materials Disposition				
Operations and Maintenance (O&M)				
U.S. Plutonium Disposition	793,506	908,906	930,967	957,881
U.S. Uranium Disposition	30,058	33,546	33,453	30,514
Subtotal, O&M	**823,564**	**942,452**	**964,420**	**988,395**
Construction	118,661	9,773	2,805	0
Total, U.S. Surplus Fissile Materials Disposition	**942,225**	**952,225**	**967,225**	**988,395**
Russian Surplus Fissile Materials Disposition				
Russian Materials Disposition	7,775	7,775	7,775	7,775
Total, Fissile Materials Disposition	**950,000**	**960,000**	**975,000**	**996,170**

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
Consolidated Appropriations Act, 2012 (P.L. 112-74)
National Defense Authorization Act for FY 2012 (P.L. 112-81)

Overview

The Fissile Materials Disposition (FMD) program supports the Secretary's goal of enhancing nuclear security through defense, nonproliferation, and environmental efforts by eliminating surplus Russian weapon-grade plutonium and surplus United States (U.S.) weapon-grade plutonium and highly enriched uranium.

Program Accomplishments and Milestones

In FY 2011, FMD achieved a number of significant accomplishments. The amended U.S.-Russia Plutonium Management and Disposition Agreement (PMDA), which commits each country to dispose of no less than 34 metric tons of excess weapon-grade plutonium (enough combined material for approximately 17,000 nuclear weapons), was ratified by the Russian Duma and entered into force when the U.S. and Russia exchanged diplomatic notes in July 2011. To implement the PMDA, FMD has made considerable progress on the construction of the U.S. Mixed Oxide (MOX) Fuel Fabrication Facility (MFFF), while achieving over five million safe work hours. More than 98,000 cubic yards of reinforced concrete and 17,000 tons of rebar have been installed, and construction on the Technical Support Building started (the 12th of a total of 16 separate buildings supporting the MOX program). The program also completed civil structural construction of the Waste Solidification Building (WSB) and eliminated a cumulative 124 metric tons (MT) of U.S. surplus highly enriched uranium (enough for more the 2,600 nuclear weapons) by down-blending it to low-enriched uranium (LEU) for peaceful use as fuel in power and research reactors.

Explanation of Changes

The FY 2013 request for Fissile Materials Disposition is $921 million; a 34 percent increase above the FY 2012 level.

The total increase of $236M from the FY 2012 levels predominately supports the beginning of cold start-up activities for the MOX project.

No funding has been requested for the PDCF line item. The Department plans to cancel and closeout this line item project by the end of FY 2012. The Department is considering the use of existing facilities to perform pit disassembly and conversion functions in order to assure a steady state feed supply to MFFF. See U.S. Surplus Fissile Materials Disposition – U.S. Plutonium Disposition Overview for details.

Program Planning and Management

The office of Fissile Materials Disposition (FMD) supports NNSA and DOE strategic objective 3: "Secure Our Nation" by enhancing nuclear security and reducing global nuclear dangers through efforts to improve the security of weapons-usable materials in Russia. The updated measures are compiled and provided in the FY2013 Annual Performance Plan (APP) Report. The GPRA Unit Program sections of the APP identify the corporate performance measures that the programs use to track progress toward these and other outcomes. FMD performs regularly reviews to validate work scope and funding priorities, engages in annual planning and implementation reviews of all work scope across the Future Years Nuclear Security Plan (FYNSP) and allocates resources to fund the highest priority work.

Strategic Management

FMD will implement the following strategies:

1. **Interfaces, Partnerships, and Working Relationships:** NNSA partners with several key U.S. agencies, international organizations, and non-governmental organizations across its programs to further our nonproliferation goals. FMD coordinates with the Department of State and Nuclear Regulatory Commission on selected aspects of the FMD program, and works with the IAEA to develop a monitoring and inspection regime for the PMDA. FMD also works with the Tennessee Valley Authority (TVA), WesDyne International, LLC, and Nuclear Fuel Services, Inc. in the disposition of surplus U.S. highly enriched uranium (HEU).

2. **Disposing of Surplus U.S. and Russian Weapon-Grade Fissile Material:** FMD is working towards disposing of inventories of surplus Russian and U.S. weapon-grade plutonium and surplus U.S. HEU. The FY 2013 budget request supports continuing efforts to dispose of surplus U.S. HEU including support for the MOX Backup LEU Inventory Project. It also supports the design and construction of key facilities and equipment required to dispose of surplus U.S. plutonium as well as support programmatic needs for MOX fuel irradiation, feedstock, transportation, and project integration. In addition, funds will be used to support implementation of a revised program for disposition of surplus Russian weapon-

grade plutonium based on the use of existing and planned fast reactors operating under stringent nonproliferation conditions. These activities are of critical importance because they help to ensure that surplus fissile materials in the U.S. and Russia are permanently disposed of, and demonstrate U.S. and Russian leadership in working towards a nuclear-free world.

Two external factors present challenges to the overall achievement of the programs' strategic goal:

- Political and economic uncertainties in Russia, and
- Lack of experienced suppliers and subcontractors that can meet Nuclear Quality Assurance (NQA-1) standards for work.

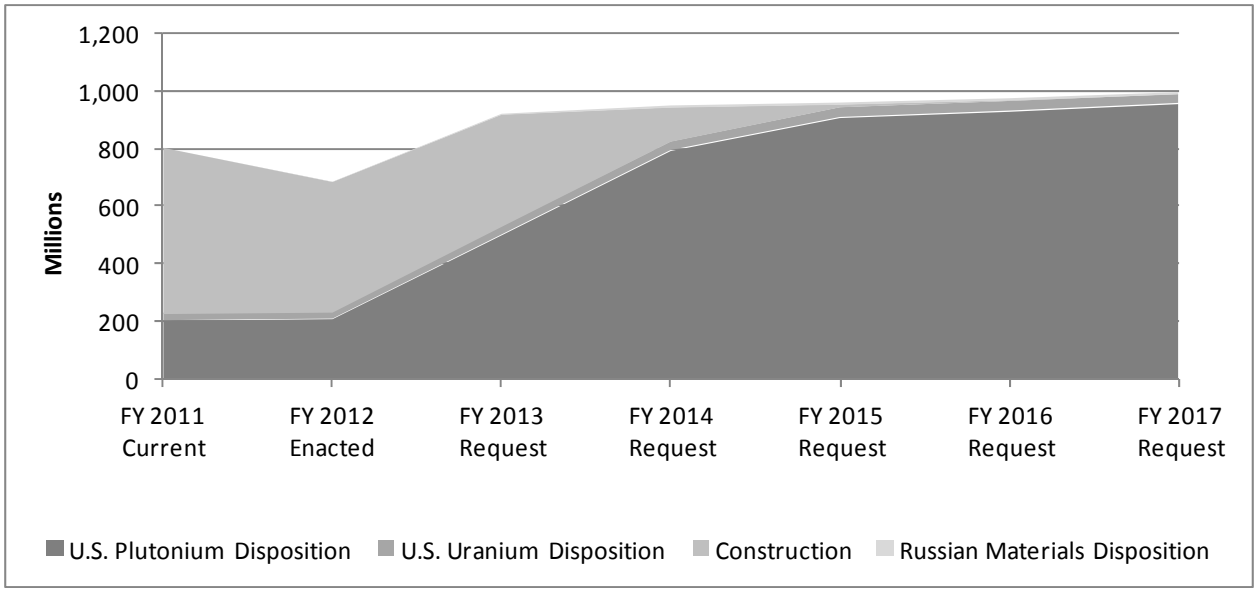
Major Outyear Priorities and Assumptions

The outyear projections for the FMD program total approximately $3,881,170,000
(FY 2014 – FY 2017). 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 permanently disposed of and demonstrate U.S. and Russian leadership in working towards a world free of nuclear weapons.

Program Goals and Funding

The Fissile Materials Disposition program's corporate performance measures support the NNSA goal of "Securing our Nation," and the strategic objectives of reducing global nuclear dangers, enhancing nonproliferation efforts, and the security of nuclear materials. These goals and objectives are accomplished by disposing of surplus weapon-grade plutonium and highly enriched uranium in the U.S., and working with Russia to dispose of Russian surplus weapon-grade plutonium under the U.S. - Russia Plutonium Management and Disposition Agreement. The Office of Fissile Materials Disposition is designing and constructing facilities at the Savannah River Site to dispose of at least 34 metric tons of surplus U.S. weapon-grade plutonium through the fabrication and irradiation of mixed oxide fuel in domestic nuclear reactors. In addition, FMD also disposes of U.S. highly enriched uranium (HEU) that has been declared surplus to defense needs by down-blending it into low enriched uranium which can no longer be used for nuclear weapons.

Figure 1: Relative Out-Year Funding Priorities in Defense Nuclear Nonproliferation - Fissile Materials Disposition



Explanation of Funding and/or Program Changes

	(Dollars in Thousands)		
	FY 2012 Enacted	FY 2013 Request	FY 2013 vs. FY 2012
Fissile Materials Disposition			
U.S. Surplus Fissile Materials Disposition			
Operations and Maintenance (O&M)			
· U.S. Plutonium Disposition	**205,632**	**498,979**	**+293,347**
The increase primarily supports the beginning of cold start-up activities for the MOX project, the shift of work scope to provide steady state feedstock to MFFF in lieu of the cancelled PDCF line item project, the initiation of activities required to convert depleted uranium required for MOX operations, and qualification of alternative MOX fuel designs by multiple vendors.			
· U.S. Uranium Disposition	**26,000**	**29,736**	**+3,736**
The increase supports the continuation of the MOX Backup LEU Inventory Project and the beginning of material packaging and deliveries to a down-blending contractor for a new multi-year HEU disposition project.			
Total, U.S. Plutonium and Uranium Disposition (O&M)	**231,632**	**528,715**	**+297,083**
Construction			
· 99-D-141-01, PDC	**0**	**0**	**0**
Line Item Project is cancelled.			
· 99-D-141-02, WSB	**17,582**	**0**	**-17,582**
The decrease reflects the completion of the project.			
· 99-D-143, MOX Fuel Fabrication Facility (MFFF)	**435,172**	**388,802**	**-46,370**
The decrease primarily reflects the completion of long-lead procurements.			
Total, Construction	**452,754**	**388,802**	**-63,952**
Total, U.S. Surplus Fissile Materials Disposition	**684,386**	**917,517**	**+233,131**

	(Dollars in Thousands)		
	FY 2012 Enacted	FY 2013 Request	FY 2013 vs. FY 2012
Russian Surplus Fissile Materials Disposition			
· U.S. Support for Russian Plutonium Disposition (funds spent in U.S.)	**1,000**	**3,788**	**+2,788**
This increase reflects U.S. obligations to support disposition of weapon-grade plutonium in Russia as uncosted balances are depleted.			
· U.S. Support for Russian Plutonium Disposition (funds spent in Russia)	**0**	**0**	**0**
No change.			
Total, Russian Surplus Fissile Materials Disposition	**1,000**	**3,788**	**+2,788**
Total Funding Change, Fissile Materials Disposition	**685,386**	**921,305**	**+235,919**

U.S. Surplus Fissile Materials Disposition - U.S. Plutonium Disposition
Overview

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 long-standing U.S. policy and the amended U.S. - Russia Plutonium Management and Disposition Agreement (PMDA). Three key U.S. facilities/capabilities in various stages of design and/or construction are needed to accomplish this goal: a Mixed Oxide (MOX) Fuel Fabrication Facility (MFFF) to fabricate plutonium oxide into MOX fuel for irradiation in domestic reactors; a pit disassembly and conversion capability to disassemble nuclear weapon pits and convert the resulting plutonium metal to a powder form suitable for MOX fuel; and a Waste Solidification Building (WSB) to handle waste from the MFFF and pit disassembly operations. The MFFF, at the Savannah River Site (SRS), is scheduled to start operations to produce MOX fuel in October 2016. The WSB, also at SRS, is scheduled to begin operations in September 2013 to support MFFF cold start-up activities. FMD has identified approximately 10 MT of plutonium feed material that can be used as early feedstock for MFFF in advance of a pit disassembly and conversion capability that will provide steady state feedstock.

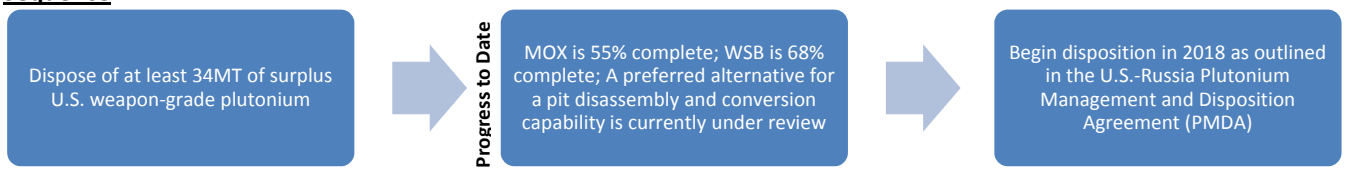
Existing section 4306 of the Atomic Energy Defense Act, 50 U.S.C. 2566, contains obsolete notional dates for the MFFF, which do not reflect the current, independently validated baseline or current plans and options for hot start-up of the MFFF. The extant statute also contains certain requirements for corrective actions, suspension of plutonium shipments, removal of plutonium, and payments to South Carolina of up to $100 million dollars per year based on these obsolete dates.

Based on this statute, the Department could incur additional expenditure of resources in order to comply with requirements triggered by the obsolete notional dates under the current law. The current statute provides that if the MOX production objective (production of not less than 1 MT of MOX fuel per year) is not met by January 1, 2012, the Department must remove from the State of South Carolina not less than 1 MT of defense plutonium by January 1, 2014. Such a requirement is not possible to satisfy. This requirement is not dependent upon any report, corrective action, or similar trigger -- it is strictly implemented upon the trigger date of January 1, 2012. Therefore, the Department will submit a legislative change proposal to amend the law.

The proposed legislation would result in the revision of the 2012 target date for the MOX production objective to December 31, 2018, throughout section 4306 and revision of the other dates in section 4306 accordingly, assuming the appropriation of necessary funding. The revised date is consistent with the current plan for the hot start-up of the MFFF, which includes the fabrication of the first eight MOX fuel assemblies.

The current law also includes a date for finishing the processing of 34 MT of plutonium through the facility. The date to complete the 34 MT mission should be revised to December 31, 2039, to reflect the current strategy for hot start-up and operation of the MFFF, which calls for production to ramp up for a number of years before operating at full production, resulting in a 20 year planned operating period of the MFFF.

Sequence



Benefits

- Permanently disposes of dangerous weapon-grade nuclear material with a half-life of thousands of years. Once converted to spent nuclear fuel, the plutonium can no longer be readily used for nuclear weapons.
- Saves hundreds of millions of dollars per year in safety, security, and storage costs by enabling the consolidation of surplus plutonium at the SRS from locations in New Mexico, California, Texas, and Washington.

- Demonstrates that the U.S. is living up to its nonproliferation commitments by drawing down its nuclear arsenal in a transparent and irreversible manner.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
U.S. Plutonium Disposition		
FY 2011		**200,400**
FY 2012		**205,632**
FY 2013		**498,979**
FY 2014-FY 2017		**3,591,260**
MOX Irradiation, Feedstock, and Transportation		
FY 2011	• Supported MOX fuel qualification and irradiation; studies of potential MOX fuel use in up to five Tennessee Valley Authority (TVA) reactors; obtaining plutonium and depleted uranium oxide feedstock; storage of feed materials; development of transportation infrastructure; completion of Post Irradiation Examinations (PIE) of irradiated MOX fuel lead test assemblies; and Los Alamos National Laboratory (LANL) disassembly of nuclear weapon pits and conversion of the resulting plutonium metal into oxide using the Advanced Recovery and Integrated Extraction System (ARIES) process as part of the campaign to produce 2 MT of plutonium feedstock for initial operation of the MFFF. Other ongoing activities include: further characterization of non-pit feed materials for MFFF; storage and surveillance of surplus plutonium at Pantex and LANL; packaging of surplus pits for shipment from Pantex to LANL for ARIES conversion activities; and development of MOX fresh fuel shipping containers for boiling water reactor and pressurized water reactor MOX fuels. New containers were procured and fabricated to transport pits from Pantex to SRS and LANL, and to transport plutonium oxide from LANL and PDC to MFFF. Packaging and loading equipment development continued.	**69,010**
FY 2012	• Funding 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. • **Irradiation**—Funding supports qualification, licensing, and irradiation of MOX fuel in existing nuclear reactors. Supports completion of studies of MOX fuel use in TVA reactors, submission of topical reports to the Nuclear Regulatory Commission, and qualification of MOX fuel designs for pressurized water reactors and boiling water reactors from multiple fuel suppliers, and execution of fuel supply agreements with TVA and potentially other utilities. • **Feedstock**—Funding supports activities necessary to characterize and convert plutonium and depleted uranium into chemical forms that can be used to fabricate MOX fuel. LANL continues to disassemble limited quantities of nuclear weapon pits and convert the resulting plutonium metal into an oxide form using the ARIES process. Operations of ARIES are part of the 7-year campaign to produce 2 MT of feedstock to be used during start-up and initial operation of the MFFF. Activities are initiated at the Savannah River Site to perform start-up preparations for dissolution of existing non pit plutonium in H Canyon and oxide production in HB-Line suitable for MOX Fuel. The campaign will support dissolution of up to 3.7MT of non-pit plutonium over the following 5 years. Activities to support the conversion of DOE-owned depleted uranium hexafluoride to uranium dioxide necessary for MOX fuel fabrication continue. Activities to further characterize non-pit feed materials for MFFF also continue. • **Storage**—Funding supports safe storage of surplus weapon-grade plutonium, both pits and oxide, including surveillance and monitoring activities. Continue to store surplus	**86,967**

Fiscal Year	Activity	Funding (Dollars in Thousands)
U.S. Plutonium Disposition		
	plutonium at Pantex and LANL; and continue to package surplus pits for shipment from Pantex to LANL for ARIES conversion activities. • **Transportation**—Funding supports the development, certification, and maintenance of containers and fuel loading equipment to transport pits, plutonium oxide, and fresh MOX fuel necessary for plutonium disposition. Continue to develop a MOX fresh fuel shipping container and a new container for transporting MOX fuel for boiling water reactors. Continue to procure containers for transportation of plutonium pits and plutonium oxide. Continue packaging and loading equipment development.	
FY 2013	• Irradiation—Funding supports qualification, licensing, and irradiation of MOX fuel in existing nuclear reactors. Supports completion of studies of MOX fuel use in TVA reactors, submission of topical reports to the Nuclear Regulatory Commission, qualification of MOX fuel designs for pressurized water reactors and boiling water reactors from multiple fuel suppliers, designs of necessary reactor modifications, and execution of fuel supply agreements with TVA and potentially other utilities. • Feedstock—Funding supports activities necessary to characterize and convert plutonium and depleted uranium into chemical forms that can be used to fabricate MOX fuel: (1) continue to disassemble nuclear weapon pits and convert the resulting plutonium metal into an oxide form using the LANL ARIES process as part of the 7-year campaign to produce at least 2 MT of feedstock to be used during start-up and initial operation of the MFFF; (2), preliminary design of equipment into existing gloveboxes, process development, and preliminary planning of operational staffing to increase production at LANL to provide steady state feedstock to MFFF; (3) initiate processing of existing plutonium metals and oxides in the H-Canyon and HB Line at Savannah River Site to provide early plutonium feedstock to MFFF as part of a five year campaign to process up to 3.7MT of material, including the procurement and installation of plutonium oxide canning equipment compliant with DOE-STD-3013; (4) conduct preliminary design of furnaces and gloveboxes, process development, safety analysis, and licensing support to install plutonium oxidation capability in MFFF; (5) continue to support the conversion of DOE-owned depleted uranium hexafluoride to uranium dioxide necessary for MOX fuel fabrication; and (6) continue to further characterize non-pit feed materials for MFFF. • Storage—Funding supports safe storage of surplus weapon-grade plutonium, both pits and oxide, including surveillance and monitoring activities. Continue to store surplus plutonium at Pantex and LANL; and continue to package surplus pits for shipment from Pantex to LANL for ARIES conversion activities. • Transportation—Funding supports the development, certification, and maintenance of containers and fuel loading equipment to transport pits, plutonium oxide and metal, and fresh MOX fuel necessary for plutonium disposition. Continue to develop a MOX fresh fuel shipping container and a new container for transporting MOX fuel for boiling water reactors. Continue to procure containers for transportation of plutonium pits and plutonium oxide and metal. Continue packaging and loading equipment development	**230,110**
FY 2014-FY 2017	• Continue expanded plutonium oxide and metal feedstock production at LANL; continue plutonium oxide feedstock production through H-Canyon and HB Line at the Savannah River Site; implement installation of metal oxidation capability in existing space in MFFF; submit Licensing Topical Reports to the Nuclear Regulatory Commission (NRC) for Boiling Water Reactor (BWR) and Pressurized Water Reactor (PWR) MOX fuel designs; respond to NRC Requests for additional information; obtain reactor license	**1,892,837**

Fiscal Year	Activity	Funding (Dollars in Thousands)
U.S. Plutonium Disposition		
	amendments for MOX fuel use; implement initial reactor modifications necessary for MOX fuel use; begin conversion of depleted uranium hexafluoride to uranium dioxide for use as blendstock for MOX fuel; continue shipments of surplus pits from Pantex to Los Alamos and begin pit shipments to SRS; continue procurement and maintenance of packages for shipping surplus pits, plutonium oxide and metal, and MOX fuel assemblies.	
MFFF Other Project Cost Activities (OPC)		
FY 2011	• Supported continuing management oversight and licensing activities as well as planning for start-up and operation of the MFFF; design and testing support of the aqueous polishing process, environmental permitting, and the monitoring and support for the NRC review of the possession and use license application.	**4,000**
FY 2012	• Support project activities such as management oversight, design reviews, facility start-up, testing, and licensing. • Continue management oversight and licensing activities as well as planning for start-up and operation of the MFFF along with safety, security, and physical protection activities. • Continue to fund the design and testing support of the aqueous polishing process located at the front end of the MFFF, environmental permitting, and the monitoring and support for the Nuclear Regulatory Commission (NRC) review of the possession and use-license application for the MFFF. • Supports ramp-up of operating start-up staffing and related training, NNSA oversight, and additional NRC inspection levels.	**47,035**
FY 2013	• Continue development of a procedure required to operate and maintain the plant; begin training of operating personnel at reference plants in France; continue licensing support; support and provide operations input for the testing and installation of key equipment; and continue management oversight and licensing activities along with safety, security, and physical protection activities.	**180,669**
FY 2014-FY 2017	• Continue training of personnel necessary to qualify the operating staff for hot operations; complete demonstration of the functionality of the Aqueous Polishing (AP) plant including water and acid cold run activities; verify mechanical operability of MOX Plant (MP); verify operability and test all support systems of the plant including but not limited to the air systems, electrical systems, ventilation systems, water systems, and chemical supply systems; and validate all procedures in the plant required for hot operations.	**470,299**
MFFF Operating Expenses (O&M)		
FY 2011	• Supported activities, including planning and support, for hot start-up testing and operations of the MFFF, as well as, efforts to support contract proposal review for Early Option 2 in support of NNSA.	**865**
FY 2012	• Support activities associated with hot start-up testing and operations of the MFFF. FY 2013 activities include efforts to maintain the hot start-up bases of estimate and schedule, including analysis and review of changes. • Support the costs associated with background investigations and security clearances for MFFF operators.	**100**
FY 2013	• Continue background investigations and process personnel clearances for MOX Services' personnel necessary to begin hot operations; continue modifications to early Option 2 baseline production of 8 fuel assemblies; execute long-lead contracts for fuel	**28,476**

Fiscal Year	Activity	Funding (Dollars in Thousands)
U.S. Plutonium Disposition		
	assembly hardware components and in-plant storage/material transfer containers.	
FY 2014-FY 2017	• Maintain changes to the hot start-up baseline plan; complete background investigations and clearances necessary to enable facility start-up; support operations and maintenance of completed permanent buildings; begin transition into hot start-up; begin receiving nuclear materials upon NRC approval; qualify processes in the analytical laboratory, the Aqueous Polishing, and the MOX Fuel Fabrication areas of the plant; and train staffing required for hot start-up to begin.	**901,696**
Waste Solidification Building (WSB) (OPC)		
FY 2011	• Supported planning for facility operations (development of operating procedures and training program), program development activities (start-up testing, spare parts, emergency preparedness), waste management planning (development of waste compliance plans), interface management, and use of the Smart Plant foundation database.	**21,500**
FY 2012	• Support planning for facility operations (development of operating procedures and training program), program development activities (start-up testing, spare parts, emergency preparedness), waste management planning (development of waste compliance plans), interface management, and use of the Smart Plant foundation database (a software relationship management tool that provides the capability to transition engineering/project documents from design/construction/testing to eventual operations while maintaining requirements and configuration control).	**23,345**
FY 2013	• Complete integrated system testing and turnover to operations; complete contractor and NNSA readiness assessments; complete testing for operator proficiency; perform first time validation of operating and maintenance procedures; validate operational programs; implement surveillance programs for process equipment; obtain Acquisition Executive approval of CD-4.	**25,798**
FY 2014-FY 2017	• Project complete.	**0**
Waste Solidification Building (WSB) Operating Expenses (O&M)		
FY 2011	• Not applicable.	**0**
FY 2012	• Not applicable.	**0**
FY 2013	• Support approximately 54 site M&O contractor staff required for operations and maintenance; receive initial MFFF system water flushes and test fluids; evaluate and optimize WSB processes and cementation chemistry; perform preventive maintenance and repair of equipment; train and qualify operators and maintenance staff; update permits for the facility.	**18,541**
FY 2014-FY 2017	• Ramp up operations, maintenance, and facility support personnel from 64 in FY 2014 to approximately 111 by FY 2015; perform preventative maintenance and repair of equipment; implement operator continuous training and maintenance of qualifications; maintain facility permits; receive MFFF system water flushes and test fluids; begin receiving MFFF chemical flushes in FY 2015; continue evaluation, adjustment and optimization of WSB processes and cementation chemistry; conduct supplemental contractor Readiness Assessment and Operational Readiness Review prior to receipt of MFFF radioactive waste streams beginning in FY 2016.	**211,552**

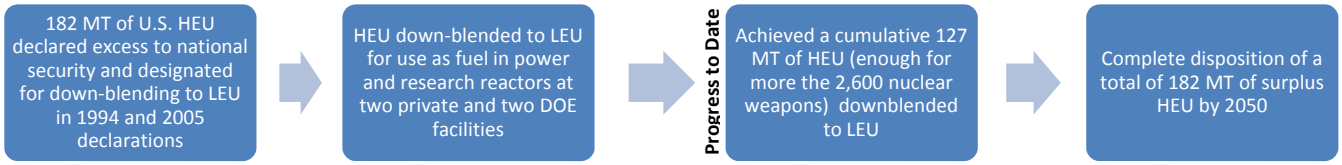
Fiscal Year	Activity	Funding (Dollars in Thousands)
U.S. Plutonium Disposition		
Pit Disassembly and Conversion (PDC) Project (OPC)		
FY 2011	• Supported Critical Decision package development and activities needed to support project management, risk management, design authority, design oversight and reviews, planning for facility operations (development of operating procedures and training program), program development activities (start-up testing, planning spare parts, and emergency preparedness), waste management planning (development of waste compliance plans), interface management, and use of the Smart Plant foundation database (a software relationship management tool that provides the capability to transition engineering/project documents from design/construction/testing to eventual operations while maintaining requirements and configuration control). • LANL continued demonstration and testing of equipment.	**84,000**
FY 2012	• Support preparation of a project closeout plan; suspension and closeout of project contracts, work authorizations, and task orders; conducting project management closeout activities in accordance with DOE O 413.3B; development and implementation of a Records Management Plan; continuation of LANL D&T activities such as Direct Metal Oxidation (DMO) furnace and hydride/dehydride testing and support initial development of conceptual design activities which are applicable to the preferred alternative; and transition and closeout for the PDCF line item project.	**26,442**
FY 2013	• The Department's preferred alternative is no longer a new stand-alone Pit Disassembly and Conversion Facility (PDCF) and therefore no funds beginning in FY 2013 and out years will be requested for this project due to cancellation of the line item project. An Amended Notice of Intent has been issued into the Federal Register announcing DOE's intent to revise the scope of the Surplus Plutonium Disposition (SPD) Supplemental Environmental Impact Statement (SEIS) primarily to add the Department's preferred alternative to use some combination of facilities at LANL, MFFF, and H-Canyon with a small glovebox capability in K-Area at SRS, to disassemble pits and produce plutonium feed for MFFF. As a result, the existing PDCF line item project to build a standalone facility is currently no longer necessary and is expected to be closed out by the end of FY 2012.	**0**
FY 2014-FY 2017	• Project is cancelled and activities associated with the preferred alternative for a pit disassembly and conversion capability will be funded under the MIFT program.	**0**
Plutonium Disposition Integration Program		
FY 2011	• Supported the integration of the MFFF, WSB, and pit disassembly and conversion activities to ensure that plutonium disposition is successful and implemented in a manner that supports the program's objectives. This included the development of an integrated program plan and schedule and a risk management plan to manage risk and uncertainty within the program. Funds also supported the development and maintenance of infrastructure activities that are required to support the interrelated plutonium disposition construction projects. In addition, funding supported the development of an alternatives study for a pit disassembly and conversion capability. The study considered technical approach, cost (project costs, lifecycle facility operational costs, security costs, and transportation costs), schedule, authorization basis changes, environmental authorizations, safeguards and security, impacts to other programs and missions, and risks.	**21,025**
FY 2012	• Supports the integration of the MFFF, WSB, and pit disassembly activities to ensure that the projects and processes are managed in an integrated manner to accomplish the Department's plutonium disposition objective in a safe, secure, and environmentally	**21,743**

Fiscal Year	Activity	Funding (Dollars in Thousands)
U.S. Plutonium Disposition		
	sound manner. This includes the maintenance of an integrated program plan and schedule and programmatic risk analyses to assess and manage risk and uncertainty within the program. • Supports development and maintenance of infrastructure activities (such as road maintenance, power sub-station maintenance, fire protection, etc.) that are required to support the three interrelated projects, previously funded under Supporting Activities.	
FY 2013	• Conduct studies and analyses to support program integration activities including feed materials and production activities; maintain and update Program Execution Plans , Programmatic Risk Analyses, and other program guiding documents; establish site use permits as required; prepare and maintain interface control documents; review QA requirements and procedures; perform vendor/contractor surveillance/audits; conduct assessments and erosion control maintenance in support of all plutonium disposition activities ; maintain and upgrade as needed common infrastructure and facilities; funds activities which support Historically Black Colleges and Universities for DNN activities.	**15,385**
FY 2014-FY 2017	• Continue to conduct studies and analyses to support program integration activities with shifting focus to feed materials scheduling, shipment planning, and production commitments; maintain and update the Program Execution Plans , programmatic risk assessments, and integrated program/project schedules; continue to integrate planning, budgeting, scheduling, reporting, staffing, administrative support , and information management for the program; continue to maintain site features common to all plutonium disposition activities including establishing site use permits, lay-down areas, utility studies, MOUs and interface control documents; review QA requirements and procedures; perform vendor/contractor surveillance/audits; conduct condition and regulatory compliance assessments and erosion control maintenance for the WSB and MFFF; continue integrating WSB facility operations with other DOE activities at SRS and at offsite waste disposal facilities.	**114,876**

U.S. Uranium Disposition
Overview

This funding supports the disposition of surplus U.S. HEU by down-blending it to LEU. Several disposition activities are on-going and additional projects are being considered as HEU becomes available from planned weapon dismantlements.

Sequence



Benefits

- Disposes U.S. highly enriched uranium (HEU) that has been declared surplus to defense needs by down-blending it into low enriched uranium (LEU). Once down-blended, the material can no longer be used for nuclear weapons.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Supported packaging and shipping HEU at Y-12 for delivery to Savannah River Site for inclusion in the off-specification HEU project with Tennessee Valley Authority (TVA), and reimbursement of certain TVA HEU processing costs; continue down-blending of HEU to LEU for use as fuel for foreign research reactors as part of the Global Threat Reduction Initiative; complete HEU shipments to Nuclear Fuel Services for the MOX Backup LEU Inventory Project; and prepare plans to process, characterize, and package additional surplus HEU for down-blending and ultimate disposition.	**25,985**
FY 2012	• Research Reactor Fuel Project: Continue down-blending of HEU to LEU for use as fuel for foreign research reactors as part of the Global Threat Reduction Initiative. • MOX LEU Inventory Project: Complete down-blending of HEU at Nuclear Fuel Services (NFS) by the end of 2012. The resulting LEU will create an inventory for potential backup use by utilities participating in the MOX plutonium disposition program. • Reliable Fuel Supply Project: Complete down-blending in December 2011. All HEU shipments were provided to the contractor in December 2009. Barter funding is used to pay the down-blending contractor. • Planning for Additional Projects: Prepare plans to process, characterize, and package additional surplus HEU for down-blending and ultimate disposition. The material is located at various sites in the DOE complex, including Y-12, SRS, LANL, Idaho National Laboratory, and Lawrence Livermore National Laboratory.	**26,000**
FY 2013	• Continue research reactor fuel project and MOX Backup LEU Inventory Project; begin material deliveries to down-blending contractor for new multi-year disposition project with up to 20 MT of surplus HEU.	**29,736**
FY 2014-FY 2017	• Continue research reactor fuel project and new multi-year disposition project with up to 20 MT of surplus HEU; complete MOX Backup LEU Inventory Project.	**127,571**

Construction
Overview

In order to dispose of surplus weapon-grade plutonium in accordance with the U.S.-Russia Plutonium Management and Disposition Agreement (PMDA) and existing public law (P.L. 107-314), the NNSA is developing three unique facilities/capabilities: a Mixed Oxide (MOX) Fuel Fabrication Facility (MFFF), a capability to disassemble nuclear weapons pits and convert the resulting plutonium into a form suitable to be made into MOX fuel, and a Waste Solidification Building to handle the waste resulting from a pit disassembly and conversion capability and MOX operations at the Savannah River Site (SRS). Approximately 75 percent of surplus plutonium to be dispositioned is in pit or metal form and must be disassembled and the plutonium converted to an oxide form useable as feedstock for the MFFF. The WSB will receive liquid waste streams from the MOX facility and pit disassembly and conversion operations, where it will be chemically treated and solidified for ultimate disposal. The WSB is a reinforced concrete facility that will contain storage tanks, evaporators, cementation equipment, and will include an adjacent storage area for drums awaiting transfer to SRS packaging facilities. Construction of the WSB began in FY 2009, and is scheduled to be completed in FY 2013. The MFFF will fabricate plutonium oxide into MOX fuel for subsequent use in commercial nuclear reactors. The facility will contain the following key areas: shipping and receiving, storage, chemical processing, pellet manufacturing, fuel rod loading, fuel bundle assembly, fuel bundle storage, and an analytical laboratory. Key supporting facilities include: an administration building, material receipt warehouse, technical support building, emergency and diesel standby generator buildings, and a chemical reagent building.

A project data sheet for the WSB has not been submitted for FY 2013 since no construction (TEC) funds are required to maintain the current approved baseline. However, it should be noted that two major remaining risks to the WSB project are: (1) slower than planned construction progress has resulted in a schedule forecast which currently exceeds the baseline completion of September 2013 (current forecast is November 2013) (2) approximately $12M of potential cost impacts due to significantly increased M&O contractor pension costs required to be borne by the project could increase the TPC of the project. These risks are being closely monitored and could result in the need for additional TEC or OPC in FY 2013 that is not reflected in this budget.

Sequence

Benefits

- Enables the U.S. to meet its commitment in the amended 2000 U.S.-Russia Plutonium Management and Disposition Agreement (PMDA).

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
Construction		
FY 2011		**575,788**
FY 2012		**452,754**
FY 2013		**388,802**
FY 2014-FY 2017		**131,239**
99-D-141-01, Pit Disassembly and Conversion (PDC)		
FY 2011	• Supported the development of a conceptual design report along with NEPA and other documentation and activities to support Critical Decision package development, and subsequent critical decisions. The plutonium glovebox and	**17,000**

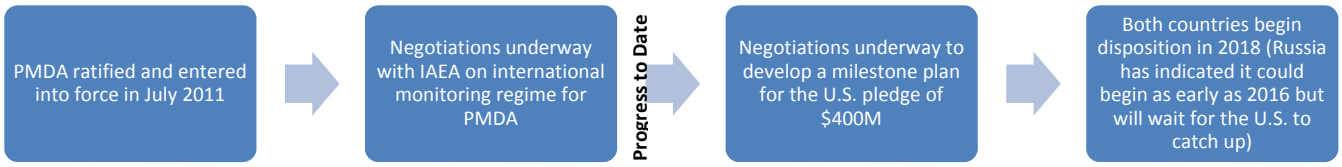
Fiscal Year	Activity	Funding (Dollars in Thousands)
Construction		
	process design activities common to all alternatives continued along with Technology Maturity Evaluations and update of the Technology Demonstration Plan. LANL continued the associated Demonstration and Testing (D&T) scope of the PDC technology, along with completion and delivery of the GFE Grippers.	
FY 2012	• Uncosted balances will support preparation of a project closeout plan; suspension and closeout of project contracts, work authorizations, and task orders; conducting project management closeout activities in accordance with DOE O 413.3B; development and implementation of a Records Management Plan; continuation of DOE-STD-3013 can testing and development of design and supporting documentation for the proposed oxidation capability at MFFF which can be used to support the feed options; and transition and closeout for the PDCF line item project.	**0**
FY 2013	• The Department's preferred alternative is no longer a new stand-alone Pit Disassembly and Conversion Facility (PDCF) and therefore no funds beginning in FY 2013 and out years will be requested for this project due to cancellation of the line item project. An Amended Notice of Intent has been issued into the Federal Register announcing DOE's intent to revise the scope of the Surplus Plutonium Disposition (SPD) Supplemental Environmental Impact Statement (SEIS) primarily to add the Department's preferred alternative to use some combination of facilities at LANL, MFFF, and H-Canyon with a small glovebox capability in K-Area at SRS, to disassemble pits and produce plutonium feed for MFFF. As a result, the existing PDCF line item project to build a standalone facility is currently no longer necessary and is expected to be closed out by the end of FY 2012.	**0**
FY 2014-FY 2017	• Project cancelled.	
99-D-141-02, Waste Solidification Building, (WSB)		
FY 2011	• Supported planned activities including testing/site acceptance of the cementation equipment, continuing installation of "trapped" equipment, completion of the process building concrete walls and roof, installation of mechanical and electrical process systems, and start of system turnovers.	**57,000**
FY 2012	• Planned activities will focus on the completion of physical construction, including the installation of mechanical and electrical systems inside the facility and the construction and installation of outside equipment and ancillary structures. Component and integrated system testing will be conducted.	**17,582**
FY 2013	• No TEC funding is requested in FY 2013. Carryover TEC funding will be used for facility modifications identified during the integrated start-up testing activities and to complete construction punch list items.	**0**
FY 2014-FY 2017	• Project Complete.	**0**
99-D-143, MOX Fuel Fabrication Facility (MFFF)		
FY 2011	• Supported the continuation for design, procurement, testing, and installation of process equipment, instruments and controls, and operating plant software. MOX Services licensing and regulatory activities continued along with project management and oversight activities in the areas of nuclear safety, project controls, quality assurance, and information technology. Also, major electrical equipment procurement and fabrication, cable and raceway deliveries, conduit	**501,788**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Construction		
	and cable tray installation continued, HVAC fabrication and installation began this year. Tank installation and coatings continued. Permanent underground utility installation continued, including domestic water, electrical, fire protection, and sanitary sewer, along with installation of the radioactive liquid waste transfer lines. MFFF building concrete construction progress, piping fabrication and installation, and construction of the Technical Support Building continued. On site assembly of gloveboxes continued along with in-advance testing. Design activities for the Reagent Building and the Emergency Diesel Generator Building were completed this year.	
FY 2012	• Planned activities include completion of the main MFFF process building structure and continued installation of ventilation equipment, process piping, and electrical equipment. Assembly and testing of gloveboxes and process equipment in the Process Assembly Facility will continue as will construction of the Emergency Diesel Generator Building. • The Technical Support Building will also be completed.	**435,172**
FY 2013	• Complete glovebox fabrication and assembly; complete software design; continue installation of ventilation, equipment, process piping, and electrical commodities; complete construction of the reagent building, the diesel generator building and the underground emergency fuel building; continue installation of instrumentation and controls; and continue installation of electrical and HVAC systems.	**388,802**
FY 2014-FY 2017	• Complete installation of equipment, commodity, instrumentation, and control systems; complete fire protection systems and begin operation; test and install security features; install final paving and landscaping; complete punch list items resulting from cold start-up testing necessary to support CD-4 approval.	**131,239**

Russian Surplus Fissile Materials Disposition
Overview

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 million, subject to the availability of appropriated funds and the U.S. budgetary review process. Russia will contribute the approximately over $2 billion necessary to complete the program. Russia has made considerable progress towards meeting its commitments under the PMDA: Russia hosted a U.S./IAEA delegation visit to its plutonium disposition reactor site, irradiated a number of MOX fuel test assemblies made from surplus weapons plutonium in one of its disposition reactors, is close to reaching an agreement with the U.S. and the IAEA on verifying plutonium disposition in each country, and ratified the PMDA and exchanged diplomatic notes with the U.S. to bring the PMDA into force. In addition, Russia, with its own funds, is designing a MOX fuel fabrication facility and is more than 35% complete in the construction of a reactor to be used for plutonium disposition. We expect to reach agreement with Russia on a detailed Milestone Plan covering the U.S. contribution in 2012. Plutonium disposition is targeted to begin in both countries in 2018.

Sequence



Benefits

- Plutonium disposition in Russia enables the permanent disposition of 34 MT of weapon-grade plutonium in a transparent and irreversible manner.

Other Information

- U.S.-Russia Plutonium Management and Disposition Agreement: http://www.state.gov/documents/organization/18557.pdf

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
Russian Surplus Fissile Materials Disposition		
FY 2011		**25**
FY 2012		**1,000**
FY 2013		**3,788**
FY 2014-FY 2017		**31,100**
Funds Spent in U.S.		
FY 2011	• Uncosted balances supported U.S. technical oversight of work in Russia associated with the disposition of surplus Russian weapon-grade plutonium in the BN-600 and BN-800 fast reactors as well as the research and development of the GT-MHR technology. These balances also supported interactions with the International Atomic Energy Agency (IAEA) in developing a Monitoring and Inspection (M&I) Regime in the US and in Russia to verify that both countries are disposing of 34 MT of surplus weapon-grade plutonium.	**25**
FY 2012	• Continue to support U.S. technical oversight of work in Russia associated with the disposition of surplus Russian weapon-grade plutonium in the BN-600 and BN-800 fast reactors as well as the research and development of the GT-MHR technology. • Funds support the implementation of a monitoring and inspection (M&I) regime in	**1,000**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Russian Surplus Fissile Materials Disposition		
	Russia and the U.S. verifying that both countries are disposing of 34 MT of surplus weapon-grade plutonium, and support negotiations among the U.S., Russia, and the International Atomic Energy Agency (IAEA) on M&I issues.	
FY 2013	• Provide technical support to the DOE in meeting U.S. obligations to support disposition of weapon-grade plutonium in Russia. Provide U.S. technical oversight of work in Russia associated with the disposition of surplus Russian weapon-grade plutonium in the BN-600 and BN-800 fast reactors and support the implementation of IAEA verification activities in both the U.S. and Russia.	**3,788**
FY 2014-FY 2017	• Continue to provide technical support to the DOE in meeting U.S. obligations to support disposition of weapon-grade plutonium in Russia. Continue providing technical oversight of work in Russia associated with the disposition of surplus Russian weapon-grade plutonium in the BN-600 and BN-800 fast reactors and continue supporting the implementation of IAEA verification activities in both the U.S. and Russia.	**31,100**
Funds Spent in Russia		
FY 2011	• Uncosted balances supported the research and development (R&D) of the GT-MHR in Russia including fabrication and testing of particle nuclear fuels and testing of vertical turbo machine components. Funds used for the GT-MHR are not part of the $400 million U.S. contribution.	**0**
FY 2012	• Uncosted balances will continue to support research and development (R&D) of the GT-MHR in Russia including fabrication and testing of particle nuclear fuels and testing of vertical turbo machine components. Funds used for the GT-MHR are not part of the $400 million U.S. contribution.	**0**
FY 2013	• Uncosted balances will support plutonium disposition efforts in Russia funded from carryover funds identified as part of the $400 million in U.S. assistance under the PMDA.	**0**
FY 2014-FY 2017	• Continue to support plutonium disposition efforts in Russia as part of the $400 million in U.S. assistance under the PMDA.	**0**

Capital Operating Expenses and Construction Summary
Capital Operating Expenses[a]

(dollars in thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Capital Operating Expenses			
General Plant Projects	0	0	0
Capital Equipment	4,716	4,820	4,926
Total, Capital Operating Expenses	**4,716**	**4,820**	**4,926**

Outyear Capital Operating Expenses

(dollars in thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request
Capital Operating Expenses				
General Plant Projects	0	0	0	0
Capital Equipment	5,034	5,145	5,258	5,374
Total, Capital Operating Expenses	**5,034**	**5,145**	**5,258**	**5,374**

Construction Projects

(dollars in thousands)

	Total Estimated Cost (TEC)	Prior Year Appro-priations	FY 2011 Current	FY 2012 Enacted	FY 2013 Request	Unappropriated Balance
99-D-141-01, Pit Disassembly and Conversion, (PDC)	TBD	302,490	17,000	0	0	TBD
99-D-141-02, Waste Solidification Building (WSB)	244,331	169,749	57,000	17,582	0	0
99-D-143, MOX Fuel Fabrication Facility (MFFF)	3,876,828	2,518,827	501,788	435,172	388,802	131,239
Total, Construction			**575,788**	**452,754**	**388,802**	

[a] Funds are appropriated for Operations and Maintenance, which includes operating expenses, capital equipment and general plant projects. The program no longer budgets separately for capital equipment and general plant projects. Funding shown reflects estimates based on actual FY 2011 obligations.

Construction Projects Total Project (TPC)

	(dollars in thousands)				
	FY 2013 Request	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request
99-D-141-01, PDCF OPC	0	0	0	0	0
99-D-141-01, PDCF TEC	0	0	0	0	0
99-D-141-01, PDCF TPC	0	0	0	0	0
99-D-141-02, WSB OPC	25,798	0	0	0	0
99-D-141-02, WSB TEC	0	0	0	0	0
99-D-141-02, WSB TPC	25,798	0	0	0	0
99-D-143, MOX OPC	180,669	221,697	207,603	40,999	0
99-D-143, MOX TEC	388,802	118,661	9,773	2,805	0
99-D-143, MOX TPC	569,471	340,358	217,376	43,804	0

Outyear Construction Projects

	(dollars in thousands)			
	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request
99-D-141-01, Pit Disassembly and Conversion Facility (PDC)	0	0	0	0
99-D-141-02, Waste Solidification Building (WSB)	0	0	0	0
99-D-143, MOX Fuel Fabrication Facility (MFFF)	118,661	9,773	2,805	0
Total, Construction	**118,661**	**9,773**	**2,805**	**0**

99-D-143, Mixed Oxide Fuel Fabrication Facility,
Savannah River Site, Aiken, South Carolina
Project Data Sheet 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 April 11, 2007, with a Total Project Cost (TPC) of $4,814,329 and CD-4 of FY 2017. However, as directed by the Revised Continuing Resolution, 2007, Public Law 110-5, construction began on August 1, 2007. 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 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 2012 PDS. Significant changes include the following:

On July 29, 2011, the Deputy Secretary of Energy directed the evaluation of a series of alternatives to provide feedstock for the MOX facility that could potentially obviate the need for the Pit Disassembly and Conversion Facility (PDCF) project. The PDC study revealed options to meet the long term, steady state plutonium disposition feedstock requirements by increasing production at LANL's PF-4 facility, potentially installing capability within the MFFF, and increasing production at SRS's H-Canyon/HB-Line if needed. As a result, the existing PDCF line item project to build a standalone facility is currently no longer necessary and is expected to be cancelled effective in FY 2013. Once a clear path is approved using a combination of the options mentioned above, it's possible that modifications to the MOX facility will be required in the future, that are not captured within the current approved baseline. The Department is optimistic the preferred alternative will result in significant cost savings and will focus on validating cost and schedule estimates with the preferred alternative.

As mentioned in the FY 2012 PDS, the project continues to experience difficulty identifying suppliers and subcontractors with the ability and experience to fabricate and install equipment to the requirements of Nuclear Quality Assurance (NQA)1 standard for nuclear work. MOX Services continues to have dedicated MOX facility quality assurance and engineering personnel stationed at supplier and subcontractor locations to train personnel and ensure fabricated equipment and installations meet NQA-1 requirements. The lack of experienced nuclear equipment suppliers has, in turn, resulted in a lack of competition for work and higher than expected bids as inexperienced suppliers are uncertain how much effort is required to meet NQA-1 requirements. In cases where qualified suppliers and subcontractors are not available, too expensive, or so inexperienced as to present unacceptable risk, DOE has authorized the MOX facility prime contractor, Shaw AREVA MOX Services, to "self-perform" a limited amount of fabrication and installation activities.

Shaw AREVA MOX Services is also experiencing significantly greater than expected turnover of experienced personnel due to the expansion of the U.S. commercial nuclear industry. The loss of experienced engineering and technical staff to other nuclear industry projects in neighboring states has continued from last year. MOX Services turnover rate increased from 15% in FY 2010 to 24% in FY 2011 with the result that the project has experienced a nearly complete turnover of construction management personnel in the last year. Finding experienced replacements has become difficult and expensive. In many cases, replacement personnel have to be hired without the requisite nuclear experience and therefore must be trained prior to performing NQA-1 work. The net result of this turnover of personnel, along with the difficulty in finding established NQA-1 suppliers, is an increased pressure on project cost and schedule baselines.

The MOX project has allocated contingency and management reserve funds within the last year to address these issues and to mitigate overall project risks. While allocation of reserves funds has remained within overall planning limits, the project team must continue to actively manage these issues in the future to mitigate the potential cost and schedule impacts.

NNSA has approved two changes to the project's technical baseline:

1. Based on fuel design changes in the industry and utility feedback, facility design changes to accommodate production of the latest pressurized water reactor (PWR) fuel assemblies, along with boiling water reactor (BWR) fuel assemblies, have been implemented. The change ($24M) will allow the MOX facility to manufacture fuel for more than 95% of the commercial reactors in the U.S. and for any planned new reactor designs. This change, along with equipment and facility modification costs, are being funded from project contingency funds. Design changes were completed in December 2011. Necessary changes to equipment procurements and facility modifications are being made as the design modifications are completed and approved.

2. The MOX facility design is being modified to allow use of depleted uranium feed material prepared using the latest, and less expensive, "dry" fabrication process versus the baselined "wet" fabrication process. The change was brought about by the fact that the modifications ($564K) are similar to changes already incorporated in the AREVA reference facility in France. No vendors responded to a solicitation to provide wet process depleted uranium necessitating MFFF to modify its design to accommodate depleted uranium feed produced by the dry process.

The changes above were reviewed and validated by an Independent Project Review (IPR) Team in March 2011 which supported the cost to be absorbed within the existing baseline utilizing existing project contingency.

In accordance with DOE's Cost Estimating Guide (DOE G 413.3-12), along with NNSA's TEC/OPC activity assignment guidance, certain project start-up activities which were classified as TEC funded activities have been reclassified as OPC activities. This change was also reviewed by the IPR team in March 2011 and no issues were identified. Since this was just a reclassification of costs, the project TPC was not affected; however, because of other changes to the estimated costs of equipment, construction, startup, and contingencies, there was a net increase in the OPC of $99M and a net decrease in the TEC of $99M.

DOE has announced its intent to modify the scope of the Surplus Plutonium Disposition (SPD) Supplemental Environmental Impact Statement (EIS) and conduct additional public scoping meetings as stated in the Federal Register dated July 19, 2010. The revised scope of the SPD Supplemental EIS includes disposition alternatives for additional plutonium declared surplus to the Nation's defense needs in 2008 and additional alternatives for disposition of certain non-pit plutonium materials currently in safe storage at the Savannah River Site (SRS) in South Carolina. In addition, DOE will analyze, in the SPD Supplemental EIS, the potential environmental impacts of using MOX fuel in up to five reactors owned by the Tennessee Valley Authority (TVA) at the Sequoyah (near Soddy-Daisy, TN) and Browns Ferry (near Athens, AL) nuclear stations. The TVA is a cooperating agency with DOE for preparation and review of the sections of the SPD Supplemental EIS that address operation of TVA reactors. In addition, due to the PDC study to meet the long term, steady state plutonium disposition feedstock requirements, DOE issued an Amended NOI on January 12, 2012 to consider the alternatives to PDCF currently under development in the SPD Supplemental EIS.

2. Design, Construction, and D&D Schedule

(fiscal quarter or date)

	CD-0	CD-1	PED 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

(fiscal quarter or date)

	CD-0	CD-1	PED Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
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

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)

	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)

3. Baseline and Validation Status

(fiscal quarter or date)

	TEC, PED	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

[a] Facility, process, and equipment design have been completed. The Software design will be completed in FY 2013.

[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.

	(fiscal quarter or date)						
	TEC, PED	TEC, Construction	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
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

4. Project Description, Justification, and Scope

Mission Need

The overall project mission need is to dispose of at least 34 metric tons of surplus weapon-grade plutonium in accordance with the amended *US-Russia Plutonium Management Disposition Agreement.* This will be accomplished by converting the surplus material into mixed oxide fuel that can subsequently be irradiated in power producing reactors in the United States. Once irradiated and converted into spent fuel, the material can no longer be readily used for nuclear weapons.

Scope and Justification: 99-D-143 Mixed Oxide (MOX) Fuel Fabrication Facility (MFFF)

The U.S. Mixed Oxide (MOX) Fuel Fabrication Facility (MFFF) at the Savannah River Site will combine surplus weapon-grade plutonium oxide with depleted uranium oxide to form MOX fuel assemblies that will be used as fuel for U.S. commercial nuclear reactors. The nominal design life of the facility is 40 years; however, it will take approximately 13 years to complete the 34 MT mission with additional surplus plutonium disposition planned.[a] After completing its mission, the facility can be deactivated, decontaminated, and decommissioned in approximately three to four years.

The MOX facility has been designed with the capacity needed to receive and process 3.5 MT of plutonium oxide per year. The plutonium oxide will come from pit disassembly and conversion operations and from other selected inventories of weapon-grade plutonium available within the Enterprise. The facility will have the capacity to store sufficient plutonium oxide for two years of operations.

The MOX facility will be approximately 441,000 square feet in size and provide all of the material processing and fabrication operations needed to produce MOX fuel. MOX facility operations 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 also includes 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.

The design of the MOX Fuel Fabrication Facility (MFFF) is based on technologies, processes, and facilities that have been successfully operating in France for decades, specifically AREVA's MELOX and La Hague facilities. The facility has been designed to meet U.S. conventions, codes, standards, and regulatory requirements, and will be licensed by the Nuclear Regulatory Commission (NRC).

FY 2011 Project Status

Project activities continued to focus on the completion of engineering, civil/structural construction, the procurement and receipt of long-lead equipment, along with the assembly and testing of process units. Through September 2011, the project has installed over 98,000 cubic yards of reinforced concrete and more than 17,000 tons of rebar in the MFFF. Initial testing was completed on the first gloveboxes and process equipment, and piping/heating ventilation and air conditioning (HVAC) installation began this year. Tank installation and coatings are continuing. Permanent underground utility installation

[a] The current strategy for hot start-up and operation of the MFFF calls for production to ramp up for a number of years before operating at full production, resulting in a 20 year planned operating period of the MFFF.

continued, including domestic water, electrical, fire protection, and sanitary sewer, along with installation of the radioactive liquid waste transfer lines. The project also completed construction of two more buildings; a Secured Warehouse and a new Electrical Substation. Eleven auxiliary buildings are now complete. Construction of the Technical Support Building was initiated and is on track to be completed in FY 2012. The project completed this work while achieving nearly five million safe work hours.

FY 2012 and FY 2013 Description of Activities

In FY 2012, the MFFF structural construction package will be completed, including the primary exterior wall and MFFF roof. HVAC construction will continue, and construction of the Reagent Building and Emergency Diesel Generator Building will be initiated. Process piping installation will continue as will glovebox installation/connections and electrical installation. On site cold start-up testing will begin.

In FY 2013, equipment and piping installation will continue, as will electrical and HVAC commodity installation; construction of the reagent building and emergency diesel generator building will be completed as will glovebox fabrication and delivery and software design; cold start-up testing will continue.

Risk Management

The MFFF project has implemented and maintained an active risk management process throughout the project life. Risks are routinely reviewed, assessed, and updated. The most significant risks affecting the project are:

Risk	Potential Impacts
The effort required for commercial grade dedication of materials and components under NQA-1 standards exceed expectations.	Higher costs to process materials and components, develop documentation, and verify acceptability. Longer procurement lead times and greater involvement of project engineering personnel at suppliers.
The quality assurance programs of engineered equipment suppliers require additional review and improvement to meet current specifications.	Higher prices for engineered equipment. Higher staffing levels in Quality Assurance and in other support functions to monitor performance.
Problems with the supply chain due to the long dormancy of the nuclear industry, fewer capable suppliers.	Higher prices for some equipment and materials because of limited numbers of competing suppliers. Longer delivery times because suppliers need additional time to develop manufacturing capabilities. Project staff having to perform additional engineering analysis because suppliers do not have adequate engineering/technical staffs to execute contracted work (i.e. seismic analysis of equipment, welding engineers on staff, etc.)
Employees with requisite skills and experience may be in short supply due to long dormancy of the nuclear industry.	Higher than expected professional/technical staff turnover due to demand for nuclear trained personnel at other projects (especially commercial projects in the SE United States). Significant turnover rates result in higher recruiting costs and higher compensation levels than planned.
Possible obsolete equipment or software due to the long lead time from initial design to final construction.	Design changes required late in the project schedule because equipment planned to be used has changed or is no longer available.
Complexity of the MFFF process equipment (numerous gloveboxes, remote operations, extensive software applications, etc.) could lead to delays in testing and start-up.	While MFFF processes and software are based on reference facilities in France, some delays in start-up could be experienced due to unforeseen problems with process equipment, the complex software required to operate MFFF, laboratory start-up and qualification, etc. Additional engineering or technical staff may be required to troubleshoot software, balance ventilation systems, etc.

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 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 [c]	70,987	70,987	65,056
FY 2011	51,134	51,134	50,757
FY 2012	1,582	1,582	11,612
FY 2013	155	155	547
Total, Design	994,073	994,073	994,073
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 [c]	433,251	433,251	429,326
FY 2011	450,654	450,654	482,330
FY 2012	433,590	433,590	605,434
FY 2013	388,647	388,647	648,798
FY 2014	118,661	118,661	125,695
FY 2015	9,773	9,773	31,386
FY 2016	2,805	2,805	18,014
FY 2017	0	0	0
Total, Construction	2,981,755	2,981,755	2,981,755

[a] MOX funded within the Nuclear Energy appropriation.

[b] MOX funded with the Other Defense Activities appropriation.

[c] The FY 2010 cost contained an error (transposed numbers) in the split between design and construction and has been corrected in this data sheet.

	(dollars in thousands)		
	Appropriations	Obligations	Costs
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	617,046
FY 2013	388,802	388,802	649,345
FY 2014	118,661	118,661	125,695
FY 2015	9,773	9,773	31,386
FY 2016	2,805	2,805	18,014
FY 2017	0	0	0
Total, TEC	3,975,828	3,975,828	3,975,828
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	47,152
FY 2013	180,669	180,669	141,596
FY 2014	221,697	221,697	228,555

[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	207,603	207,603	246,766
FY 2016	40,999	41,022	54,930
FY 2017	0	0	0
Total, OPC except D&D	881,301	881,301	881,301
D&D			
FY 2011	N/A	N/A	N/A
FY 2012	N/A	N/A	N/A
Total, D&D	N/A	N/A	N/A
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]	278,789	393,252	283,878
FY 2008 (rescinded PY unobligated balance)	-115,000	0	0
FY 2009 [c]	467,808	467,808	391,169
FY 2010 [d]	560,704	560,704	513,726
FY 2011 [e]	505,788	505,788	583,298
FY 2012	482,207	482,207	664,198
FY 2013	569,471	569,471	790,941
FY 2014	340,358	340,358	354,250
FY 2015	217,376	217,376	278,152
FY 2016	43,804	43,827	72,944
FY 2017	0	0	0
Total, TPC	4,857,129	4,857,129	4,857,129

[a] Includes $31M for long-lead procurements for glove boxes. MOX funded within the Nuclear Energy appropriation.

[b] Includes $37.6M for long-lead procurements for glove boxes. MOX funded within the Other Defense Activities appropriation.

[c] Includes $177.4M for long-lead procurements.

[d] Includes $167.9M for long-lead procurements.

[e] Includes $67.1M for long-lead procurements.

6. Details of Project Cost Estimate

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED)			
Design	994,073	978,073	916,148
Contingency	0	0	0
Total, PED	994,073	978,073	916,148
Construction			
Site Preparation	39,957	39,957	39,929
Equipment	452,816	384,590	251,791
Other Construction	2,325,253	2,242,035	2,067,639
Contingency	163,729	331,173	663,121
Total, Construction	2,981,755	2,997,755	3,022,480
Total, TEC	3,975,828	3,975,828	3,938,628
Contingency, TEC	163,729	331,173	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	675,815	639,124	650,468
Contingency	167,763	204,454	187,510
Total, OPC except D&D	881,301	881,301	875,701
D&D			
D&D	0	0	0
Contingency	0	0	0
Total, D&D	0	0	0
Total, OPC	881,301	881,301	875,701
Contingency, OPC	167,763	204,454	187,510
Total, TPC	4,857,129	4,857,129	4,814,329
Total, Contingency	331,492	535,627	850,631

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 2009	TEC	2,668,985	301,938	382,802	158,325	125,611	300,967	0	0	3,938,628
Performance	OPC	315,868	180,269	136,669	149,192	85,771	7,932	0	0	875,701
Baseline	TPC	2,984,853	482,207	519,471	307,517	211,382	308,899	0	0	4,814,329
	TEC	2,994,615	385,172	322,802	109,661	125,773	37,805	0	0	3,975,828
FY 2010	OPC	209,298	97,035	246,669	230,697	91,603	5,999	0	0	881,301
	TPC	3,203,913	482,207	569,471	340,358	217,376	43,804	0	0	4,857,129
	TEC	2,994,615	385,172	322,802	109,661	125,773	37,805	0	0	3,975,828
FY 2011	OPC	209,298	97,035	246,669	230,697	91,603	5,999	0	0	881,301
	TPC	3,203,913	482,207	569,471	340,358	217,376	43,804	0	0	4,857,129
	TEC	2,994,615	385,172	322,802	109,661	125,773	37,805	0	0	3,975,828
FY 2012	OPC	209,298	97,035	246,669	230,697	91,603	5,999	0	0	881,301
	TPC	3,203,913	482,207	569,471	340,358	217,376	43,804	0	0	4,857,129
	TEC	3,020,615	435,172	388,802	118,661	9,773	2,805	0	0	3,975,828
FY 2013	OPC	183,298	47,035	180,669	221,697	207,603	40,999	0	0	881,301
	TPC	3,203,913	482,207	569,471	340,358	217,376	43,804	0	0	4,857,129

* FY 2011 OPC appropriations were only $4M vs $30M planned.
* FY 2011 TEC appropriations were increased by $26M.

8. Related Operations and Maintenance Funding Requirements

Start of Operation of Beneficial Occupancy (fiscal quarter or date)	1Q FY 2017
Expected Useful Life (number of years) (after hot startup) [a]	13
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	434,039	314,600	6,174,744	4,089,800
Security	64,673	41,500	915,959	1,288,300
Total, Operations and Security [b]	498,712	356,100	7,090,703	5,378,100

9. Required D&D Information

[a] The nominal design life of the facility is 40 years, however, it will take approximately 13 years to complete the 34 MT mission.

[b] The current estimates are expressed in 2011 dollars and should be considered preliminary. Average annual costs are for the 13 year period 2017-2029. Total costs include long-lead procurements and security actions prior to FY 2017. The Government is negotiating Option II of the MFFF contract to add start-up and initial operation of the facility to the current contract scope in order to reduce the government's risk that the facility will be unable to produce specification MOX fuel. NNSA is also negotiating security and other overhead costs with Environmental Management--the SRS landlord. When the process is completed, the project life cycle costs will be updated.

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. Negotiations on Early Option 2 are currently in process.

Actual physical construction is being conducted through a combination of fixed-price sub-contracts and MOX Services' direct managed construction crafts. A combination of award fees and incentive fees are included in the overall contract with MOX Services to reward performance within established project baselines.

Global Threat Reduction Initiative (GTRI)
Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Global Threat Reduction Initiative			
Highly Enriched Uranium (HEU) Reactor Conversion	**100,968**	**148,269**	**161,000**
Nuclear and Radiological Material Removal			
Russian-Origin Nuclear Material Removal	159,031	147,000	102,000
U.S.-Origin Nuclear Material Removal	4,420	9,000	5,000
Gap Nuclear Material Removal	9,289	45,731	61,000
Emerging Threats Nuclear Material Removal	8,768	5,000	5,000
International Radiological Material Removal	20,660	20,000	8,000
Domestic Radiological Material Removal (Homeland Security) [a]	19,128	20,000	19,000
Subtotal, Nuclear and Radiological Material Removal	**221,296**	**246,731**	**200,000**
Nuclear and Radiological Material Protection			
BN-350 Nuclear Material Protection	1,840	2,000	0
International Material Protection	46,573	50,000	50,000
Domestic Material Protection (Homeland Security) [a]	65,304	51,000	55,021
Subtotal, Nuclear and Radiological Material Protection	**113,717**	**103,000**	**105,021**
International Contributions [b]	**8,708**	**0**	**0**
Total, Global Threat Reduction Initiative	**444,689**	**498,000**	**466,021**

[a] Office of Management and Budget (OMB) Homeland Security designation.

[b] International contributions for GTRI include $8,207,791 from Canada, and $499,970 from the Netherlands.

Out-Year Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request
Global Threat Reduction Initiative				
Highly Enriched Uranium (HEU) Reactor Conversion	**177,000**	**183,000**	**185,000**	**195,000**
Nuclear and Radiological Material Removal				
Russian-Origin Nuclear Material Removal	100,000	100,000	100,000	95,000
U.S.-Origin Nuclear Material Removal	5,000	5,000	6,000	8,000
Gap Nuclear Material Removal	45,000	30,000	20,000	15,000
Emerging Threats Nuclear Material Removal	5,000	5,000	5,000	5,000
International Radiological Material Removal	20,000	20,000	20,000	20,000
Domestic Radiological Material Removal (Homeland Security) [a]	20,000	20,000	20,000	20,000
Subtotal, Nuclear and Radiological Material Removal	**195,000**	**180,000**	**171,000**	**163,000**
Nuclear and Radiological Material Protection				
BN-350 Nuclear Material Protection	0	0	0	0
International Material Protection	52,000	60,000	68,000	73,000
Domestic Material Protection (Homeland Security) [a]	61,775	71,866	80,371	84,322
Subtotal, Nuclear and Radiological Material Protection	**113,775**	**131,866**	**148,371**	**157,322**
Total, Global Threat Reduction Initiative	**485,775**	**494,866**	**504,371**	**515,322**

[a] Office of Management and Budget (OMB) Homeland Security designation.

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
Consolidated Appropriations Act, 2012 (P.L. 112-74)
National Defense Authorization Act for FY 2012 (P.L. 112-81)

Overview

The Global Threat Reduction Initiative (GTRI) program reduces and protects vulnerable nuclear and radiological materials located at civilian sites worldwide. GTRI activities directly support DOE Strategic Plan Goal 3 by enhancing nuclear security and reducing global nuclear dangers through efforts to improve nuclear and radiological material security.

Program Accomplishments and Milestones

Through September 2011, GTRI has accelerated threat reduction efforts by: 1) verifying or converting the shutdown of a cumulative 76 research reactors from use of Highly Enriched Uranium (HEU) fuel to Low-Enriched Uranium (LEU) fuel; 2) removing a cumulative 3,125 kilograms of HEU and plutonium, enough material to make over 120 nuclear bombs; 3) removing a cumulative 28,743 excess and unwanted radiological sources in the United States, containing more than 818,000 curies; and 4) protecting a cumulative 1,187 nuclear and radiological vulnerable buildings worldwide with high-priority nuclear and radiological materials. These activities collectively support the goals contained in the Administration's nonproliferation initiative announced in Prague on April 5, 2009 to secure all vulnerable nuclear material around the world within four years, which was further strengthened in the July 2009 Joint Statement resulting from the Moscow Summit, the September 2009 United Nations Security Council Resolution 1887, and the April 2010 Nuclear Security Summit.

Explanation of Changes

The Department's request of $466,021,000 in Fiscal Year 2013 for the Global Threat Reduction Initiative is a 6.4% decrease below the FY2012 appropriation.

The FY2013 Request increases the funding for HEU Reactor Conversion (+$12.731, 000), decreases funding for Nuclear and Radiological Material Removal (-$46,731,000), and increases funding for Nuclear and Radiological Material Protection (+$2,021,000).

Program Planning and Management

GTRI's targets and goals are aligned to DOE's Strategic Goal 3: Secure Our Nation by enhancing nuclear security and reducing global nuclear dangers through efforts to improve the security of nuclear and radioactive materials located at civilian sites worldwide. The updated measures are compiled and provided in the FY2013 Annual Performance Plan (APP) Report. The GPRA Unit Program sections of the APP identify the corporate performance measures that the programs use to track progress toward these and other outcomes.

Strategic Management

The Department will continue to press foreign partners for commitments/agreements using the Nuclear Security Summit mechanisms for leverage and increase the level of cost-sharing with international partners.

Two external factors present the strongest impact to the overall achievement of the programs strategic goal:

- Foreign partner commitment to remain engaged with the United States
- New agreements needed

Major Outyear Priorities and Assumptions

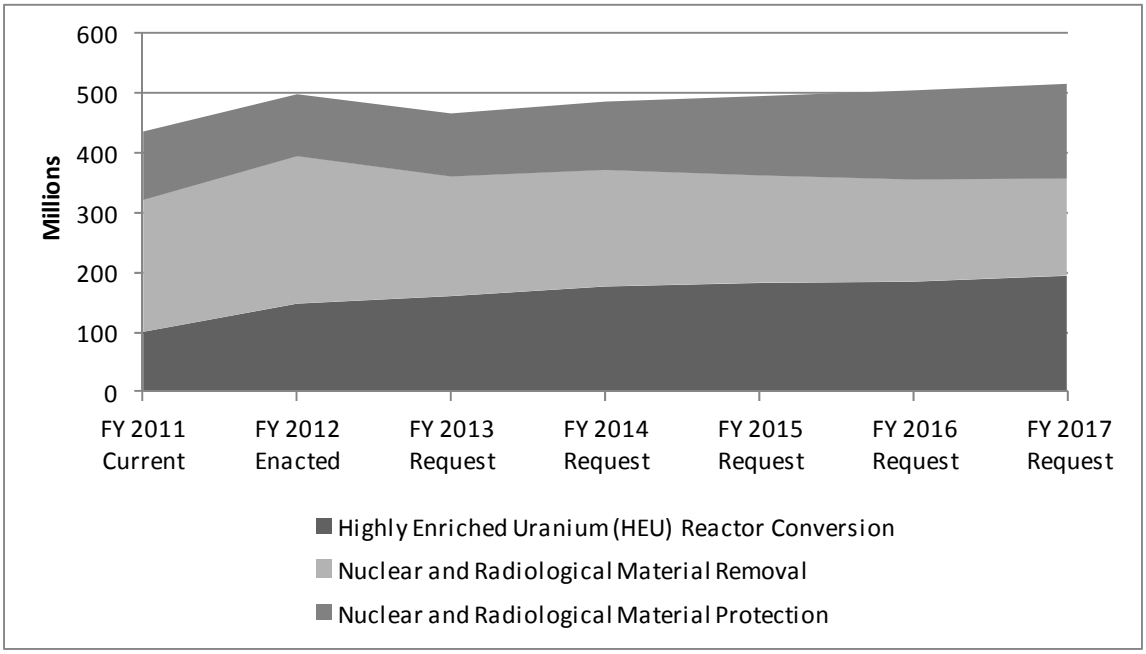
The outyear projections for the GTRI program total $2,000,334 (FY 2014 – FY 2017). GTRI plays a key role in support of the international effort the President announced in Prague on April 5, 2009 to secure all vulnerable nuclear material around the world within four years, which was further strengthened in the July 2009 Joint Statement resulting from the Moscow Summit, the September 2009 UNSC Resolution 1887 and the April 2010 Nuclear Security Summit. GTRI has worked in 120 countries around the world to implement nuclear and radiological threat reduction in line with this goal. By the end of 2017, GTRI will have converted 127 (63.5 percent) of the 200 HEU reactors, removed 5,139 (96 percent) of the estimated 5,350 kilograms of excess and vulnerable weapons-useable materials, and protected 2,470 (29 percent) of the estimated 8,500 buildings with high-priority nuclear and radiological materials.

Program Goals and Funding

GTRI supports the U.S. Department of Energy's Secure Our Nation Goal by preventing terrorists from acquiring nuclear and radiological materials that could be used in weapons of mass destruction (WMD) or other acts of terrorism. GTRI does so by: 1) converting research reactors and isotope production facilities from the use of highly enriched uranium (HEU) to low enriched uranium (LEU); 2) removing and disposing of excess nuclear and radiological materials; and 3) protecting high-priority nuclear and radiological materials from theft and sabotage. These three key subprograms -- Convert, Remove, and Protect -- provide a comprehensive approach to achieving its mission and denying terrorists

access to nuclear and radiological materials. The GTRI subprograms make important and unique contributions to the department's nonproliferation efforts.

Figure 1: Relative Out-Year Funding Priorities in Defense Nuclear Nonproliferation - Global Threat Reduction Initiative



Explanation of Funding and/or Program Changes

	(Dollars in Thousands)		
	FY 2012 Enacted	FY 2013 Request	FY 2013 vs. FY 2012
Global Threat Reduction Initiative			
Highly Enriched Uranium (HEU) Reactor Conversion	**148,269**	**161,000**	**+12,731**
The majority of additional funding supports the establishment of a reliable domestic production capability for the critical medical isotope Molybdenum-99 (Mo-99) without the use of HEU. Remaining additional funds will support the increase in the number of reactor conversions from HEU to LEU or verified as shut down. GTRI projects seven reactors to be converted or verified as shut down in FY 2013 (versus five converted or verified as shutdown in FY 2012).			
Nuclear and Radiological Material Removal	**246,731**	**200,000**	**-46,731**
Decrease in funding for nuclear efforts is consistent with the four-year plan. Funding was requested in FY 2012 for removal efforts that will occur in early 2013 to meet the President's goal. Decrease in funding for radiological efforts reflects a reduced number of RTGs recovered from 34 in FY2012 to eight in FY 2013.			
Nuclear and Radiological Material Protection	**103,000**	**105,021**	**+2,021**
Increase in funding reflects a larger number of buildings with high priority nuclear and radiological material secured in previous years that need sustainability support from 1,187 in FY 2012 to 1,355 in FY 2013.			
Total Funding Change, Global Threat Reduction Initiative	**498,000**	**466,021**	**-31,979**

HEU Reactor Conversion
Overview

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.

Sequence

Benefits

The HEU Reactor Conversion subprogram is critical to GTRI's mission because it removes the need for HEU at civilian sites. Once the need is eliminated, any remaining fresh and spent HEU fuel can be permanently disposed of by GTRI's Remove subprogram. These activities support the goals contained in the Administration's nonproliferation initiative announced in Prague on April 5, 2009 to secure all vulnerable nuclear material around the world within four years, and further strengthened in the July 2009 Joint Statement resulting from the Moscow Summit, the September 2009 UNSC Resolution 1887 and the April 2010 Nuclear Security Summit.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2011	• Converted, or verified as shutdown, an additional 4 HEU research reactors, bringing the cumulative total to 76. This includes HEU research reactors in the Czech Republic, two in Russia and one in China. • Continued efforts required to design, test and qualify the new high-density LEU fuel needed to convert the 27 HEU research reactors around the world that cannot convert with existing LEU fuel. The conversion of these 27 high performance reactors will result in HEU avoidance of an additional 520 kilograms per year. • Provided 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.	**100,968**
FY 2012	• Convert, or verify as shutdown, an additional 5 HEU research reactors, bringing the cumulative total to 81. • 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. • 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.	**148,269**
FY 2013	• Convert, or verify as shutdown, an additional 7 HEU research reactors, bringing the cumulative total to 88. • 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. • 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	**161,000**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	cannot convert with existing LEU.	
FY 2014-FY 2017	• Convert, or verify as shutdown, an additional 39 reactors, for a cumulative total of 127 HEU research reactors converted or verified as shutdown by the end of FY2017. • Complete 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. • 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.	**740,000**

Nuclear and Radiological Material Removal Protection (Homeland Security)
Overview

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 materials necessary for a bomb.

Sequence

Benefits

The Nuclear and Radiological Material Removal subprogram efforts result in permanent threat reduction by eliminating nuclear and radiological materials. These activities collectively support the goals contained in the Administration's nonproliferation initiative announced in Prague on April 5, 2009 to secure all vulnerable nuclear material around the world within four years, which was further strengthened in the July 2009 Joint Statement resulting from the Moscow Summit, the September 2009 UNSC Resolution 1887 and the April 2010 Nuclear Security Summit.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
Nuclear and Radiological Material Removal		
FY 2011		**221,296**
FY 2012		**246,371**
FY 2013		**200,000**
FY 2014-FY 2017		**709,000**
Russian-Origin Nuclear Material This activity supports the removal and disposal of Russian-origin nuclear material from research reactors and other civilian facilities worldwide. In accordance with the Administration's Prague goals, GTRI is accelerating the return and/or permanent disposition of Russian-origin HEU fuel**.**		
FY 2011	• Returned to Russia and/or disposed of an additional 228 kilograms of Russian-origin HEU from facilities located in Belarus, Kazakhstan, Serbia, Ukraine, and Poland, resulting in a cumulative total of 1,623 kilograms of HEU removed; enough material for over 60 nuclear bombs. Funds were also used for preparatory activities for removals planned for 2012.	**159,031**
FY 2012	• Return to Russia and dispose of an additional 291 kilograms of Russian-origin HEU from facilities located in Ukraine, Uzbekistan and Poland, resulting in a cumulative total of 1,914 kilograms of HEU removed; enough material for over 75 nuclear bombs. Funds will also be used for preparatory activities for removals planned for 2013.	**147,000**
FY 2013	• Return to Russia and dispose of an additional 88 kilograms of Russian-origin HEU from facilities located in the Czech Republic and Vietnam, resulting in a cumulative total of 2,002 kilograms of HEU removed; enough material for 80 nuclear bombs. Funds will also be used for preparatory activities for removals planned for 2014.	**102,000**
FY 2014-FY 2017	• Return to Russia and dispose of an additional 460 kilograms of Russian-origin HEU from facilities located in Belarus, Hungary, Kazakhstan and Poland, for a cumulative total of 2,462 kilograms; enough material for over 95 nuclear bombs.	**395,000**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Nuclear and Radiological Material Removal		
U.S.-Origin Nuclear Material Removal This activity supports the removal and disposal of U.S.-origin HEU and LEU from TRIGA and MTR research reactors. U.S.-origin fuel will be returned to the United States until 2019 as an incentive for reactor conversions. In accordance with the Administration's Prague goals, GTRI is accelerating the return of U.S.-origin HEU fuel.		
FY 2011	• Returned to the United States an additional 8 kilograms of U.S.-origin HEU primarily from South Africa resulting in a cumulative total of 1,250 kilograms of HEU removed, enough material for over 45 nuclear bombs. Funds were also used for preparatory activities for removals planned for 2012.	**4,420**
FY 2012	• Return to the United States an additional 10 kilograms of U.S.-origin HEU primarily from Mexico resulting in a cumulative total of 1,260 kilograms of HEU removed, enough material for over 45 nuclear bombs. Funds will also be used for preparatory activities for removals planned for 2013.	**9,000**
FY 2013	• Return to the United States an additional 126 kilograms of U.S.-origin HEU resulting in a cumulative total of 1,386 kilograms of HEU removed, enough material for 55 nuclear bombs. Funds will also be used for preparatory activities for removals planned for 2014.	**5,000**
FY 2014-FY 2017	• Return to the United States, an additional 389 kilograms of U.S.-origin HEU, for a cumulative total of 1,775 kilograms; enough material for over 70 nuclear bombs.	**24,000**
Gap Nuclear Material Removal This effort additionally supports the GTRI mission of 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. In accordance with the Administration's Prague goals, GTRI is accelerating the return and/or disposition of Gap material from third countries.		
FY 2011	• Removed or facilitated the disposition of an additional 36 kilograms of Gap HEU and plutonium from several countries resulting in a cumulative total of 252 kilograms of HEU and plutonium removed; enough material for over 5 nuclear bombs. Funds will also be used for preparatory activities for removals planned for 2012.	**9,289**
FY 2012	• Remove or facilitate disposition of an additional 29 kilograms of Gap HEU and plutonium from several countries resulting in a cumulative total of 281 kilograms of HEU and plutonium removed, enough material for over 10 nuclear bombs. Funds will also be used for preparatory activities for removals planned in 2013.	**45,731**
FY 2013	• Remove or facilitate the disposition of an additional 166 kilograms of Gap HEU and plutonium from several countries including South Africa resulting in a cumulative total of 447 kilograms of HEU and plutonium removed; enough material for over 15 nuclear bombs. Funds will also be used for preparatory activities for removals planned for 2014.	**61,000**
FY 2014-FY 2017	• Continue to remove or facilitate the disposition of an additional 455 kilograms of Gap HEU and plutonium, for a cumulative total of 902 kilograms; enough material for over 35 nuclear bombs.	**110,000**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Nuclear and Radiological Material Removal		
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 through the deployment of self-sufficient, trained rapid response teams and mobile facilities.		
FY 2011	• Prepared for a mock deployment at the Nevada National Security Site to test all systems (Mobile Plutonium and Mobile Uranium Facilities) and personnel to ensure they are ready to deploy to any identified countries of concern to eliminate nuclear weapons materials.	**8,768**
FY 2012	• Conduct a mock deployment at the Nevada National Security Site. Additional efforts over the long-term address maintaining a short-term readiness posture to deploy assets rapidly to assist in recovery of nuclear materials. In addition, the program provides life-cycle replacement of equipment to maintain state-of-the-art technical capability.	**5,000**
FY 2013	• Ensure a short-term readiness posture to deploy assets rapidly to assist in recovery of nuclear materials including preventive and corrective maintenance of systems and personnel training.	**5,000**
FY 2014-FY 2017	• Ensure a short-term readiness posture to deploy assets rapidly to assist in recovery of nuclear materials including preventive and corrective maintenance of systems and personnel training.	**20,000**
International Radiological Material Removal This activity supports the removal and disposal of excess or abandoned radiological materials in other countries. This includes Russian radioisotopic thermoelectric generators (RTGs), U.S.-origin sealed sources in other countries, and other orphaned radiological materials.		
FY 2011	• Completed the removal of an additional 64 RTGs, resulting in a cumulative total of 396 RTGs removed by GTRI through direct funding and international contributions (e.g., Canada). Attesting to the cooperative nature of these tasks, our international partners (e.g., Russia, Norway, and France) have funded the recovery of an additional cumulative 299 RTGs for a grand total of 695 of the 851 RTGs being completed. • Funds were used to recover and dispose of orphaned radioactive sources in other countries.	**20,660**
FY 2012	• Complete the removal of an additional 34 RTGs, resulting in a cumulative total of 430 RTGs removed by GTRI through direct funding and international contributions (e.g., Canada). Attesting to the cooperative nature of these tasks, by the end of FY2012, our international partners are expected to have funded the recovery of an additional cumulative 305 RTGs for a grand total of 735 of the 851 RTGs being completed. • Funds will also be used to recover and dispose of orphaned radioactive sources in other countries.	**20,000**
FY 2013	• Complete the removal of an additional 8 RTGs, resulting in a cumulative total of 438 RTGs removed by GTRI through direct funding and international contributions (e.g., Canada). Attesting to the cooperative nature of these tasks, by the end of FY2013, our international partners are expected to have funded the recovery of an additional cumulative 311 RTGs for a grand total of 749 of the 851 RTGs being completed. • Funds will also be used to recover and dispose of orphaned radioactive sources in other countries.	**8,000**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Nuclear and Radiological Material Removal		
FY 2014-FY 2017	• GTRI and its international partners will complete the removal of the remaining 102 RTGs resulting in all 851 RTGs removed by GTRI through direct funding and international contributions (e.g., Canada). • Funds will also be used to recover and dispose of orphaned radioactive sources in other countries.	**80,000**
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.		
FY 2011	• Removed an additional 2,571 excess and unwanted sealed sources from locations in the United States, resulting in a cumulative total of 28,743 excess sealed sources removed.	**19,128**
FY 2012	• Remove an additional 1,900 excess and unwanted sealed sources from locations in the United States, resulting in a cumulative total of 30,643 excess sealed sources removed.	**20,000**
FY 2013	• Remove an additional 1,900 excess and unwanted sealed sources from locations in the United States, resulting in a cumulative total of 32,543 excess sealed sources removed.	**19,000**
FY 2014-FY 2017	• Continue to remove an additional 7,600 excess and unwanted sealed sources from locations in the United States for a total of over 40,000 sources.	**80,000**

Nuclear and Radiological Material Removal Protection (Homeland Security)
Overview

GTRI's Protect subprogram supports the securing of high priority nuclear and radiological material worldwide from theft and sabotage. These efforts result in threat reduction by improving security on the bomb material remaining at civilian sites.

Sequence

Benefits

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.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
Nuclear and Radiological Material Protection		
FY 2011		**113,717**
FY 2012		**103,000**
FY 2013		**105,021**
FY 2014-FY 2017		**551,334**
BN-350 Nuclear Material Protection This activity provides for the safe and secure long-term storage of approximately 3,000 kilograms of weapons-grade plutonium and 10,000 kilograms of HEU in spent fuel from the shutdown BN-350 fast breeder reactor in Kazakhstan. The BN-350 shipments were completed in November 2010; and these minimal funds will support the project close out activities and verify all security systems are fully operational.		
FY 2011	• The BN-350 shipments were completed in November 2010; minimal funds support the project close out activities and verify all security systems are fully operational.	**1,840**
FY 2012	• The BN-350 shipments were completed in November 2010; minimal funds will support the project close out activities and verify all security systems are fully operational.	**2,000**
FY 2013	• Project ends in FY2012	**0**
FY 2014-FY 2017	• Project ends in FY2012	**0**
International Material Protection 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.		
FY 2011	• Completed security upgrades at an additional 123 research reactor and radiological buildings, resulting in a cumulative total of 852 international buildings secured. Efforts also include working with the International Atomic Energy Agency (IAEA), foreign regulators, and sites to support the sustainability of previously installed security upgrades at 729 buildings in over 70 countries.	**46,573**
FY 2012	• Complete security upgrades at an additional 53 research reactor and radiological buildings, resulting in a cumulative total of 905 international buildings secured. • Work with the International Atomic Energy Agency (IAEA), foreign regulators, and sites to support the sustainability of previously installed security upgrades at	**50,000**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Nuclear and Radiological Material Protection		
	852 buildings in over 70 countries.	
FY 2013	• Complete security upgrades at an additional 50 research reactor and radiological buildings, resulting in a cumulative total of 955 international buildings secured. Efforts also include working with the IAEA, foreign regulators, and sites to support the sustainability of previously installed security upgrades at 905 buildings in over 70 countries.	**50,000**
FY 2014-FY 2017	• Continue to complete security upgrades at an additional 415 research reactors and radiological buildings, for a cumulative total of 1,370. Efforts will also include working with the IAEA, foreign regulators, and sites to support the sustainability of previously installed security.	**253,000**
Domestic Material Protection (Homeland Security) 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.		
FY 2011	• Completed security upgrades at an additional 93 research reactor and radiological buildings, resulting in a cumulative total of 335 domestic buildings secured. • Worked with Federal, State, and local authorities and the sites to support the sustainability of previously installed security upgrades at 242 buildings and conducted 18 Alarm Response Training sessions for over 720 first responders.	**65,304**
FY 2012	• Complete security upgrades at an additional 115 research reactor and radiological buildings, resulting in a cumulative total of 450 domestic buildings secured. • Work with Federal, State, and local authorities and the sites to support the sustainability of previously installed security upgrades at 335 buildings and conduct 24 Alarm Response Training sessions for over 900 first responders.	**51,000**
FY 2013	• Complete security upgrades at an additional 100 research reactor and radiological buildings, resulting in a cumulative total of 550 domestic buildings secured. • Work with Federal, State, and local authorities and the sites to support the sustainability of previously installed security upgrades at 450 buildings and conduct 24 Alarm Response Training sessions for over 900 first responders.	**55,021**
FY 2014-FY 2017	• Continue to complete security upgrades at an additional 550 research reactor and radiological buildings, for a cumulative total of 1,100. Efforts also include working with Federal, State, and local authorities and the sites to support the sustainability of previously installed security upgrades and conduct an additional 160 Alarm Response Training sessions for 6,400 first responders.	**298,334**

Capital Operating Expenses and Construction Summary
Capital Operating Expenses [a]

(dollars in thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Capital Operating Expenses			
General Plant Projects	1,500	1,533	1,567
Capital Equipment	4,883	4,990	5,100
Total, Capital Operating Expenses	**6,383**	**6,523**	**6,667**

Outyear Capital Operating Expenses

(dollars in thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request
Capital Operating Expenses				
General Plant Projects	1,601	1,636	1,672	1,709
Capital Equipment	5,212	5,327	2,444	5,564
Total, Capital Operating Expenses	**6,813**	**6,963**	**4,116**	**7,273**

[a] Funds are appropriated for Operations and Maintenance, which includes operating expenses, capital equipment and general plant projects. The program no longer budgets separately for capital equipment and general plant projects. Funding shown reflects estimates based on actual FY 2011 obligations.

Naval Reactors

[redacted]

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, $1,088,635,000, to remain available until expended: Provided, That $43,212,000 shall be available until September 30, 2014 for program direction.

Explanation of Change

Change from the language proposed in FY 2012 consists of a change to the requested funding amount.

Overview
Appropriation Summary by Program

(dollars in thousands)

	FY 2011 Current	FY 2012 Enacted [a]	FY 2013 Request [b]
Naval Reactors			
Naval Reactors Operations and Maintenance (O&M)	914,071	0	0
Naval Reactors Operations and Infrastructure	0	358,300	366,961
Naval Reactors Development	0	421,000	418,072
S8G Protype Refueling	0	99,500	121,100
OHIO Replacement Reactor Systems Development	0	121,300	89,700
Total, Naval Reactors O&M	914,071	1,000,100	995,833
Program Direction	39,920	40,000	43,212
Construction	32,535	39,900	49,590
Subtotal, Naval Reactors	**986,526**	**1,080,000**	**1,088,635**
Rescission of Prior Year Balances	-1,000	0	0
Total, Naval Reactors	**985,526**	**1,080,000**	**1,088,635**

Out-Year Appropriation Summary by Program

(dollars in thousands)

	FY 2014 Projection [b]	FY 2015 Projection [b]	FY 2016 Projection	FY 2017 Projection
Naval Reactors				
Naval Reactors Operations and Infrastructure	**384,365**	**377,814**	**383,719**	**396,283**
Naval Reactors Development	**434,306**	**426,245**	**432,449**	**446,609**
S8G Prototype Refueling [c]	**123,327**	**125,522**	**127,760**	**130,054**
OHIO Replacement Reactor Systems Development [c]	**91,350**	**92,975**	**94,634**	**96,333**
Program Direction	**49,670**	**52,400**	**54,159**	**56,096**
Construction	**25,373**	**54,230**	**58,300**	**50,600**
Total, Naval Reactors	**1,108,391**	**1,129,186**	**1,151,021**	**1,175,975**

[a] The Conference Report of H.R. 2055 Military Construction and Veterans Affairs, and Related Agencies Appropriations Act, 2012 establishing new funding controls for Naval Reactors: Naval Reactors Operations and Infrastructure, Naval Reactors Development, S8G Prototype Refueling, and OHIO Replacement Reactor Systems Development.

[b] FY 2013, FY 2014 and FY 2015 includes an allocation to Naval Reactors from the Department of Defense's (DoD) Research, Development, Testing and Evaluation (RDT&E) account entitled "NNSA PROGRAM SUPPORT". The amounts included for Naval Reactors from this DoD account are FY 2013 $5.8 million; FY 2014, $2.0 million; and FY 2015, $0.9 million.

[c] Due to the Budget Control Act of 2011 the outyear funding for S8G Prototype Refueling and OHIO Replacement Reactor Systems Development is under review and will be updated at a later date.

Public Law Authorizations

P.L. 83-703, "Atomic Energy Act of 1954"
"Executive Order 12344 (42 U.S.C. 7158), "Naval Nuclear Propulsion Program"
National Nuclear Security Administration Act, (P.L. 106-65), as amended
FY 2012 Consolidated Appropriations Act, (P.L. 112-74)
National Defense Authorization Act for FY 2012 (P.L. 112-81)

Program Overview and Benefits

Naval Reactors (NR) is responsible for all naval 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 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 of program support 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 enable the U.S. Navy with nuclear propulsion plants that are capable of responding to the challenges of the 21st century security environment.

Program Accomplishments and Milestones

In the prior year, Naval Reactors reached several major accomplishments in fulfilling its mission to the Nation. Among these accomplishments is continued support for the VIRGINIA-class submarine construction including:

- Commissioning of the fourth Block II VIRGINIA-class submarine SSN 781 (USS CALIFORNIA) in late 2011.
- SSN 782 (USS MISSISSIPPI) keel laid down in 2010 in North Kingstown, Rhode Island for expected delivery in mid 2012.
- SSN 783 (USS MINNESOTA) keel laid down in 2011 in Newport News, Virginia for expected delivery in mid-2013.

In the area of spent fuel handling, Naval Reactors' accomplishments include:

- Delivery of the first three M-290 spent nuclear fuel shipping containers, a new spent fuel system that will be used exclusively for aircraft carrier spent fuel.
- Start of construction on the Expended Core Facility M-290 Receiving/Discharge Station line-item construction project, a necessary project for receipt and processing of aircraft carrier spent nuclear fuel.
- Continued preparations for the inactivation and disposal of CVN 65 (USS ENTERPRISE), the first-ever nuclear powered aircraft carrier decommissioning.

Naval Reactors' technical expertise and radiological experience was also leveraged in the United States' response to the Japan Fukushima Daiichi Nuclear Catastrophe through the following actions:

- Over 650 Naval Reactors program personnel (including subcontractors) supported disaster response, both in Japan and in emergency control centers in the US.
- Supported both the deployment of CVN 76 (USS RONALD REAGAN) and its battle group to the east coast of Japan during disaster relief operations and the movement of the Japan-based aircraft carrier CVN 73 (USS GEORGE WASHINGTON) out to sea to avoid radiation exposure from the Fukushima reactors.

Additionally, in the past years appropriations, Naval Reactors achieved three significant milestones. These accomplishments include: 1) 148 million cumulative miles of safely-steamed, militarily-effective nuclear propulsion plant operation; 2) Cumulative completion of 96% of the GERALD R. FORD-class next-generation aircraft carrier reactor plant design; and 3) 100% of Naval Reactors' operations had no adverse impact on human health or the quality of the environment.

In the current appropriation year, Naval Reactors is working towards achieving the following key metrics:

Fiscal Year 2013 Milestones

- Cumulative completion of 98% of the GERALD R. FORD-class next-generation aircraft carrier reactor plant design.
- Cumulative completion of 23 percent of the OHIO-class Ballistic Missile Submarine Replacement reactor plant design.

Explanation of Changes

Naval Reactors' request of $1,089 million in Fiscal Year 2013 is for continued achievement of its core objective of

ensuring the safe and reliable operation of the Nation's nuclear fleet. The Fiscal Year 2013 request also includes continued support for three major initiatives; the OHIO Ballistic Missile Submarine Replacement, Land-based Prototype Refueling Overhaul, and the recapitalization of the program's spent fuel handling project.

Program Planning and Management

Naval Reactors regularly validates its work and funding priorities, which facilitates clear alignment with NNSA and DOE strategic objectives. By engaging in semi-annual, bottom-up reviews of its work across the Future Years Nuclear Security Plan (FYNSP), Naval Reactors' process for allocating resources consistently achieves its goal of funding the highest priority work and addressing near-term and out-year challenges using an enterprise solution approach.

Naval Reactors continues to apply robust project management principles and controls throughout its project portfolio to ensure the most effective and efficient use of taxpayer dollars. For example, the program has focused on early risk identification and analysis as a critical aspect of project planning. Maintaining active risk management plans that continuously monitor and proactively manage risks helps the program characterize the status of projects across the enterprise and identify key risks to project success, e.g., industrial base, cost of materials, technical uncertainty.

Major Out-Year Priorities and Assumptions

Outyear funding supports Naval Reactors' core mission of providing proper maintenance and safety oversight, and addressing emergent operational issues and technology obsolescence for 103 reactor plants. This includes 71 submarines, 11 aircraft carriers, and four research and development and training platforms (including the land-based prototypes). Outyear funding also supports Naval Reactors' continued achievement of ongoing new plant design projects (i.e., the reactor plant for the GERALD R. FORD-class aircraft carrier and a lower-cost core for VIRGINIA-class submarines), 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.

Due to the Budget Control Act of 2011 the outyear funding for S8G Prototype Refueling and OHIO Replacement Reactor Systems Development is under review and will be updated at a later date.

Program Goals and Funding

The requested funding in FY 2013 includes a small increase to support continued execution of three major new projects (i.e., OHIO Replacement, Land-based Prototype Refueling Overhaul, and Spent Fuel Handling Recapitalization) which are needed to deliver Navy-established mission requirements. Specifically, the Navy has approved Milestone A for the OHIO Replacement. The features and military capabilities for the new ballistic missile submarine are enabled by the ongoing development of a new core and reactor plant as part of Naval Reactors' OHIO Replacement and Land-based Prototype Refueling Overhaul programs. Further, recapitalization of the spent fuel handling infrastructure located at the Idaho National Laboratory preserves the capability to refuel and defuel aircraft carriers and submarines, which is critical to ensuring their operational availability for national security missions. Specific goals include:

- Sufficient OHIO Replacement reactor design maturity to support long-lead procurements for ship construction beginning in 2021, a two year delay.
- Completion of the refueling overhaul of the land-based prototype by 2021.
- Evaluation of alternatives to facilitate progress of the Spent Fuel Handling Recapitalization Project.

Due to the Budget Control Act of 2011 the outyear funding for S8G Prototype Refueling and OHIO Replacement Reactor Systems Development is under review and will be updated at a later date.

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

The NNSA Naval Reactors appropriation projected contribution to the DOE Working Capital Fund for FY 2013 is $3,301,000.

The Department is working to achieve economies of scale through an enhanced Working Capital Fund and has added $1,614,000 to Naval Reactors. The WCF increase covers certain shared, enterprise activities including enhanced cyber security architecture, employee health and testing services, and consolidated training and recruitment initiatives.

Minority Serving Institution Partnerships Program

The Minority Serving Institution Partnerships Program (MSIPP-NNSA) aligns MSI investments with the NNSA mission in order to develop the needed skills and talent for NNSA's enduring technical workforce at the laboratories and production plants, and to enhance the research and education at under-represented colleges and universities.

NNSA previously supported MSI efforts, including Historically Black Colleges and Universities (HCBUs), through the Office of the Administrator, Weapons Activities, Defense Nuclear Nonproliferation, and Naval Reactors appropriations. FY 2013 will initiate the transition from the existing set of minority serving institution projects to the MSIPP, although the appropriations will still be requested in WA, DNN, and NR. The FY 2013 Request is $14.7 million of which $1.0 million is requested within Naval Reactors.

The goals of the MSIPP are as follows: 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 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 sites; and 5) Increase the number of MSI graduates/Postdocs hired into DOE's technical and scientific workforce.

Contractor Pensions

In FY 2013, Naval Reactors total planned pension contribution is $136,400,000 of which $81,800,000 is funded via Naval Reactors' Department of Energy budget and $54,600,000 is funded via Naval Reactors' Department of Defense budget. This contribution is as of January 2012 and may change due to actuarial assumptions and market conditions.

Goal Area by Subprogram

Naval Reactors		
STRATEGIC GOAL: Secure our Nation: Enhance nuclear security through defense, nonproliferation, and environmental efforts		
OBJECTIVE: Apply DOE's capabilities for other critical national security missions		
TARGETED OUTCOME: Provide the US Navy with an A1B reactor plant by 2015 for next generation aircraft carrier that increases core energy, provides nearly three times the electric plant generating capability and requires half the number of reactor department sailors as compared to today's aircraft carriers		
FY 2013 Annual Measure: A1B Reactor Plant Design: Cumulative percentage of completion on the next-generation aircraft carrier reactor plant design.		
	Target	**Actual/Met or Not Met**
Budget Year	98%	TBD
Current Year	96%	TBD
Prior Year	94%	94%
Complete the next-generation aircraft carrier reactor plant by 2015. This result is important because it provides the Navy with next-generation aircraft carrier propulsion plant technology that increases core energy, provides nearly three times the electric plant generating capability and will require half of the reactor department sailor's needed as compared to today's nuclear-powered aircraft carriers.		
TARGETED OUTCOME: Provide the US Navy with a reactor plant that will extend core lifetime for the next generation ballistic missile submarine		
FY 2013 Annual Measure: OHIO Replacement Reactor Plant Design: Cumulative percentage of work complete on the OHIO Replacement submarine reactor plant design.		
	Target	**Actual/Met or Not Met**
Budget Year	23%	TBD
Current Year	12%	TBD
Prior Year	N/A	N/A
S1B is the propulsion plant design supporting the OHIO Replacement which will provide for the Nation's Sea Based Strategic Deterrent into the 2080s. The S1B reactor and life-of-ship core design supports over 40 years of operation, exceeding VIRGINIA Class by more than 10 years, and enables 2 fewer submarines that the OHIO Class to fulfill its mission.		

Explanation of Funding and/or Program Changes
($ in thousands)

	(dollars in thousands)		
	FY 2012 Enacted	FY 2013 Request	FY 2013 vs. FY 2012
Naval Reactors			
Naval Reactors Operations and Infrastructure	**358,300**	**366,961**	**+8,661**
Reflects an increase for continued conceptual design for the Spent Fuel Handling Recapitalization Project.			
Naval Reactors Development	**421,000**	**418,072**	**-2,928**
Reflects a net decrease due to decreasing requirement for construction support for FORD-class reactor plants and completion of VIRGINIA Forward Fit design.			
S8G Prototype Refueling	**99,500**	**121,100**	**+21,600**
Reflects an increase in funding for the Land-based Prototype Refueling Overhaul core design consistent with the project's objective of supporting the OHIO Replacement reactor design and refueling overhaul completion in 2021.			
OHIO Replacement Reactor Systems Development	**121,300**	**89,700**	**-31,600**
Reflects a decrease in funding for OHIO Replacement reactor design consistent with the change in ship construction start from 2019 to 2021.			
Program Direction	**40,000**	**43,212**	**+3,212**
Reflects an increase commensurate with the higher costs to hire qualified and experienced engineering personnel to replace retiring engineering personnel.			
Construction	**39,900**	**49,590**	**+9,690**
Reflects an increase in funds for the 13-D-905 Remote-Handled Low-Level Waste Disposal Project, 13-D-904 KS Radiological Work and Storage Building, 13-D-903 KS Prototype Staff Building, and 10-D-903 Security Upgrades, KAPL.			
Total Funding Change, Naval Reactors	**1,080,000**	**1,088,635**	**+8,635**

Naval Reactors – Program Direction

Funding by Site

(dollars in thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Naval Reactors Program Direction			
Headquarters			
Salaries and Benefits	17,084	15,200	17,156
Travel	1,535	1,380	1,360
Other Related Expenses	3,122	3,500	3,700
Total, Headquarters	**22,513**	**20,080**	**22,216**
Full-Time Equivalents	**111**	**116**	**111**
Naval Reactors Laboratory Field Office			
Salaries and Benefits	14,934	16,600	17,356
Travel	1,196	820	840
Other Related Expenses	2,049	2,500	2,800
Total, Naval Reactors Laboratory Field Office	**17,407**	**19,920**	**20,996**
Full-Time Equivalents	**118**	**125**	**127**
Total, Naval Reactors Program Direction			
Salaries and Benefits	32,018	31,800	34,512
Travel	2,731	2,200	2,200
Other Related Expenses	5,171	6,000	6,500
Total, Naval Reactors Program Direction	**39,920**	**40,000**	**43,212**
Full-Time Equivalents	**229**	**241**	**238**

Overview

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 training program unique to Naval Reactors. The skills attained through this training program have groomed engineers far beyond the skill set of nuclear engineers found in the commercial and federal sectors.

Recently, retirements have resulted in a significant loss of program engineering experience. Hirings for experienced and skilled engineers are planned by Naval Reactors to ensure knowledge transfer from expert to junior naval nuclear engineers.

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 US) 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.

Explanation of Funding and/or Program Changes
($ in thousands)

	(dollars in thousands)		
	FY 2012 Enacted	FY 2013 Request	FY 2013 vs. FY 2012
Naval Reactors			
Program Direction			
Salaries and Benefits	**31,800**	**34,512**	**+2,712**
Reflects an increase commensurate with the higher costs to hire qualified and experienced engineering personnel to replace retiring engineering personnel.			
Travel	**2,200**	**2,200**	**0**
No change.			
Other Related Expenses	**6,000**	**6,500**	**+500**
Reflects an increase to Working Capital Fund (WCF) requirements related to growth in Defense Contract Auditing Agency (DCAA) costs, as well as upgrades to video teleconferencing equipment, will allow NR to conduct more oversight functions remotely.			
Total Funding Change, Naval Reactors Program Direction	**40,000**	**43,212**	**+3,212**

Capital Operating Expenses and Construction Summary

Capital Operating Expenses

General Plant Projects (GPPs) are construction projects that are less than $10 million and necessary to adapt facilities to new or improved production techniques, to effect economies of operation, and to reduce or eliminate health, fire, and security problems. The following table displays total GPP funding by site and includes funds found within both the Naval Reactors Operations and Infrastructure fund category as well as funds specific to particular projects (i.e., OHIO Replacement Reactor Systems Development and S8G Prototype Refueling). Funding in FY 2013 includes Project Engineering and Design (PED) funds for the Knolls Laboratory Site Steam Distribution Upgrade, a $5.2million project planned for execution in FY 2015.

(dollars in thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
General Plant Projects (GPP)			
Bettis Laboratory (BL)	4,500	800	0
Kesselring Site (KS)	15,800	987	0
Knolls Laboratory (KL)	8,200	7,171	600
Naval Reactors Facility (NRF)	5,800	1,000	0
Total, GPP	**34,300**	**9,958**	**600**

(dollars in thousands)

Capital Equipment	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Naval Reactors Operations & Infrastructure	8,786	13,521	3,616
S8G Prototype Refueling	1,100	2,600	11,750
Total, Capital Equipment	**9,886**	**16,121**	**15,366**

Major Items of Equipment (MIE)

(dollars in thousands)

	Total Estimated Cost (TEC)	Prior Year Appro-priation	FY 2011 Current	FY 2012 Enacted	FY 2013 Request	Unappro-priated Balance	Completion Date
High Performance Computers (FY 2011 Buy)	9,000	0	9,000	0	0	0	FY 2011
High Performance Computers (FY 2012 Buy)	11,000	0	0	11,000	0	0	FY 2012
High Performance Computers (FY 2013 Buy)	2,000	0	0	0	2,000	0	FY 2013
KAPL Network Upgrade	4,200	1,800	1,200	1,200	0	0	FY 2012
Bettis Network Upgrade	3,000	1,000	1,000	1,000	0	0	FY 2012
Land-based Prototype Rod Control Equipment	10,500	0	0	1,300	3,700	5,500	FY 2019
Land-based Prototype Instrumentation & Control	17,900	400	1,100	1,300	8,050	7,050	FY 2019
Total, Major Items of Equipment			**12,300**	**15,800**	**13,750**		

Construction Summary

(dollars in thousands)

	Total Estimated Cost (TEC)	Prior Year Appro-priations	FY 2011 Current	FY 2012 Enacted	FY 2013 Request	Unappro-priated Balance
07-D-190 Materials Research and Technology Complex, Bettis	29,805	27,110	2,695	0	0	0
08-D-190 ECF M-290 Receiving/Discharge Station, NRF	70,895	10,345	24,950	27,800	5,700	2,100
09-D-902 NRF Production Support Complex, ID	18,692	14,700	3,992	0	0	0
10-D-904 NRF Infrastructure Upgrades, ID	13,199	700	499	12,000	0	0
10-D-903 Security Upgrades, KAPL	20,999	1,500	399	100	19,000	0
13-D-905 Remote-Handled Low-Level Waste Disposal Project[a]	35,493	0	0	0	8,890	26,603
13-D-904 KS Radiological Work and Storage Building	20,500	0	0	0	2,000	18,500
13-D-903 KS Prototype Staff Building	14,000	0	0	0	14,000	0
Total, Construction			**32,535**	**39,900**	**49,590**	

[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 Naval Reactors' contribution. For additional details see the associated Project Data Sheet.

13-D-903, Kesselring Site Prototype Staff Building
Kesselring Site, West Milton, NY
Project Data Sheet (PDS) is for Design and Construction

1. Significant Changes

The most recent DOE O 413.3 approved Critical Decision (CD) is CD-1/2, Approve Alternative Selection and Cost Range/Approve Performance Baseline, which was approved on April 27, 2011 with a Total Project Cost of $15,250 and a CD-4 of 3Q FY 2015.

A Federal Project Manager has been assigned to this project.

This PDS includes a new start for the budget year.

This PDS is new for Construction.

2. Design, Construction, and D&D Schedule

(fiscal quarter or date)

	CD-0	CD-1	PED Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2013	7/08/2010	4/27/2011	N/A	4/27/2011	3Q FY2012	3Q FY2015	1Q FY2013	4Q FY2013

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[a]	TEC, Construction	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
FY 2013	1,000	14,000	14,000	939	311	1,250	15,250

4. Project Description, Justification, and Scope

Mission Need

Training naval nuclear sailors and completing research and development initiatives are the primary missions of the Kesselring Site. A 25% student load increase which began in FY 2010 resulted in higher student enrollment within the Nuclear Field "A" School, Nuclear Power School, and the Nuclear Power Training Units. In support of this student load increase, this project will provide a professional environment to include training facilities with adequate space, capacity, and quality to meet training objectives.

[a] PED funds are not required for this effort and those funds are included within the Construction estimate.

Scope and Justification: 13-D-903, Kesselring Site Prototype Staff Building

The Kesselring Site Prototype Staff Building will provide the professional training offices, restrooms, classrooms, and associated training space necessary to perform off-crew training in support of the land-based prototypes. The project will construct a multistory facility that will encompass approximately 25,000 square feet. The new building will have sufficient capacity to train 330 students simultaneously for the land-based prototype off-crew training groups. The facility will also provide offices for training management, off-crew instructors, and supportive training personnel.

The increased student enrollment requires additional training space as well as refurbishments to existing training accommodations. Naval Reactors' strategy also includes upgrading facilities to meet professional Navy training standards. Co-locating the land-based prototype off-crew training groups in a common location will result in more effective use of physical and human resources.

The second and third floors of the facility will comprise the land-based prototype off-crew training areas. These floors will contain staff offices, check out cubes, student training classrooms, and libraries. The first floor of the facility will contain common use spaces such as break areas, learning resource centers, exam preparation areas, seminar areas, and equipment areas. Each floor will contain restroom facilities and janitor's closets. The building design will accommodate the appropriate alarm and access control systems and meet security construction/barrier requirements for isolation and protection of classified information. With the exception of the library areas which will be designated as open storage security areas, all classified and unclassified sensitive will either be under the direct continuous control of assigned personnel or returned to approved repository storage. An elevator will be included in the building.

Normal building utilities including lighting, heating, conditioned air, fire protection, and automatic temperature control systems will be provided as part of the project. All necessary data infrastructure to meet the learning resource center, local area network, and other network needs will be included. Other features will include LEED Gold Certification and compliance with the Architectural Barriers Act.

The Kesselring Site Prototype Staff Building is being constructed using Department of Energy funds, consistent with other construction projects at NR's DOE facilities. Prototype staff and Navy students operate the two nuclear plants at the Kesselring Site to perform the site's research and development mission.

The project is being conducted in accordance with the NR Implementation Bulletin for DOE O 413.3 and the NR Program and Project Management Manual, 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	1,000	1,000	1,000
Total, Design	1,000	1,000	1,000
Construction			
FY 2013	13,000	13,000	3,400
FY 2014	0	0	5,700
FY 2015	0	0	3,900
Total, Construction	13,000	13,000	13,000
TEC			
FY 2013	14,000	14,000	4,400
FY 2014	0	0	5,700
FY 2015	0	0	3,900
Total, TEC	14,000	14,000	14,000
Other Project Cost (OPC)			
OPC except D&D			
FY 2010	100	100	100
FY 2011	0	0	0
FY 2012	300	300	300
FY 2013	539	539	539
FY 2014	0	0	0
FY 2015	0	0	0
Total, OPC except D&D	939	939	939
D&D			
FY 2013	311	311	311
Total, D&D	311	311	311
OPC			
FY 2010	100	100	100
FY 2011	0	0	0
FY 2012	300	300	300
FY 2013	850	850	850
FY 2014	0	0	0
FY 2015	0	0	0
Total, OPC	1,250	1,250	1,250
Total Project Cost (TPC)			
FY 2010	100	100	100
FY 2011	0	0	0
FY 2012	300	300	300
FY 2013	14,850	14,850	5,250
FY 2014	0	0	5,700
FY 2015	0	0	3,900
Total, TPC	15,250	15,250	15,250

6. Details of Project Cost Estimate

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	1,000	N/A	L,000
Contingency	0	N/A	0
Total, Design	1,000	N/A	L,000
Construction			
Site Preparation	1,447	N/A	1,447
Equipment	500	N/A	500
Other Construction	9,773	N/A	9,773
Contingency	1,280	N/A	1,280
Total, Construction	13,000	N/A	13,000
Total, TEC	14,000	N/A	14,000
Contingency, TEC	1,280	N/A	1,280
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	0	N/A	0
Conceptual Design	100	N/A	100
Start-up	839	N/A	839
Contingency	0	N/A	0
Total, OPC except D&D	1,250	N/A	1,250
D&D			
D&D	311	N/A	311
Contingency	0	N/A	0
Total, D&D	311	N/A	311
Total, OPC	1,250	N/A	1,250
Contingency, OPC	0	N/A	0
Total, TPC	15,250	N/A	15,250
Total, Contingency	1,280	N/A	1,280

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 2013 Performance Baseline	TEC	0	0	14,000	0	0	0	0	0	14,000
	OPC	100	300	850	0	0	0	0	0	1,250
	TPC	100	300	14,850	0	0	0	0	0	15,250

8. Related Operations and Maintenance Funding Requirements

Start of Operation of Beneficial Occupancy (fiscal quarter or date)	3Q FY 2015
Expected Useful Life (number of years)	40
Expected Future Start of D&D of this capital asset (fiscal quarter)	4Q FY 2055

(Related Funding Requirements)

(dollars in thousands)

	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	100	N/A	6,173	N/A
Maintenance	180	N/A	11,111	N/A
Total, Operations and Maintenance	280	N/A	17,284	N/A

9. Required D&D Information

Area	Square Feet
Area of new construction	25,000
Area of existing facility(s) being replaced and D&D'ed by this project	4,000
Area of additional D&D space to meet the "one-for-one" requirement from the banked area	21,000

Name(s) and site location(s) of existing facility(s) to be replaced: Kesselring Site building 65 (4,000 sq. ft.) will be demolished to support the construction of the new facility (included in TEC). 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. As demolition of the additional square footage supports "one-for-one" requirements across the Kesselring Site, non-project specific operating funds will be used to accomplish this effort.

10. Acquisition Approach

This contract will be designated as a fixed-price design-build contract for procurement and construction and will be awarded on the basis of competitive bidding.

13-D-904, Kesselring Site Radiological Work and Storage Building
Kesselring Site, West Milton, NY
Project Data Sheet (PDS) is for Design Only

1. Significant Changes

The most recent DOE O 413.3 approved Critical Decision (CD) is CD-0, Approve Mission Need, which was approved on April 19, 2011 with a preliminary cost range of $16,500 to $21,225 and a CD-4 of FY 2016.

A Federal Project Manager has been assigned to this project.

This PDS includes a new start for the budget year.

This PDS is new for PED.

2. Design, Construction, and D&D Schedule[a]

(fiscal quarter or date)

	CD-0	CD-1	PED 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	2Q FY2013

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, PED	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

4. Project Description, Justification, and Scope

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, MARF defueling) will exceed the site capacity of current buildings and enclosures. The Radiological Work and Storage Building will provide radiological trades work space and a radiological storage space to meet the increased space demand.

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

[b] Figures are only estimates and consistent with the high end of the cost ranges.

Scope and Justification: 13-D-904, Kesselring Site Radiological Work and Storage Building

Radiological work space is currently housed in certain 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.

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.

The Radiological Work and Storage Building will provide at least 3,600 sq. ft. of radiological trades work space and 3,600 sq. ft. of radiological storage space to help meet these space shortfalls. A new facility will be constructed on an existing storage pad within range of the Kesselring Site ringer crane, a required capability to support the Land-based Prototype Refueling Overhaul.

The project is being conducted in accordance with the NR Implementation Bulletin for DOE O 413.3 and the NR Program and Project Management Manual, and all appropriate project management requirements have been met.

5. Financial Schedule[a]

(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED			
FY 2013	2,000	2,000	1,600
FY 2014	600	600	1,000
Total, Design	2,600	2,600	2,600
Construction			
FY 2015	17,900	17,900	6,000
FY 2016	0	0	11,900
Total, Construction	2,600	2,600	2,600
TEC			
FY 2013	2,000	2,000	1,600
FY 2014	600	600	1,000
FY 2015	17,900	17,900	6,000
FY 2016	0	0	11,900
Total, TEC	20,500	20,500	20,500
Other Project Cost (OPC)			
OPC except D&D			
FY 2012	100	100	100
FY 2013	0	0	0
FY 2014	100	100	100
FY 2015	100	100	100
FY 2016	425	425	425
Total, OPC except D&D	725	725	725
D&D	N/A	N/A	N/A
Total, D&D	N/A	N/A	N/A
OPC			
FY 2012	100	100	100
FY 2013	0	0	0
FY 2014	100	100	100
FY 2015	100	100	100
FY 2016	425	425	425
Total OPC	725	725	725
Total Project Cost (TPC)			
FY 2012	100	100	100
FY 2013	2,000	2,000	1,600
FY 2014	700	700	1,100
FY 2015	18,000	18,000	6,100
FY 2016	425	425	12,325
Total, TPC	21,225	21,225	21,225

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

6. Details of Project Cost Estimate[a]

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED)			
Design	2,400	N/A	N/A
Contingency	200	N/A	N/A
Total, PED	2,600	N/A	N/A
Construction			
Site Preparation	0	N/A	N/A
Equipment	0	N/A	N/A
Other Construction	16,300	N/A	N/A
Contingency	1,600	N/A	N/A
Total, Construction		N/A	N/A
Total, TEC	20,500	N/A	N/A
Contingency, TEC	1,800	N/A	N/A
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	0	N/A	N/A
Conceptual Design	100	N/A	N/A
Start-up	625	N/A	N/A
Contingency	0	N/A	N/A
Total, OPC except D&D	725	N/A	N/A
D&D	0	N/A	N/A
Total, D&D	0	N/A	N/A
Total, OPC	725	N/A	N/A
Contingency, OPC	0	N/A	N/A
Total, TPC	21,225	N/A	N/A
Total, Contingency	1,800	N/A	N/A

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 2013	TEC	0	0	2,000	600	17,900	0	0	0	20,500
	OPC	0	100	0	100	100	425	0	0	725
	TPC	0	100	2,000	700	18,000	425	0	0	21,225

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

8. Related Operations and Maintenance Funding Requirements

Not applicable for PED.

9. Required D&D Information

Not applicable for PED.

10. Acquisition Approach

Not applicable for PED.

13-D-905, Remote-Handled Low-Level Waste Disposal Project
Idaho National Laboratory
Project Data Sheet (PDS) is for Design and Construction

1. Significant Changes

The most recent DOE O 413.3A approved Critical Decision (CD) is for CD-1, Approve Alternative Selection and Cost Range, which was approved on July 13, 2011. CD-2, Approve Performance Baseline, and CD-3, Approve Start of Construction, is anticipated to be approved in the 1st Quarter of FY 2013 in compliance with the DOE O 413.3B. This is a non-major acquisition project with a cost range less than $100million. Based on the conceptual design and estimate, the lower and upper bound of the cost range is between $75 and $95 million respectively.

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 PDS is for new Design and Construction. This project data sheet (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 a readiness hold point established by DOE-Idaho (DOE-ID) prior to actual Start of Construction. The funding figures presented in Sections 5 and 6 represent the upper end of the cost range.

2. Design, Construction, and D&D Schedule

	CD-0	CD-1	CD-2/3	CD-4	D&D Start	D&D Complete
FY 2013	7/1/2009	7/13/11	1Q FY2013	4Q FY2017	4Q FY 2037	4Q FY 2038

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

	TEC[a], Design	TEC[a], Construction	TEC, Total[a]	OPC Except D&D[a]	OPC, D&D[a]	OPC, Total[a]	TPC[a]
FY 2013	3,820	63,440	67,260	27,740	0	27,740	95,000

[a] The baseline has been set at the high-end of the TPC range; the project baseline will be approved upon approval of CD-2.

4. Project Description, Justification, and Scope

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.

Project Description

The Project will provide capability for on-site disposal of remote-handled low-level waste (LLW) generated at the Idaho National Laboratory (INL) beyond the end of FY 2017 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 proposed facility will be designed and constructed similar to the remote-handled LLW subsurface concrete disposal vaults currently in use at RWMC's Subsurface Disposal Area (SDA). This approach accommodates, to the maximum extent possible, uninterrupted operations at the generating facilities and capitalizes on the operations experience and cost-efficiencies associated with current remote-handled LLW disposal practices.

The project Key Performance Parameters (KPPs) include:

- Design and construct a vault disposal system to dispose waste generated during the first 10 years of facility life ;
- Design a disposal facility to handle waste volume of approximately 1,600 m^3 that meets the requirements of DOE Order 435.1; and
- Design and construct supporting infrastructure that allows year-round waste emplacement.

Risks

Risk Driver	Risk Description	Handling Strategy
Funding Uncertainties	During potential continuing resolution, project may not receive sufficient funding to award contract to meet construction completion date.	Mitigate. Continue to work with NE and NNSA senior management to ensure funding requirements are met in time to support construction completion date.
Disposal Authorization Statement Delay	A delay in issuance of Disposal Authorization Statement could result in delay to Critical Decision-3, resulting in an overall project delay and increase in costs.	Mitigate. Seek Disposal Authorization Statement early in the project. Coordinate with the Office of Environmental Management to ensure sufficient time for regulatory review.

Justification

INL is a multipurpose national laboratory delivering specialized science and engineering solutions for DOE. Sponsorship of INL was formally transferred to DOE-NE in July 2002. The move to NE and consolidation with Argonne National Laboratory-West supports INL's role as DOE's lead nuclear energy laboratory. In addition, INL hosts the National Nuclear Security Administration's 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, 2017.

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 alternatives and pending completion of an assessment of the environmental impacts 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.

Scope

In the conceptual design, 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, approximately 400 vaults will be required in up to five different configurations to support Idaho site operations. 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. In response to potential public concerns, a wide variety of disposal liner options are being considered for possible inclusion as part of "systems approach" in design and performance of the facility.

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 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.

5. Financial Schedule[a]

(dollars in thousands) (Total Project @ Upper Bound)

	Appropriations			Obligations			
	NE	NR	Total	NE	NR	Total	Costs
Total Estimated Cost (TEC)							
Design[b]							
FY 2013	410	1,300	1,710	410	1,300	1,710	1,010
FY 2014	47	1,463	1,510	47	1,463	1,510	700
FY 2015	530	70	600	530	70	600	1,510
FY 2016	0	0	0	0	0	0	600
FY 2017	0	0	0	0	0	0	0
Total Design	987	2,833	3,820	987	2,833	3,820	3,820
Construction							
FY 2013	5,870	7,590	13,460	5,870	7,590	13,460	2,400
FY 2014	18,370	19,610	37,980	18,370	19,610	37,980	20,870
FY 2015	6,540	5,460	12,000	6,540	5,460	12,000	28,170
FY 2016	0	0	0	0	0	0	12,000
FY 2017	0	0	0	0	0	0	0
Total Construction	30,780	32,660	63,440	30,780	32,660	63,440	63,440
TEC							
FY 2013	6,280	8,890	15,170	6,280	8,890	15,170	3,410
FY 2014	18,417	21,073	39,490	18,417	21,073	39,490	21,570
FY 2015	7,070	5,530	12,600	7,070	5,530	12,600	29,680
FY 2016	0	0	0	0	0	0	12,600
FY 2017	0	0	0	0	0	0	0
Total TEC	**31,767**	**35,493**	**67,260**	**31,767**	**35,493**	**67,260**	**67,260**

[a] Budget figures shown for years after FY 2013 are notional. Funding decisions will be made on a year-by-year basis.

[b] Design costs are part of the design-build contract, which is funded with construction funds.

(dollars in thousands) (Total Project @ Upper Bound)

	Appropriations			Obligations			
	NE	NR	Total	NE	NR	Total	Costs
Other Project Cost (OPC)							
OPC, except D&D							
FY 2009	184	0	184	184	0	184	184
FY 2010	3,706	0	3,706	3,706	0	3,706	3,706
FY 2011	4,300	0	4,300	4,300	0	4,300	3,774
FY 2012	3,800	0	3,800	3,800	0	3,800	4,326
FY 2013	430	1,310	1,740	430	1,310	1,740	1,740
FY 2014	415	1,075	1,490	415	1,075	1,490	1,490
FY 2015	1,030	570	1,600	1,030	570	1,600	l,600
FY 2016	4,170	3,640	7,810	4,170	3,640	7,810	7,810
FY 2017	1,735	1,375	3,110	1,735	1,375	3,110	3,110
Total OPC, except D&D	19,770	7,970	27,740	19,770	7,970	27,740	27,740
D&D							
Total D&D	0	0	0	0	0	0	0
OPC							
FY 2009	184	0	184	184	0	184	184
FY 2010	3,706	0	3,706	3,706	0	3,706	3,706
FY 2011	4,300	0	4,300	4,300	0	4,300	4,300
FY 2012	3,800	0	3,800	3,800	0	3,800	4,326
FY 2013	430	1,310	1,740	430	1,310	1,740	1,740
FY 2014	415	1,075	1,490	415	1,075	1,490	1,490
FY 2015	1,030	570	1,600	1,030	570	1,600	1,600
FY 2016	4,170	3,640	7,810	4,170	3,640	7,810	7,810
FY 2017	1,735	1,375	3110	1,735	1,375	3,110	3,110
Total OPC	**19,770**	**7,970**	**27,740**	**19,770**	**7,970**	**27,740**	**27,740**
Total Project Cost (TPC)							
FY 2009	184	0	184	184	0	184	184
FY 2010	3,706	0	3,706	3,706	0	3,706	3,706
FY 2011	4,300	0	4,300	4,300	0	4,300	3,774
FY 2012	3,800	0	3,800	3,800	0	3,800	4,326
FY 2013	6,710	10,200	16,910	6,710	10,200	16,910	5,150
FY 2014	18,832	22,148	40,980	18,832	22,148	40,980	23,060
FY 2015	8,100	6,100	14,200	8,100	6,100	14,200	31,280
FY 2016	4,170	3,640	7,810	4,170	3,640	7,810	20,410
FY 2017	1,735	1,375	3,110	1,735	1,375	3,110	3,110
Total TPC	**51,537**	**43,463**	**95,000**	**51,537**	**43,463**	**95,000**	**95,000**

6. Details of Project Cost Estimate

	(dollars in thousands)		
	CD-1 Upper Bound Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	3,220	N/A	N/A
Contingency	600	N/A	N/A
Total, Design	3,820	N/A	N/A
Construction			
Site Preparation	NA	N/A	N/A
Equipment	10,000	N/A	N/A
Other Construction	51,520	N/A	N/A
Contingency	1,920	N/A	N/A
Total, Construction	63,440	N/A	N/A
Total, TEC	67,260	N/A	N/A
Contingency, TEC	2,520	N/A	N/A
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	8,030	N/A	N/A
Conceptual Design	3,240	N/A	N/A
Project Support	8,490	N/A	N/A
Start-Up	3,430	N/A	N/A
Contingency	4,550	N/A	N/A
Total, OPC except D&D	27,740	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	27,740	N/A	N/A
Contingency, OPC	4,550	N/A	N/A
Total, TPC	95,000	N/A	N/A
Total, Contingency	7,070	N/A	N/A

7. Schedule of Appropriation Requests

(dollars in thousands)

Request		Prior Years	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Outyears	Total
FY 2013 (initial request)	TEC	0	0	15,170	39,490	12,600	0	0		67,260
	OPC	8,190	3,800	1,740	1,490	1,600	7,810	3,110		27,740
	TPC	8,190	3,800	16,910	40,980	14,200	7,810	3,110	0	95,000
Performance Baseline	TEC									0
	OPC									0
	TPC	0	0	0	0	0	0	0	0	0
FY 2013	TEC									
	OPC									
	TPC	0	0	0	0	0	0	0	0	0

8. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	1Q FY 2018
Expected Useful Life (number of years)	20 years
Expected Future Start of D&D of this capital asset (fiscal quarter)	3Q FY 2037

(Related Funding requirements)

(dollars in thousands)

	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	5,130	NA	102,660	NA
Maintenance	490	NA	9,820	NA
Total, Operations & Maintenance	5,620	NA	112,480	NA

9. Required D&D Information

Area	Acres
Area of new construction	2 to 10 acres
Area of existing facility(s) being replaced	97 acres
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:

- Remote-handled LLW disposal vaults, SDA, RWMC (the cost to close RWMC, including the existing remote-handled LLW disposal vaults, will be 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) contractor will competitively procure the facility design and construction of the proposed onsite remote-handled LLW disposal facility utilizing a negotiated, design-build subcontract. The design-build subcontract will be competitively bid (FY 2012) and awarded in early FY 2013 (depending on availability of capital funding) to qualified general construction subcontractors. 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 contractor will provide project management, construction oversight, and Safety and Quality inspection during construction. In addition, the INL M&O contractor 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.

10-D-903, Security Upgrades, KAPL,
Schenectady, NY
Project Data Sheet (PDS) is for PED/Construction

1. Significant Changes

The most recent DOE O 413.3 approved Critical Decision (CD) is CD-2, Approve Performance Baseline, which was approved on August 1, 2011, with a Total Project Cost of $23,971 and a CD-4 of 4Q FY 2016.

A Federal Project Manager has been assigned to this project.

This PDS does not include a new start for the budget year; however, FY 2013 will be the first year this project requests construction funds.

This PDS is an update of the FY 2012 PDS. Since FY 2011, the project has been baselined at the Total Project Cost of $23,971. There have been no significant changes to scope, cost, schedule, or risks associated with this project.

2. Design, Construction, and D&D Schedule

(fiscal quarter or date)

	CD-0	CD-1	PED 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

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

No construction funds will be used until the project performance baseline has been validated and CD-3 has been approved.

4. Project Description, Justification, and Scope

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, robust, and reliable site entrance building and security perimeter system are key elements 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 413.3 and the NR Program and Project Management Manual, and all appropriate project management requirements have been met.

5. Financial Schedule[a]

(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED			
FY 2010	1,500	1,500	5
FY 2011	399	399	864
FY 2012	100	100	1,130
Total, Design	1,999	1,999	1,999
Construction			
FY 2013	19,000	19,000	3,000
FY 2014	0	0	7,300
FY 2015	0	0	6,400
FY 2016	0	0	2,300
Total, Construction	19,000	19,000	19,000
TEC			
FY 2010	1,500	1,500	5
FY 2011	399	399	864
FY 2012	100	100	1,130
FY 2013	19,000	19,000	3,000
FY 2014	0	0	7,300
FY 2015	0	0	6,400
FY 2016	0	0	2,300
Total, TEC	20,999	20,999	20,999

[a]Costs in FY 2010 and FY 2011 reflect actual performance. Costs in FY 2010 have been corrected from those in the FY 2012 Congressional Budget Request. Costs in FY 2012 and beyond are best estimates.

	(dollars in thousands)		
	Appropriations	Obligations	Costs
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	0	0	0
FY 2013	672	672	672
FY 2014	100	100	100
FY 2015	300	300	300
FY 2016	200	200	200
Total, OPC except D&D	1,672	1,672	1,672
D&D			
FY 2012	200	200	200
FY 2013	900	900	900
FY 2014	0	0	0
FY 2015	0	0	0
FY 2016	200	200	200
Total, D&D	1,300	1,300	1,300
OPC			
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	1,572	1,572	1,572
FY 2014	100	100	100
FY 2015	300	300	300
FY 2016	400	400	400
Total OPC	2,972	2,972	2,972
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	300	300	1330
FY 2013	20,572	20,572	4,572
FY 2014	100	100	7,400
FY 2015	300	300	6,700
FY 2016	400	400	2,700
Total, TPC	23,971	23,971	23,971

6. Details of Project Cost Estimate

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED)			
Design	1,850	1,818	1,850
Contingency	149	182	149
Total, PED	1,999	2,000	1,999
Construction			
Site Preparation	0	N/A	0
Equipment	85	N/A	85
Other Construction	16,088	N/A	16,088
Contingency	2,827	N/A	2,827
Total, Construction	19,000	N/A	19,000
Total, TEC	20,999	N/A	20,999
Contingency, TEC	2,976	N/A	2,976
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	0	N/A	0
Conceptual Design	372	400	372
Start-up	765	N/A	765
Contingency	535	N/A	535
Total, OPC except D&D	1,672	400	1,672
D&D			
D&D	1,230	N/A	1,230
Contingency	70	N/A	70
Total, D&D	1,300	N/A	1,300
Total, OPC	2,972	400	2,972
Contingency, OPC	605	N/A	605
Total, TPC	23,971	2,400	23,971
Total, Contingency	3,581	N/A	3,581

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 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	1,900	100	0	0	0	0	0	0	2,000
	OPC	300	0	0	0	0	0	0	0	300
	TPC	2,200	100	0	0	0	0	0	0	2,300
FY 2012	TEC	1,900	100	0	0	0	0	0	0	2,000
	OPC	400	0	0	0	0	0	0	0	400
	TPC	2,300	100	0	0	0	0	0	0	2,400
FY 2013	TEC	1,899	100	19,000	0	0	0	0	0	20,999
Performance	OPC	400	200	1,572	100	300	400	0	0	2,972
Baseline	TPC	2,299	300	20,572	100	300	400	0	0	23,971

8. Related Operations and Maintenance Funding Requirements

Start of Operation of Beneficial Occupancy (fiscal quarter or date)	4Q FY 2016
Expected Useful Life (number of years)	40
Expected Future Start of D&D of this capital asset (fiscal quarter)	1Q FY 2057

(Related Funding Requirements)

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	93	N/A	4,506	N/A
Maintenance	93	N/A	4,506	N/A
Total, Operations and Maintenance	186	N/A	9,012	N/A

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	5,880
Area of additional D&D space to meet the "one-for-one" requirement from the banked area	2,072

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.

10. Acquisition Approach

Design has been a 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 Data Sheet (PDS) is for PED/Construction

1. 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 $75,136 and a CD-4 of 1Q FY 2015.

A Federal Project Manager has been assigned to this project.

This PDS does not include a new start for the budget year.

This PDS is an update of the FY 2012 PDS. The project has completed CD-3 and construction contracts have been placed. Reduction in contingency is associated with completion of final design and contract placements. There have been no significant changes to scope, cost, schedule, or risks associated with this project.

2. Design, Construction, and D&D Schedule

(fiscal quarter or date)

	CD-0	CD-1	PED 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	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

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 2008	850	TBD	TBD	298	N/A	TBD	TBD
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	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

[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 PED funds going into FY 2011.

4. Project Description, Justification, and Scope

Mission Need

The M-290 Receiving/Discharge Station is needed to provide the capability to use the M-290 transportation cask to support both spent fuel canister shipments to a geologic repository or interim storage facility and spent 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 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 spent nuclear fuel at the shipyard. The full-length carrier 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 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 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 413.3 and the NR Program and Project Management Manual, and all appropriate project management requirements have been met.

5. Financial Schedule[a]

(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED			
FY 2008	545	545	436
FY 2009	300	300	95
FY 2010	3,236	3,236	3,507
FY 2011	177	177	220
Total, PED	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	32,354
FY 2013	5,700	5,700	17,135
FY 2014	1,700	1,700	7,819
FY 2015	400	400	580
Total, Construction	66,637	66,637	66,637
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	32,354
FY 2013	5,700	5,700	17,135
FY 2014	1,700	1,700	7,819
FY 2015	400	400	580
Total, TEC	70,895	70,895	70,895
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	115	115	115
FY 2014	260	260	260
FY 2015	500	500	500
Total, OPC except D&D	4,241	4,241	4,241

[a]Costs in FY 2011 and earlier reflect actual figures. Costs in FY 2009 and FY 2010 have been corrected from those in the FY 2012 Congressional Budget. Costs in FY 2012 and beyond reflect best estimates.

(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 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	115	115	115
FY 2014	260	260	260
FY 2015	500	500	500
Total, OPC	4,241	4,241	4,241
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	32,472
FY 2013	5,815	5,815	17,250
FY 2014	1,960	1,960	8,079
FY 2015	900	900	1,080
Total, TPC	75,136	75,136	75,136

6. Details of Project Cost Estimate

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED)			
Design	4,258	3,770	3,770
Contingency	0	311	311
Total, PED	4,258	4,081	4,081
Construction			
Site Preparation	0	0	0
Equipment	10,053	9,987	9,901
Other Construction	49,219	45,936	47,407
Contingency	7,365	10,941	9,556
Total, Construction	66,637	66,864	66,864
Total, TEC	70,895	70,945	70,945
Contingency, TEC	7,365	11,252	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	2,276	2,276	2,276
Contingency	0	0	0
Total, OPC except D&D	4,241	4,241	4,241
D&D			
D&D	N/A	N/A	N/A
Total, D&D	N/A	N/A	N/A
Total, OPC	4,241	4,241	4,241
Contingency, OPC	0	0	0
Total, TPC	75,136	75,186	75,186
Total, Contingency	7,365	11,252	9,867

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 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	15,745	0	6,800	0	0	0	0	0	22,545
	OPC	437	16	16	180	0	0	0	0	649
	TPC	16,182	16	6,816	180	0	0	0	0	23,194
FY 2011	TEC	35,345	27,800	5,700	1,700	400	0	0	0	70,945
	OPC	3,248	118	115	260	500	0	0	0	4,241
	TPC	38,593	27,918	5,815	1,960	900	0	0	0	75,186
FY 2012 Performance Baseline	TEC	35,345	27,800	5,700	1,700	400	0	0	0	70,945
	OPC	3,248	118	115	260	500	0	0	0	4,241
	TPC	38,593	27,918	5,815	1,960	900	0	0	0	75,186
FY 2013	TEC	35,295	27,800	5,700	1,700	400	0	0	0	70,895
	OPC	3,248	118	115	260	500	0	0	0	4,241
	TPC	38,543	27,918	5,815	1,960	900	0	0	0	75,136

8. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	1Q FY2015
Expected Useful Life (number of years)	40
Expected Future Start of D&D of this capital asset (fiscal quarter)	2Q FY2055

(Related Funding Requirements)

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	350	350	21,605	13,999
Maintenance	857	857	52,902	34,274
Total, Operations and Maintenance	1,207	1,207	74,507	48,273

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.

Site Funding Summary

(dollars in thousands)

	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Chicago Operations Office			
Ames Laboratory	200	300	0
Argonne National Laboratory	107,141	113,459	101,602
Brookhaven National Laboratory	19,094	39,168	45,466
Chicago Operations Office	3,260	2,000	0
Lawrence Berkeley National Laboratory	5,838	6,669	7,322
New Brunswick Laboratory	1,091	1,138	1,129
Idaho Operations Office			
Idaho National Laboratory	221,410	236,849	195,994
Idaho Operations Office	1,364	1,400	1,384
Kansas City Site Office			
Kansas City Plant	503,769	500,190	522,771
Kansas City Site Office	6,790	6,849	7,468
Livermore Site Office			
Lawrence Livermore National Laboratory	1,186,313	1,183,193	1,079,395
Livermore Site Office	19,407	19,822	20,208
Los Alamos Site Office			
Los Alamos National Laboratory	1,889,640	1,638,195	1,527,055
Los Alamos Site Office	19,036	19,157	19,416
National Energy Technology Laboratory			
National Energy Technology Laboratory	5,113	1,646	4,010
NNSA Albuquerque Complex			
NNSA Albuquerque Complex (all other sites)	568,463	764,581	451,720
General Atomics	23,700	23,300	0
Naval Research Laboratory	7,969	5,000	5,000
University of Rochester/LLE	62,785	62,083	60,250
Nevada Site Office			
Nevada National Security Site	319,721	302,194	317,927
Nevada Site Office	100,326	98,704	93,739
Remote Sensing Laboratory	4,742	4,784	3,322

	(dollars in thousands)		
	FY 2011 Current	FY 2012 Enacted	FY 2013 Request
Naval Reactors Laboratory Field Office	18,179	18,920	20,996
Oak Ridge Operations Office			
Oak Ridge Institute for Science and Engineering	15,506	16,898	17,590
Oak Ridge National Laboratory	243,442	212,780	154,454
Oak Ridge Operations Office	40	0	0
Office of Science and Technical Information	508	507	367
Pacific Northwest National Laboratory	242,694	272,709	208,115
Pantex Site Office			
Pantex Plant	576,727	622,871	590,574
Pantex Site Office	13,970	14,331	14,674
Pittsburgh Naval Reactors Office			
Bettis Atomic Power Laboratory	475,070	456,100	464,000
Richland Operations Office			
Richland Operations Office	1,528	1,630	1,503
Sandia Site Office			
Sandia National Laboratories	1,247,168	1,289,747	1,616,947
Sandia Site Office	22,360	26,062	26,446
Savannah River Operations Office			
Savannah River Operations Office	576,023	526,813	718,452
Savannah River Site	460,679	296,768	367,697
Savannah River Site Office	4,967	5,214	6,831
Schenectady Naval Reactors Office			
Knolls Atomic Power Laboratory	388,595	478,178	498,700
Washington DC Headquarters			
Headquarters	425,371	704,867	1,174,830
Y-12 Site Office			
Y-12 National Security Complex	888,031	1,028,523	1,172,534
Y-12 Site Office	19,461	17,401	15,998
Adjustments	-171,526	-21,000	0
Total, NNSA	10,525,965	11,000,000	11,535,886

GENERAL PROVISIONS

SEC. 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. 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 2013 until the enactment of the Intelligence Authorization Act for fiscal year 2013.

SEC. 303. Not to exceed 5 percent, or $100,000,000, of any appropriation, whichever is less, made available for Department of Energy activities funded in this Act or subsequent Energy and Water Development and Related Agencies Appropriations Acts may be transferred between such appropriations, but no such appropriation, except as otherwise provided, shall be increased or decreased by more than 5 percent by any such transfers, and any such proposed transfers shall be submitted promptly to the Committees on Appropriations of the House and Senate.

SEC. 304. 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. 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. 306. (a) The set-asides included in Division C of Public Law 111-8 for projects specified in the explanatory statement accompanying that Act in the following accounts shall not apply to such funds: "Defense Environmental Cleanup", "Electricity Delivery and Energy Reliability", "Energy Efficiency and Renewable Energy", "Fossil Energy Research and Development", "Non-Defense Environmental Cleanup", "Nuclear Energy", "Other Defense Activities", and "Science". (b) The set-asides included in Public Law 111-85 for projects specified in the explanatory statement accompanying that Act in the following accounts shall not apply to such funds: "Electricity Delivery and Energy Reliability", "Energy Efficiency and Renewable Energy", "Fossil Energy Research and Development", "Nuclear Energy", and "Science".

SEC. 307. Of the unobligated balances from prior year appropriations available under the heading "Energy Efficiency and Renewable Energy", $69,667,000 are hereby permanently cancelled: Provided, That no amounts may be cancelled from amounts that were designated by the Congress as an emergency requirement pursuant to the Concurrent Resolution on the Budget or the Balanced Budget and Emergency Deficit Control Act of 1985, as amended

SEC. 501. 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 (or had an officer or agent of such corporation acting on behalf of the corporation 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 agency has considered suspension or debarment of the corporation, or such officer or agent, and made a determination that this further action is not necessary to protect the interests of the Government.

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 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 agency has considered suspension or debarment of the corporation and 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 in contravention of Executive Order No. 12898 of February 11, 1994 (``Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations'').

Office of the Administrator

Weapons Activities

Defense Nuclear Nonproliferation

Naval Reactors