DOE/CF-0084
Volume 1

Department of Energy
FY 2014 Congressional Budget Request

National Nuclear Security Administration

Office of the Administrator
Weapons Activities
Defense Nuclear Nonproliferation
Naval Reactors

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Office of the Administrator

Weapons Activities

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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)

(discretionary dollars in thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request	FY 2014 vs. FY 2012	
				$	%
Energy and Water Development and Related Agencies					
Energy Programs					
Energy Efficiency and Renewable Energy	1,780,548	1,820,713	2,775,700	+995,152	+55.9%
Electricity Delivery and Energy Reliability	136,178	139,954	169,015	+32,837	+24.1%
Nuclear Energy	760,466	770,075	735,460	-25,006	-3.3%
Race to the Top for Energy Efficiency and Grid Modernization	0	0	200,000	+200,000	N/A
Fossil Energy Programs					
Fossil Energy Research and Development	337,074	494,969	420,575	+83,501	+24.8%
Naval Petroleum and Oil Shale Reserves	14,909	15,000	20,000	+5,091	+34.1%
Strategic Petroleum Reserve	192,704	193,883	189,400	-3,304	-1.7%
Northeast Home Heating Oil Reserve	10,119	10,181	8,000	-2,119	-20.9%
Subtotal, Fossil Energy Programs	***554,806***	***714,033***	***637,975***	**+83,169**	***+15.0%***
Uranium Enrichment D&D Fund	472,180	475,070	554,823	+82,643	+17.5%
Energy Information Administration	105,000	105,643	117,000	+12,000	+11.4%
Non-Defense Environmental Cleanup	235,381	236,746	212,956	-22,425	-9.5%
Science	4,934,980	4,903,461	5,152,752	+217,772	+4.4%
Advanced Research Projects Agency - Energy	275,000	276,683	379,000	+104,000	+37.8%
Departmental Administration	126,000	126,772	118,392	-7,608	-6.0%
Inspector General	42,000	42,257	42,120	+120	+0.3%
Advanced Technology Vehicles Manufacturing Loan	6,000	6,037	6,000	0	N/A
Total, Energy Programs	***9,428,539***	***9,617,444***	***11,101,193***	**+1,672,654**	***+17.7%***
Atomic Energy Defense Activities					
National Nuclear Security Administration:					
Weapons Activities*	7,214,834	7,557,342	7,868,409	+311,067	+4.1%
Defense Nuclear Nonproliferation	2,300,950	2,409,930	2,140,142	-160,808	-7.0%
Naval Reactors	1,080,000	1,086,610	1,246,134	+166,134	+15.4%
Office of the Administrator	410,000	412,509	397,784	-12,216	-3.0%
Total, National Nuclear Security Administration	***11,005,784***	***11,466,391***	***11,652,469***	**+304,177**	***+2.8%***
Environmental and Other Defense Activities					
Defense Environmental Cleanup	5,002,847	5,033,568	5,316,909	+314,062	+6.3%
Other Defense Activities	823,364	828,402	749,080	-74,284	-9.0%
Total, Environmental & Other Defense Activities	***5,826,211***	***5,861,970***	***6,065,989***	**+239,778**	***+4.1%***
Total, Atomic Energy Defense Activities	***16,831,995***	***17,328,361***	***17,718,458***	**+543,955**	***+3.2%***
Power Marketing Administration					
Southeastern Power Administration	0	0	0	0	N/A
Southwestern Power Administration	11,892	11,965	11,892	0	N/A
Western Area Power Administration	95,978	96,556	95,930	-48	-0.1%
Falcon & Amistad Operating & Maintenance Fund	220	221	420	+200	+90.9%
Colorado River Basins	-23,000	-23,141	-23,000	0	N/A
Transmission Infrastructure Program	0	0	0	0	N/A
Total, Power Marketing Administrations	***85,090***	***85,601***	***85,242***	**+152**	***+0.2%***
Subtotal, Energy and Water Development and Related Agencies	***26,345,624***	***27,031,406***	***28,904,893***	**+2,216,761**	***+8.4%***
Uranium Enrichment D&D (UED&D) Fund Discretionary	0	0	-463,000	-463,000	N/A
Excess Fees and Recoveries, FERC	-25,534	-27,479	-26,236	-702	-2.7%
Total, Discretionary Funding by Appropriation	**26,320,090**	**27,003,927**	**28,415,657**	**+1,753,059**	**+6.7%**

Note: For Weapons Activities, the FY 2014 Request is compared against the FY 2013 Annualized Continuing Resolution level.

National Nuclear Security Administration

Overview

(dollars in thousands)

	FY 2012 Current	FY 2013 Annualized CR [a]	FY 2014 Request	FY 2014 vs. FY 2012 $	FY 2014 vs. FY 2012 %	FY 2014 vs. FY 2013 CR $	FY 2014 vs. FY 2013 CR %
NNSA							
Office of the Administrator	410,000	412,509	397,784	-12,216	-3.0%	-14,725	-3.6%
Weapons Activities	7,214,834	7,557,342	7,868,409	653,575	9.1%	311,067	4.1%
Defense Nuclear Nonproliferation	2,300,950	2,409,930	2,140,142	-160,808	-7.0%	-269,788	-11.2%
Naval Reactors	1,080,000	1,086,610	1,246,134	166,134	15.4%	159,524	14.7%
Total, NNSA	**11,005,784**	**11,466,391**	**11,652,469**	**646,685**	**5.9%**	**186,078**	**1.6%**

NNSA Future-Years Nuclear Security Program[b]

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
NNSA					
Office of the Administrator	397,784	407,134	416,706	426,506	436,540
Weapons Activities	7,868,409	8,549,698	8,785,395	8,932,772	9,292,929
Defense Nuclear Nonproliferation	2,140,142	1,856,416	1,942,758	2,007,664	1,997,171
Naval Reactors	1,246,134	1,377,100	1,464,600	1,645,463	1,595,416
Total, NNSA	**11,652,469**	**12,190,348**	**12,609,459**	**13,012,405**	**13,322,056**

[a] FY 2013 amounts shown reflect the P.L. 112-175 continuing resolution level annualized to a full year.

[b] The annual totals include an allocation to NNSA from the Department of Defense's five year budget plan. The amounts included are $1.2 billion in FY 2015, $1.4 billion in FY 2016, $1.6 billion in FY 2017, and $1.7 billion in FY 2018.

Appropriation Summary by Program[a]

(dollars in thousands)

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Office of the Administrator							
Program Direction	410,000	412,509	397,784	407,134	416,706	426,506	436,540
Total, Office of the Administrator	410,000	412,509	397,784	407,134	416,706	426,506	436,540
Weapons Activities Appropriation							
Defense Programs							
Directed Stockpile Work	1,862,113	2,111,274	2,428,516	2,539,661	2,586,324	2,732,374	3,045,477
Science Campaign	331,860	350,104	397,902	513,620	541,891	537,244	535,226
Engineering Campaign	141,803	150,571	149,911	165,117	166,897	160,493	171,974
Inertial Confinement Fusion Ignition and High Yield Campaign	474,484	465,000	401,043	367,841	364,152	353,941	345,627
Advanced Simulation and Computing Campaign	617,959	595,000	564,329	601,085	621,048	633,878	646,734
Readiness Campaign	128,406	130,095	197,780	270,997	254,643	225,831	224,619
Readiness in Technical Base and Facilities	2,013,742	2,216,828	0	0	0	0	0
Nuclear Programs	0	0	744,450	994,096	1,191,565	1,208,522	1,333,181
Secure Transportation Asset	243,116	219,361	219,190	226,103	234,117	245,465	248,236
Total, Defense Programs	5,813,483	6,238,233	5,103,121	5,678,520	5,960,637	6,097,748	6,551,074
Nuclear Counterterrorism Incident Response	221,369	247,552	0	0	0	0	0
Facilities and Infrastructure Recapitalization Program	96,120	0	0	0	0	0	0
Site Stewardship	82,181	90,001	1,706,007	1,745,423	1,729,197	1,775,745	1,705,634
Safeguards and Security							
Defense Nuclear Security	692,079	674,504	0	0	0	0	0
Cyber Security	131,370	137,022	0	0	0	0	0
Total, Safeguards and Security	823,449	811,526	0	0	0	0	0
Defense Nuclear Security	0	0	678,981	643,671	652,771	667,300	682,195
NNSA CIO Activities	0	0	148,441	179,805	151,661	154,404	157,045
National Security Applications	10,000	18,248	0	0	0	0	0
Legacy Contractor Pensions	168232	185,000	279,597	302,279	291,129	237,575	196,981
Use of Prior Year Balances	0	-13,219	-47,738	0	0	0	0
Rescission of Prior Year Balances	0	-19,999	0	0	0	0	0
Total, Weapons Activities	7,214,834	7,557,342	7,868,409	8,549,698	8,785,395	8,932,772	9,292,929
Defense Nuclear Nonproliferation							
Defense Nuclear Nonproliferation Programs							
Defense Nuclear Nonproliferation R&D (formerly Nonproliferation and Verification Research and Development)	347,905	456,317	388,838	391,000	405,375	430,903	442,042
Nonproliferation and International Security	153,594	154,534	141,675	147,422	149,768	156,801	167,618
International Material Protection & Cooperation (formerly International Nuclear Materials Protection and Cooperation)	575,789	573,415	369,625	369,165	382,392	379,332	310,718
Fissile Materials Disposition	685,386	721,784	502,557	221,695	228,904	245,408	239,487
Global Threat Reduction Initiative	503,453	501,048	424,487	379,329	428,696	457,928	505,620
Legacy Contractor Pensions	55,823	56,165	93,703	101,321	97,571	79,625	66,019
Total, Defense Nuclear Nonproliferation Programs	2,321,950	2,463,263	1,920,885	1,609,932	1,692,706	1,749,997	1,731,504
Nuclear Counterterrorism Incident Response Program	0	0	181,293	172,318	174,555	179,508	184,981
Counterterrorism & Counterproliferation Programs	0	0	74,666	74,166	75,497	78,159	80,686
Use of Prior Year Balances	0	-32,204	-36,702	0	0	0	0
Rescission for Contractor Pay Freeze	-21,000	-21,129	0	0	0	0	0
Total, Defense Nuclear Nonproliferation	2,300,950	2,409,930	2,140,142	1,856,416	1,942,758	2,007,664	1,997,171
Naval Reactors							
Naval Reactors	1,080,000	1,086,610	1,260,117	1,377,100	1,464,600	1,645,463	1,595,416
Use of Prior Year Balances	0	0	-13,983	0	0	0	0
Total, Naval Reactors	1,080,000	1,086,610	1,246,134	1,377,100	1,464,600	1,645,463	1,595,416
Total, NNSA	11,005,784	11,466,391	11,652,469	12,190,348	12,609,459	13,012,405	13,322,056

[a] The annual totals include an allocation to NNSA from the Department of Defense's five year budget plan. The amounts included are $1.2 billion in 2015, $1.4 billion in FY 2016, $1.6 billion in FY 2017, and $1.7 billion in FY 2018.

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
National Defense Authorization Act for FY 2013 (P.L. 112-239)
The Continuing Appropriations Resolution, 2013 (P.L. 112-175)

The President's FY 2014 Request represents an increase in funding relative to the FY 2012 enacted and FY 2013 annualized CR 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.

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 Strategic Arms Reduction Treaty (New START) 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 (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.

NNSA funds activities that contribute to the President's 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 2014 President's Budget include: Directed Stockpile Work (DSW), Campaigns, Nuclear Programs, which includes the Uranium Capabilities Replacement Project (formerly known as the Uranium Processing Facility or UPF), and Secure Transportation Asset.

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 budget request that is focused on securing the most vulnerable nuclear material by the December 2013 date for completion and on reducing the role of U.S. nuclear weapons in U.S. national security strategy.

In order to 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 2014 Request will build upon the FY 2012 accomplishments and those planned in FY 2013.

- Under the terms of the 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 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, a life extension study for the W78/88-1, and the ALT 370 for the W88.
- The request funds critical infrastructure modernization efforts, including the Uranium Capabilities Replacement Project, 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 reaffirms the President's announcement in Prague of an international effort to secure vulnerable nuclear material worldwide. With this request, NNSA will ensure its contribution to 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 (kgs) 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 2012, NNSA's Global Threat Reduction Initiative (GTRI) removed 3,462 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 2013, GTRI will have converted or verified as shutdown 88 research reactors, removed 3,835 kilograms of vulnerable nuclear material, and secured an estimated 1,603 buildings containing high priority nuclear or radiological materials.

- As of the end of FY 2012, NNSA's International Material Protection and Cooperation (IMPC) program had secured 218 buildings containing weapons-usable nuclear material to reduce the threat of nuclear terrorism. Through FY 2013 IMPC will have completed nuclear security upgrades at 229 buildings containing weapons-usable nuclear material in the FSU.

The budget continues to robustly fund the Naval Reactors (NR) program and build upon prior efforts. Among these accomplishments is continued support for the VIRGINIA-Class submarine construction including:

- Commissioning of the fifth Block II VIRGINIA-Class submarine, USS MISSISSIPPI (SSN 782), in June 2012 in Pascagoula, Mississippi.
- USS MINNESOTA (SSN 783), the sixth Block II VIRGINIA-Class submarine, keel laid down in 2011 in Newport News, Virginia, on schedule for delivery in mid-2013.
- USS NORTH DAKOTA (SSN 784), the first Block III VIRGINIA-Class submarine, keel laid down in May 2011 in North Kingstown, Rhode Island.

NR is working towards achieving the following key metrics for FY 2014

- Cumulative completion of 99 percent of the GERALD R. FORD-Class next-generation aircraft carrier reaction plant design.
- Cumulative completion of 22 percent of the OHIO-Class Ballistic Missile Submarine Replacement (OHIO Replacement) reactor plant design based on actions taken in FY 2012 to support a two year delay to construction starting from FY 2019 to FY 2021.

Alignment to Strategic Plan

The NNSA FY 2014 Request is aligned with the Department's May 2011 Strategic Plan. 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.

Explanation of Changes

Weapons Activities (WA) Appropriation

The FY 2014 Request provides an increase from the FY 2013 annualized Continuing Resolution (CR) funding level. This level of funding is needed to support the President's nuclear security objectives, including extending the life of the 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. The Department's Directed Stockpile Work (DSW) increase provides for continued efforts to extend the life of the stockpile, including funding the W76 LEP, B61 LEP, the W88 Alt 370 Arming, Fuzing, and Firing (AF&F) activities to support a FY 2019 First Production Unit, and the W78/88-1 Life Extension Study. The increase provides for Neutron Generator replacement activities, surveillance and assessment requirements and allows for investment in new equipment (acquire/install) for Plutonium Sustainment to increase capacity to 30 pits per year. The Department's Science Campaign increase reflects requirements to provide LEP options utilizing pit re-use, and for developing capabilities for advanced diagnostics and experimental capabilities allowing for assessment of Insensitive High Explosive and other safety improvements in future LEPs. The Inertial Confinement Fusion program decrease reduces the level of facility operations at the National Ignition Facility because initial ignition efforts have shown physics unknowns and complexities that require a shift in emphasis from ignition experiments to those focusing on the unsuspected scientific complexities. Also the ICF Campaign will begin directly charging external users for the use of the facility. The Advanced Simulation and Computing decrease also reflects anticipated management efficiency and workforce restructuring reductions offset by the funding restoration for the Predictive Sciences Academic Alliances Program (PSAAP), expanded modeling to evaluate pit re-use options, and expanded integrated code development to efficiently use evolving computer architectures. The Readiness Campaign increase is mainly to restore capabilities previously funded in the Advanced Design and Production Technologies, High Explosive and Weapons Operations, and Stockpile Readiness subprograms, plus increased support for the B61 LEP, W78/88-1 Life Extension Study, W78/88-1 LEP, and W88 Alt 370 first user insertions. The Tritium Readiness increase is driven by unobligated reactor fuel and other costs at Tennessee Valley Authority and capital projects for control system updates at the Tritium Extraction Facility. Secure Transportation Asset's funding is essentially flat, with anticipated management efficiency and workforce

restructuring reductions offset by increases associated with Mobile Guardian Trailer development, stabilized Replacement of Escort Vehicles, and upgrades required for end of serviceable life components in the command and control communications systems.

The increase in Defense Nuclear Security (DNS) is attributable to shifting the Y-12 protective force contract to the Management and Operations contractor, and planned lifecycle replacement and upgrades of technical surveillance countermeasures equipment across the enterprise. The NNSA CIO Activities increase reflects the consolidation of the Cyber Security and information technology (IT) programs into a new single Government Performance Results Act (GPRA) unit.

The Nuclear Counterterrorism Incident Response Program (NCTIR) and activities funded by National Security Applications (NSA) have been moved to the Defense Nuclear Nonproliferation appropriation.

NNSA recently created the Office of Infrastructure and Operations (NA-00), which moves NNSA towards a tenant-landlord site model in which NA-00 is the landlord and the program offices are now tenants. As a result of this reorganization, NNSA is proposing to eliminate the Readiness in Technical Base and Facilities (RTBF) GPRA unit and split these activities between the existing Site Stewardship GPRA unit, and a new GPRA unit titled "Nuclear Programs." The Nuclear Programs GPRA unit will provide for: sufficient quantities of program nuclear materials for immediate use in production and reserve use in strategic inventories; recycle, recovery, and storage of nuclear and select non-nuclear program materials; development and execution of Special Nuclear Material (SNM) strategies for Defense Programs operations; sustainment of "program skills" through personnel training and development; development of SNM processing functionality; and the management and implementation of capability investments and capital construction projects that support the Defense Programs mission. Material Recycle and Recovery, Storage, most Program Readiness activities, and Construction previously funded in RTBF will now be funded in Nuclear Programs. Operations of Facilities, Containers, and the remaining Program Readiness activities will be funded out of Site Stewardship under the new Enterprise Infrastructure subprogram. Nuclear Programs will also fund new activities (Plutonium Metal Processing and Capabilities Based Investments), as will Site Stewardship (Site Support, Sustainment, Facilities Disposition, some new construction, the Minority Serving Institution Partnership Program). A more detailed table that tracks the movement of RTBF funds can be found in the RTBF program justification.

The increase in Legacy Contractor Pensions is due to changes in the demographic and mortality assumptions included in the actuarial assessments.

Defense Nuclear Nonproliferation (DNN) Appropriation

DNN is responsible for implementing key U.S. Government nuclear security, nonproliferation, and arms control activities. It draws on its core competencies which are supported by DNN's capacity for international outreach and engagement and its project management, implementation, and technical/policy expertise.

By drawing together these three NNSA programs, we strengthen the existing synergies and cooperation among these offices. In doing so, we provide priority and emphasis to NNSA programs that are responsible for implementing the President's nuclear security priorities and the 2010 Nuclear Posture Review (NPR) which "outlines the Administration's approach to promoting the President's agenda for reducing nuclear dangers and pursuing the goal of a world without nuclear weapons, while simultaneously advancing broader U.S. security interests." Based on the fundamental and continuing changes in both the domestic and the international security environments, the NPR report identifies preventing nuclear proliferation and nuclear terrorism as the highest of five key areas of focus. This change in budget structure presents with greater clarity the total funding and level of activity undertaken by NNSA in this increasingly important area. At the same time, this realignment ensures that the Weapons Activities appropriation is now entirely focused on the U.S. nuclear stockpile and related activities.

The request in FY 2014, including the addition of the NCTIR Program and Counterterrorism and Counterproliferation (CTCP) Programs, is $2.1 billion. Excluding the addition of NCTIR and CTCP, funding would be $1.9 billion. This reflects a decrease from FY 2012 levels primarily driven by decisions in the Fissile Materials Disposition (FMD) program and the planned completion of the domestic uranium enrichment research, development, and demonstration project.

This budget supports the President's commitment to lead an international effort to secure vulnerable nuclear materials around the world by the end of 2013. The GTRI funding levels are reduced consistent with the completion of the four-year plan in December 2013. Funding for the DNN R&D program increases to permit production of nuclear detection satellite payloads at the

rate in accordance with the delivery schedule negotiated with the USAF and to assume sensor-payload integration costs formerly paid by the Department of Defense. The increase also allows NNSA to advance the R&D goals to reduce nuclear danger through nuclear nonproliferation, test monitoring, arms control and threat reduction and through national test bed field experiments and research. The NIS decrease, offset by smaller increases for statutorily mandated activities, mainly reflects a reduction in activity for HEU Transparency as the program nears completion in FY 2015, coupled with a reduction in the pace of transition to the transformed Global Security through Science Partnerships program. The FY 2014 request for IMPC decreases funding for MPC&A activities as the program shifts to a sustainability phase with the Russian Federation and continues to focus on expanding activities with other countries. The FMD program decrease slows down construction of the Mixed Oxide (MOX) Fuel Fabrication Facility (MFFF) project and associated supporting activities while assessing alternative plutonium disposition strategies. In FY 2014, the NCTIR program will invest in leverage at a distance capability for Nuclear Emergency Support Team (NEST), maintain training of the Consequence Management Home Team, sustain stabilization cities, complete improvements to U12P-tunnel, address and sustain emergency management requirements, maintain the Emergency Communications Network, and continue supporting international partners. CTCP, a proposed new GPRA unit, will combine the Nuclear Counterterrorism subprogram (formerly within NCTIR) with the activities formerly funded in National Security Applications (NSA) Program. This program conducts research and development to understand the full range of possible terrorist nuclear devices, and to inform operational teams, intelligence analysts, and government officials at all levels of potential threats and possible countermeasures. CTCP funding will support accelerated experimental activities to improve and validate our ability to predict the behavior of non-stockpile threat problems. It will also support larger full-scale experiments addressing intelligence, policy, and operational needs.

Naval Reactors (NR) Appropriation

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.

NR's request supports the core objective of ensuring the safe and reliable operation of the Nation's nuclear fleet and includes continued support of OHIO-class replacement reactor design, Land-based Prototype Refueling Overhaul, and the Spent Fuel Handling Recapitalization Project.

Specific goals in FY 2014 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 completion of the Spent Fuel Handling Recapitalization Project in 2021 and 2022.

Office of the Administrator (OA) Appropriation

The mission of the OA account is to fund 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, and oversee the operation of the NNSA.

This account pays for all NNSA Federal employees and associated administrative expenses, except for those working in Naval Reactors and the Office of Secure Transportation.

The FY 2014 Request provides support for 1,817 full time equivalents for NNSA Federal staff. The budget reflects the transfer of $3.584 million from DNN into the OA account to consolidate two student programs, the Office of the Administrator's Future Leaders Program and the Defense Nuclear Nonproliferation's Graduate Fellowship Program, into one NNSA Graduate Program. In addition, the request has been significantly downsized relative to prior FYNSPs consistent with NNSA's ongoing efforts to streamline operations, provide efficient and effective Federal oversight to our programs, and consolidate relevant missions within the NNSA Office of the Chief Information Officer in Weapons Activities.

Goal Program Alignment Summary

	Reduce Nuclear Dangers	Manage the Nuclear Weapons Stockpile and Advance Naval Nuclear Propulsion	Modernize the NNSA Infrastructure	Strengthen the Science, Technology, and Engineering Base	Drive an Integrated and Effective Enterprise
Office of the Administrator					**3.4%**
Total, Office of the Administrator	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**3.4%**
Weapons Activities					
Security - DNS	5.8%				
Stockpile Support - DSW, Readiness Campaign		22.5%			
Infrastructure and Enterprise Support - Nuclear Programs, STA, Site Stewardship, WA Legacy Pensions			25.3%		
Campaigns - Science, Engineering, ICF and ASC				13.0%	
NNSA CIO, Cyber Security					1.3%
Total, Weapons Activities	**5.8%**	**22.5%**	**25.3%**	**13.0%**	**1.3%**
Defense Nuclear Nonproliferation					
Material and Security and Protection - IMPC, GTRI	6.8%				
Fissile Materials Disposition - FMD	4.3%				
Nonproliferation Regime and Enterprise Support - NIS; DNN Legacy Pensions	2.0%				
Closing Nonproliferation Technology Gaps - R&D	3.3%				
Nuclear Counterterrorism - NCTIR, CTCP	2.2%				
Total, Defense Nuclear Nonproliferation	**18.6%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
Naval Reactors		10.7%			
Total, Naval Reactors	**0.0%**	**10.7%**	**0.0%**	**0.0%**	**0.0%**
Total, NNSA	**24.4%**	**33.2%**	**25.3%**	**13.0%**	**4.7%**

Indirect Costs and Other Items of Interest

General Plant Projects (GPP)

Pursuant to Section 3121 of the Ike Skelton National Defense Authorization Act for FY 2011 (P.L. 111-383), notification is being provided for general plant projects with a total estimated cost of more than $5 million planned for execution in FY 2013 and FY 2014.

FY 2013 General Plant Projects

Weapons Activities – Sandia National Laboratories, Albuquerque and California

Project Title	Program	TEC	Project Description	FY 2013 Funding	FY 2014 Funding	Construction Design Estimate
Bldg. 730 IGPP Building #2	Indirect	$10,000,000	Design/Construct Building 730 on the vacant site on the corner of 9th and K Streets, north of building 894. The building will house various organizations that support the Sandia National Security Mission. Building will be multi-story, will meet mid-term space needs (3-5 years) and will be designed to meet LEED Gold Certification.	$4,000,000	$6,000,000	$575,000
Bldg. C912 (Sandia/CA)	Indirect	$6,400,000	Renovate the north wing second floor of building 912 to create an open and collaborative workspace suitable for classified common need to know project work. In addition major mechanical refurbishment is to occur for the north side of the building.	$1,150,000	$5,250,000	$600,000

Project Title	Program	TEC	Project Description	FY 2013 Funding	FY 2014 Funding	Construction Design Estimate
Bldg. 6588 - Annular Core Research Reactor (ACRR) Refurbish-ments	RTBF	$8,500,000	Refurbish and renovate facility to provide restored building systems, sustained support for mission deliverables, meet life safety codes, improve physical security, increase space utilization & functionality, and reduce energy consumption.	$550,000	$5,000,000[a]	$550,000
Bldg. 862 - Standby Power Plant Upgrades	RTBF	$8,500,000	Replace and upgrade SNL/NM's standby generator system of four 600kW, 2400V diesel generators with three 1200kW, 12.47kV natural gas generators and associated equipment.	$500,000	$5,000,000[b]	$500,000
Bldg. 905 - Explosive Component Facility Additions and Renovations	RTBF	$9,500,000	Design and construct approximately 16,600 gross square feet (GSF) of additional space and renovate another 6,135 GSF to support expanding mission requirements.	$575,000	$5,000,000[b]	$575,000

[a] Project may extend into FY 2015 depending on Direct (RTBF/CBFI) resources.

Weapons Activities – Los Alamos National Laboratory

Project Title	Program	TEC	Project Description	FY 2013 Funding	FY 2014 Funding	Construction Design Estimate
Outdoor Range Upgrades	DNS	$5,000,000	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.	$700,000	$4,300,000	$500,000
TA 59-001 Remodel	Indirect	$8,250,000	Technical area 59, Building 1 complete remodel project - remediation and clean up to refurbish old building for new purpose. Demolition of physical infrastructure and infrastructure systems - removal of ceilings, incinerators, carpeting, asbestos, and abandoneds electrical systems. Architectural, electrical, mechanical, and civil interior and exterior work for addition of ADA, office space, HVAC, electrical panel, etc.	$6,168,000	$1,382,000	$575,000

Project Title	Program	TEC	Project Description	FY 2013 Funding	FY 2014 Funding	Construction Design Estimate
TA 48-107 Revitalization	DoD & Institut-ional	$6,958,000	Technical Area 48, Building 107 Revitalization Project - upgrades such as seismic and infrastructure systems (DOD funding) for new programmatic equipment installation (institutional funding).	$5,973,000	985,000	$476,000
TA 48-45 Addition	Indirect	$9,000,000	Technical Area 48, Building 45 Expansion Project - additional infrastructure for programmatic equipment and improved capabilities.	$7,627,000	$1,373,000	$550,000

Weapons Activities – Pantex Plant

Project Title	Program	TEC	Project Description	FY 2013 Funding	FY 2014 Funding	Construction Design Estimate
Vacuum Chamber Capability	RTBF	$9,000,000	Upgrade vacuum chamber systems to replace components no longer supported by the vendor. Required to support weapon production schedules.	$575,000	$8,425,000	$575,000

Weapons Activities – Y-12 National Security Complex

Project Title	Program	TEC	Project Description	FY 2013 Funding	FY 2014 Funding	Construction Design Estimate
9995 HVAC Replacement Project	RTBF	$8,000,000	Replacement of the HVAC units and controls servicing Building 9995 with functionally similar units. The function of Units 1000 and 2000 (the units) is to supply cooling system air in ducted sections of the building Chemistry Labs and the Enriched Uranium Sampling Operations areas. The units are located in an elevated position on the east end of the building, and are placed parallel to existing units 3000 and 4000, that were replaced in 2006 and 2007.	$2,500,000	$5,500,000	$500,000

FY 2014 General Plant Projects

Weapons Activities – Sandia National Laboratory, Albuquerque and California

Project Title	Program	TEC	Project Description	FY 2014 Funding	FY 2015 Funding	Construction Design Estimate
Building 827 Primary Standards Lab (PSL) Recapitalization	Site Steward-ship	$6,500,000	Perform recapitalization projects to obsolete equipment and building systems to reduce the risk to the complex and enable more efficient operations of the Primary Standards Laboratory.	$500,000	$3,000,000	$500,000
Building 870 Refurbishments	Site Steward-ship	$6,500,000	Perform recapitalization of Neutron Generator manufacturing facilities with a focus on updating Infrastructure and equipment to enable more reliable and efficient production operations.	$500,000	$3,000,000	$575,000
Building 878 Refurbishments	Site Steward-ship	$8,500,000	Perform recapitalization projects to address risk in both equipment and building systems in Active Ceramics, and other NW critical materials research, design and characterization.	$500,000	$4,000,000	$500,000

Weapons Activities – Los Alamos National Laboratory

Project Title	Program	TEC	Project Description	FY 2014 Funding	FY 2015 Funding	Construction Design Estimate
TA-59-3 Life Extension	Site Steward-ship	$5,000,000	Upgrade Electrical, HVAC, Plumbing, Interior and Exterior, etc.	$500,000	$2,000,000	$550,000

Weapons Activities – Pantex Plant

Project Title	Program	TEC	Project Description	FY 2014 Funding	FY 2015 Funding	Construction Design Estimate
Acceptance Required Container Storage Area (Container Logistics Depot)	Site Steward-ship	$10,000,000	Construction of a new container support facility to consolidate operations and improve container planning, reprocessing, and inventory management.	$10,000,000	$0	$500,000

Weapons Activities – Y-12 National Security Complex

Project Title	Program	TEC	Project Description	FY 2014 Funding	FY 2015 Funding	Construction Design Estimate
Modernize Cooling Tower 9409-22E	Site Steward-ship	$9,700,000	Replace the existing cooling tower system with a modern cooling tower system and high-efficiency pumps.	$2,337,000	$7,363,000	$350,000
Modernize 161kV Lightning Protection System	Site Steward-ship	$6,500,000	Replace up to 20 miles of deteriorated static wire and the 161 kV lightning arresters located at the 161 kV transformers. Upgrading the lightning protection system for the all the 161 kV transmission lines will increase the system surge withstand rating through improved arrester technology, continuous arrester performance monitoring, and remote wireless display of performance data. The performance health of the arresters will be provided without intrusive outages and maintenance testing.	$500,000	$6,500,000	$350,000
Modernize 161V Regulating Transformer	Site Steward-ship	$9,200,000	Replacing Regulating Transformer #1 with a modern regulating transformer to facilitate more flexible power operations and ensure a consistently regulated 161-kV power supply required to safely operate EU facilities such as 9212 and 9204-2E. This capital betterment extends the life of a key site-wide utility distribution system.	$6,200,000	$3,000,000	$500,000

Naval Reactors – Knolls Laboratory & Kesselring Site

Project Title	Program	TEC	Project Description	FY 2014 Funding	FY 2015 Funding	Construction Design Estimate
Containerized Data Center	Naval Reactors	$9,050,000	This project will procure and install a containerized data center (CDC) to house the high performance computing systems at KAPL and will include the design and construction of a dedicated electric load center for the CDC. The CDC is an economical alternative to refurbishing the existing space or building a new facility because of the lower overall cost and the efficiencies gained from condensing the physical space required for computing systems. The CDC's innovative computer cooling capability makes these efficiencies possible.	$250,000	$8,800,000	$250,000

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.

General Plant Projects

(Dollars in Thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
General Plant Projects			
Kansas City Plant	3,000	3,000	16,500
Sandia National Laboratories	6,251	43,325	47,375
Los Alamos National Laboratory	0	20,468	8,790
Lawrence Livermore National Laboratory	3,035	11,982	0
Pantex Plant	9,690	9,261	18,425
Savannah River Site	3,891	5,920	17,255
Y-12 National Security Complex	12,381	27,699	48,879
Nevada National Security Site	23,729	12,400	13,500
Bettis Laboratory & Naval Reactors Laboratory	1,800	1,811	14,925
Knolls Laboratory & Kesselring Site	8,158	8,208	19,075
Total Site, GPP	**71,935**	**144,074**	**204,724**

Out-Year General Plant Projects

(Dollars in Thousands)

	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
General Plant Projects				
Kansas City Plant	17,000	20,500	13,000	13,000
Sandia National Laboratories	60,750	47,900	46,360	27,600
Los Alamos National Laboratory	6,800	0	0	0
Lawrence Livermore National Laboratory	0	0	0	
Pantex Plant	0	12,000	0	0
Savannah River Site	24,728	27,765	16,018	11,618
Y-12 National Security Complex	32,600	8,575	1,000	7,000
Nevada National Security Site	14,300	300	300	300
Bettis Laboratory & Naval Reactors Facility	18,130	10,620	5,640	12,490
Knolls Laboratory & Kesselring Site	15,170	28,680	29,860	27,610
Total Site, GPP	**189,478**	**156,340**	**112,178**	**99,618**

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 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Institutional General Plant Projects			
Kansas City Plant	0	0	0
Sandia National Laboratories	7,400	13,500	17,500
Los Alamos National Laboratory	0	19,768	3,740
Lawrence Livermore National Laboratory	22,600	16,978	9,456
Pantex Plant	0	0	0
Savannah River Site	0	0	0
Y-12 National Security Complex	0	0	0
Nevada National Security Site	0	0	0
Bettis Laboratory & Naval Reactors Laboratory	0	0	0
Knolls Laboratory & Kesselring Site	0	0	0
Total Site, Institutional General Plant Projects	**30,000**	**50,246**	**30,696**

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 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
Institutional General Plant Projects				
Kansas City Plant	0	0	0	0
Sandia National Laboratories	13,000	9,500	18,000	13,000
Los Alamos National Laboratory	0	0	0	0
Lawrence Livermore National Laboratory	8,668	8,884	9,106	9,334
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 Laboratory & Naval Reactors Laboratory	0	0	0	0
Knolls Laboratory & Kesselring Site	0	0	0	0
Total Site, Institutional General Plant Projects	**21,668**	**18,384**	**27,106**	**22,334**

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.

Costs for Direct-Funded Maintenance and Repair

(Dollars in Thousands)

	FY 2012 Actual Cost	FY 2013 Annualized CR	FY 2014 Planned Cost
Direct-Funded Maintenance and Repair			
Kansas City Plant	25,232	35,567	35,158
Sandia National Laboratories	4,353	3,901	3,000
Los Alamos National Laboratory	64,979	74,201	76,001
Lawrence Livermore National Laboratory	9,131	13,232	12,556
Pantex Plant	69,092	108,486	97,745
Savannah River Site	24,161	19,337	27,578
Y-12 National Security Complex	35,541	37,090	42,574
Nevada National Security Site	16,875	20,356	17,686
Bettis Laboratory & Naval Reactors Laboratory	25,011	15,350	16,729
Knolls Laboratory & Kesselring Site	6,572	5,821	5,468
Total, Direct-Funded Maintenance and Repair	**280,947**	**333,341**	**334,495**

Costs for Out-Year Direct-Funded Maintenance and Repair

(Dollars in Thousands)

	FY 2015 Projected Cost	FY 2016 Projected Cost	FY 2017 Projected Cost	FY 2018 Projected Cost
Direct-Funded Maintenance and Repair				
Kansas City Plant	20,465	16,684	17,268	17,872
Sandia National Laboratories	10,500	2,300	6,000	13,700
Los Alamos National Laboratory	77,822	79,693	81,616	83,593
Lawrence Livermore National Laboratory	12,900	13,250	13,500	13,850
Pantex Plant	99,200	88,684	102,198	103,742
Savannah River Site	28,920	31,312	32,090	37,156
Y-12 National Security Complex	43,817	44,622	46,491	48,127
Nevada National Security Site	50,022	20,364	20,713	21,069
Bettis Laboratory & Naval Reactors Laboratory	17,664	25,024	20,582	27,565
Knolls Laboratory & Kesselring Site	5,996	5,972	6,623	6,677
Total, Direct-Funded Maintenance and Repair	**367,306**	**327,905**	**347,081**	**373,351**

Costs for Indirect-Funded Maintenance and Repair

(Dollars in Thousands)

	FY 2012 Actual Cost	FY 2013 Annualized CR	FY 2014 Planned Cost
Indirect-Funded Maintenance and Repair			
Kansas City Plant	0	0	0
Sandia National Laboratories	106,263	70,224	58,750
Los Alamos National Laboratory	85,391	84,654	84,697
Lawrence Livermore National Laboratory	102,965	112,150	113,600
Pantex Plant	0	0	0
Savannah River Site	2,558	3,001	2,643
Y-12 National Security Complex	31,619	28,999	30,159
Nevada National Security Site	55,753	54,185	55,399
Bettis Laboratory & NavalReactor Laboratory	7,121	7,217	7,429
Knolls Laboratory & Kesselring Site	13,981	12,800	12,453
Total, Indirect-Funded Maintenance and Repair	**405,651**	**373,230**	**365,130**

Costs for Out-Year Indirect-Funded Maintenance and Repair

(Dollars in Thousands)

	FY 2015 Projected Cost	FY 2016 Projected Cost	FY 2017 Projected Cost	FY 2018 Projected Cost
Indirect-Funded Maintenance and Repair				
Kansas City Plant	0	0	0	0
Sandia National Laboratories	62,050	68,520	61,870	41,584
Los Alamos National Laboratory	84,697	84,697	84,697	84,697
Lawrence Livermore National Laboratory	117,300	120,150	122,500	126,350
Pantex Plant	0	0	0	0
Savannah River Site	2,654	2,990	2,756	2,918
Y-12 National Security Complex	31,365	32,620	33,925	35,282
Nevada National Security Site	56,433	57,486	58,559	59,653
Bettis Laboratory & Naval Reactors Laboratory	7,775	7,533	7,800	8,124
Knolls Laboratory & Kesselring Site	14,586	13,666	13,528	12,193
Total, Indirect-Funded Maintenance and Repair	**376,860**	**387,662**	**385,635**	**370,801**

Report on FY 2012 Expenditures for Maintenance and Repair

This report responds to legislative language set forth in Conference Report (H.R. Conf. Rep. No. 108-10) accompanying the Consolidated Appropriations Resolution, 2003 (Public Law 108-7) (pages 886-887), which requests the Department of Energy provide an annual year-end report on maintenance expenditures to the Committees on Appropriations. This report compares the actual maintenance expenditures in FY 2012 to the amount planned for FY 2012, including direct changes.

Total Costs for Maintenance and Repair

(Dollars in Thousands)

	FY 2012 Actual Cost	FY 2012 Planned Cost
Maintenance and Repair		
Kansas City Plant	25,232	28,385
Sandia National Laboratories	110,617	116,621
Los Alamos National Laboratory	150,370	138,672
Lawrence Livermore National Laboratory	112,096	97,596
Pantex Plant	69,092	74,203
Savannah River Site	26,719	24,800
Y-12 National Security Complex	67,160	59,498
Nevada National Security Site	72,628	73,245
Bettis Laboratory & Naval Reactor Laboratory	32,132	24,693
Knolls Laboratory & Kesselring Site	20,554	26,228
Total, Maintenance and Repair	**686,600**	**663,941**

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

(Dollars in Thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Defense Nuclear Nonproliferation			
SBIR/STTR [Non-Add]	[6,245]	[10,302]	[7,040]
Total, Defense Nuclear Nonproliferation SBIR/STTR [Non-Add]	[6,245]	[11,727]	[7,040]

Site Estimates

(Dollars in Thousands)

Site	FY 2012 Current	FY 2013 Annualized CR	FY 2014 OA	FY 2014 WA	FY 2014 NN	FY 2014 NR	FY 2014 Total
Ames Laboratory	300	0	0	0	0	0	0
Argonne National Laboratory	90,408	85,645	0	0	73,625	0	73,625
Bettis Atomic Power Laboratory	456,100	458,891	0	0	0	576,246	576,246
Brookhaven National Laboratory	45,361	49,221	0	0	43,287	0	43,287
Chicago Operations Office	2,205	0	0	0	0	0	0
General Atomics	0	0	0	19,949	0	0	19,949
Headquarters	732,711	1,134,134	283,255	684,732	199,623	28,952	1,196,562
Idaho National Laboratory	239,640	242,022	0	4,200	114,483	87,273	205,956
Idaho Operations Office	0	1,021	0	0	936	0	936
Kansas City Field Office	7,109	7,109	7,357	0	0	0	7,357
Kansas City Plant	500,008	535,150	0	561,904	17,078	0	578,982
Knolls Atomic Power Laboratory	478,178	481,105	0	0	0	548,600	548,600
Lawrence Berkeley National Laboratory	7,041	6,575	0	0	6,705	0	6,705
Lawrence Livermore National Laboratory	1,213,710	1,088,124	0	951,199	133,795	0	1,084,994
Livermore Field Office	19,247	19,247	18,729	0	0	0	18,729
Los Alamos Field Office	18,069	17,919	17,784	0	0	0	17,784
Los Alamos National Laboratory	1,668,428	1,489,525	0	1,415,994	217,512	0	1,633,506
National Energy Technology Laboratory	2,859	4,010	0	0	0	0	0
Naval Reactors Laboratory Field Office	16,895	18,100	0	0	0	19,046	19,046
Naval Research Laboratory	0	5,000	0	4,451	0	0	4,451
Nevada Field Office	99,470	93,508	19,153	74,118	0	0	93,271
Nevada National Security Site	311,308	323,566	0	243,858	109,890	0	353,748
New Brunswick Laboratory	906	1,061	0	0	976	0	976
NNSA ABQ Complex	573,937	547,914	0	429,331	173,667	0	602,998
NNSA Production Office	0	0	27,266	0	0	0	27,266
NNSA Production Office - Pantex Plant	0	0	0	601,588	2,551	0	604,139
NNSA Production Office - Y-12 NSC	0	0	0	1,148,540	45,742	0	1,194,282
Oak Ridge Institute for Science and Engineering	20,140	19,945	0	0	16,808	0	16,808
Oak Ridge National Laboratory	206,721	198,857	0	837	137,764	0	138,601
Oak Ridge Operations Office	0	100,079	0	0	73	0	73
Office of Science and Technical Information	528	251	0	235	17	0	252
Pacific Northwest National Laboratory	248,674	243,585	0	0	236,164	0	236,164
Pantex Field Office	9,352	9,352	0	0	0	0	0
Pantex Plant	631,057	590,558	0	0	0	0	0
Richland Operations Office	1,704	1,446	0	0	1,446	0	1,446
Sandia Field Office	22,965	22,965	18,762	0	0	0	18,762
Sandia National Laboratories	1,473,668	1,648,948	0	1,465,789	204,353	0	1,670,142
Savannah River Field Office	5,116	6,224	5,478	0	0	0	5,478
Savannah River Operations Office	523,989	480,645	0	0	366,985	0	366,985
Savannah River Site	296,991	389,872	0	249,422	73,124	0	322,546
University of Rochester/LLE	61,561	60,250	0	60,000	0	0	60,000
Y-12 Field Office	12,713	11,013	0	0	240	0	240
Y-12 National Security Complex	1,027,715	1,160,105	0	0	0	0	0
Grand Total	11,026,784	11,552,942	397,784	7,916,147	2,176,844	1,260,117	11,750,892

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, $397,784,000, to remain available until September 30, 2015.

Explanation of Change

The FY 2014 Request provides support for 1,817 full time equivalents for NNSA federal staff. The budget proposes the transfer of $3,584,000 from Defense Nuclear Nonproliferation to the Office of the Administrator in support of the consolidation of two student programs, the Office of the Administrator's Future Leaders Program and the Defense Nuclear Nonproliferation's Graduate Fellowship Program, into one NNSA Graduate Program. In addition, the request has been significantly downsized relative to prior Future Years Nuclear Security Programs (FYNSPs) consistent with NNSA's ongoing efforts to streamline operations and provide efficient and effective Federal oversight to our programs.

Office of the Administrator

Overview
Appropriation Summary by Program

(Dollars in Thousands)

	FY 2012 Current	FY 2013 Annualized CR [a]	FY 2014 Request
Office of the Administrator			
NNSA Program Direction			
Salaries and Benefits	296,932	299,441	298,468
Travel	15,231	15,231	14,674
Support Services	20,439	20,439	16,597
Other Related Expenses	77,398	77,398	68,045
Total, Office of the Administrator	**410,000**	**412,509**	**397,784**

Outyear Appropriation Summary by Program

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
Office of the Administrator					
NNSA Program Direction					
Salaries and Benefits	298,468	305,931	313,580	321,421	329,458
Travel	14,674	14,953	15,237	15,526	15,821
Support Services	16,597	16,912	17,234	17,561	17,895
Other Related Expenses	68,045	69,338	70,655	71,998	73,366
Total, Office of the Administrator	**397,784**	**407,134**	**416,706**	**426,506**	**436,540**

[a] FY 2013 amounts shown reflect the P.L. 112-175 continuing resolution level annualized to a full year.

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
National Defense Authorization Act for FY 2013 (P.L. 112-239)
The Continuing Appropriations Resolution, 2013 (P.L. 112-175)

Overview

The mission of the Office of the Administrator account is to fund a well-managed, inclusive, responsive, and accountable organization through the strategic management of human capital and acquisitions and integration of budget and performance data. This account pays for all National Nuclear Security Administration (NNSA) Federal employees and associated administrative expenses, except for those working in Naval Reactors and the Office of Secure Transportation.

The OA account provides the Federal personnel and resources necessary to plan, manage, and oversee the operation of the NNSA. The Nation benefits from having a highly educated and skilled cadre of Federal managers overseeing the operations of the national security missions related to the safety and reliability of the nuclear weapons stockpile and performing many specialized duties including Emergency Response teams, nuclear nonproliferation coordination, safeguards and security oversight, strategic coordination of counterterrorism and counter-proliferation initiatives, and mission support to include: procurement, financial management, human capital management, legal services and safety and health.

Program Accomplishments and Milestones

The Office of the Administrator account is a pillar supporting the NNSA's ability to carry out its missions by providing the Federal personnel and resources necessary to plan, manage, and oversee the operation of the programs designed to meet NNSA's objectives and milestones.

The NNSA continues to identify management efficiencies, particularly in travel and support services, to provide a lean and efficient organization and to support the President's Executive Order "*Promoting Efficient Spending*". These administrative savings are reflected in the FY 2012-FY 2018 funding levels. Support expenses have been significantly reduced from the FY 2012 planned levels.

As responsible stewards of the taxpayer's money, NNSA has taken steps to reduce spending on Federal program direction. However, many of these actions were one-time efforts that cannot be repeated in FY 2014 and beyond without threatening both the efficiencies NNSA has realized and the necessary and prudent oversight of federal funds. Some actions taken include: exercising extreme judiciousness in making selective hires/backfills; significantly reducing support service contracts and federal travel relative to FY 2012 levels; delaying many procurements, particularly related to needed facilities upgrades inside DOE Headquarters; and de-obligating prior year balances.

In the FY 2013 Request, NNSA stated that a study of workforce planning and organizational structure was being conducted with the goal of achieving an optimal staffing level to meet future mission requirements. NNSA completed the first two phases of the baseline staffing analysis. A staffing vision was outlined for executives, and a gap analysis was conducted to understand the difference between the requirements identified in Phase 1, and the current workforce. NNSA is in the process of developing a strategic workforce plan to close the gaps. In FY 2014, NNSA will continue to plan strategically to meet current and future workforce needs. We will analyze how changes in mission are affecting job requirements. In order to address reduced staffing levels, reshaping of the workforce over the next several years will be essential. In FY 2013, NNSA used the authority granted by the Office of Personnel Management to offer voluntary separation incentive payments and early retirement to help right-size its workforce and as a cost savings measure. Because reshaping involves both obtaining the right size and getting the right skill sets, NNSA will plan to fill a number of mission critical positions in FY 2014 while maintaining a workforce that is well below FY 2012 levels.

The Office of the Administrator has a performance target in support of the overall efficient operation of the NNSA: 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%. The Budget request sets the Office of the Administrator budget equal to 4%, well below NNSA's performance targets.

Strategic Management

The Office of the Administrator supports the NNSA and DOE strategic objective "Secure Our Nation" by providing the Federal personnel and resources necessary to plan, manage, and oversee the operation of the NNSA programs supporting the plan's objectives.

The OA account supports three NNSA goals in the Strategic Plan: 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.

Major Outyear Priorities and Assumptions

Outyear funding levels for the Office of the Administrator appropriation total $1,686,886,000 for FY 2015 through FY 2018. The five year funding plan assumes a Federal staffing level of 1,817 Full-Time Equivalents (FTEs) consistent with anticipated FY 2013 funding levels. This reflects a reduction of over 100 Federal employees from the start of FY 2012. The FYNSP includes escalation of 1.9% for support expenses and 2.5% for salaries and benefits.

Performance Measures

Performance Goal (Measure)	**Federal Administrative Costs** - 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%.		
Fiscal Year	**2012**	**2013**	**2014**
Target	5.9 %	5.9 %	5.9 %
Result	**Exceeded** - 4.1		
Endpoint Target	In keeping with OMB and DOE expectations that administrative costs be minimized, 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%.		

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

The NNSA Office of the Administrator appropriation projected contribution to the DOE WCF for FY 2014 is $43,866,000. This is an increase of $16,366,000 from the FY 2012 Enacted level which reflects the net transfer of Salaries and Benefits and Other Related Expenses within the Office of the Administrator account for overseas office support (+$11,020,000); and increases for telecommunication enhancements, interagency transfers to GSA, and I-Manage (+$5,346,000).

The Department is working to achieve economies of scale through an enhanced Working Capital Fund.

Major Programmatic Shifts or Changes

In compliance with Executive Order 13562, Recruiting and Hiring Students and Recent Graduates, and the Office of Personnel Management (OPM) guidelines, the budget reflects $3,584,000 in support of the consolidation of two student programs, the Office of the Administrator's Future Leaders Program and the Defense Nuclear Nonproliferation's Graduate Fellowship Program, into one NNSA Graduate Program.

Also, the FY 2014 Request includes the following functional transfers that were identified in the FY 2013 President's Request: the net transfer of Salaries and Benefits and Other Related Expenses within the Office of the Administrator account for overseas office support, including Federal salaries and benefits and Foreign Service Nationals, to the Office of the Administrator's share of the WCF; additional increases in OA's share of the WCF to support additional, Department-wide shared services; and the transfer of Federal Unclassified Information Technology from the Office of the Administrator to Weapons Activities, NNSA Chief Information Office (CIO) Activities to consolidate all information management activities.

Office of the Administrator Funding Profile by Category

	(dollars in thousands)		
	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Headquarters			
Salaries and Benefits	207,279	209,788	197,766
Travel	12,703	12,703	12,640
Support Services	15,942	15,942	13,874
Other Related Expenses	62,705	62,705	58,975
Total, Headquarters	298,629	301,138	283,255
Total, Full Time Equivalents	1,271	1,259	1,259
Field Offices			
Salaries and Benefits	89,653	89,653	100,702
Travel	2,528	2,528	2,034
Support Services	4,497	4,497	2,723
Other Related Expenses	14,693	14,693	9,070
Total, Field Offices	111,371	111,371	114,529
Total, Full Time Equivalents	615	558	558
Office of the Administrator			
Salaries and Benefits	296,932	299,441	298,468
Travel	15,231	15,231	14,674
Support Services	20,439	20,439	16,597
Other Related Expenses	77,398	77,398	68,045
Total, Office of the Administrator	410,000	412,509	397,784
Total, FTEs	1,886	1,817	1,817

Note: FY 2012 Salaries and Benefits do not reflect the use of $4.1M in prior year unobligated balances.

Explanation of Funding and/or Program Changes

(Dollars in Thousands)

	FY 2012 Current	FY 2014 Request	FY 2014 Request vs. FY 2012 Current
Salaries and Benefits	**296,932**	**298,468**	**+1,536**
Provides support for an NNSA Federal staff level of 1,817 Full-Time Equivalents (FTEs). Includes payroll escalation including benefits, performance pay increases, and +1.0% for a calendar year 2014 pay raise. The increase from FY 2012 reflects the use of unobligated balances in FY 2012 and payroll escalation, partially offset by the transfer of overseas office support to the Working Capital fund, as reflected in the FY 2013 President's Request, and a reduction to Federal staffing consistent with FY 2013 funding constraints. The FY 2014 Request supports approximately 111 fewer FTEs (-5.7%) than the FY 2012 planned level. In FY 2014, NNSA will continue to plan to address reduced staffing levels. Reshaping of the workforce over the next several years will be essential.			
Travel	**15,231**	**14,674**	**-557**
Supports domestic and foreign travel necessary to conduct NNSA business. Domestic travel provides management oversight, public outreach, and national security assistance and interface with the Field Offices, Headquarters, the laboratories and plants, and local governments. International travel is a key element of the nonproliferation work with international agencies and the former Soviet Union republics, and other International partners. The request reflects NNSA efficiencies achieved in support of the President's Executive Order "*Promoting Efficient Spending*", which is partially offset by increased travel requirements in support of performance assessment reviews and cross-functional reviews as a result of the July, 2012 Y-12 security incident.			
Support Services	**20,439**	**16,597**	**-3,842**
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 support policy development, decision-making, management, or administration.			

	(Dollars in Thousands)		
	FY 2012 Current	FY 2014 Request	FY 2014 Request vs. FY 2012 Current
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 decrease reflects FY 2013 support service reductions based on the annualized CR level, and efficiencies achieved in support of the President's Executive Order "*Promoting Efficient Spending.*" This is partially offset by the transfer of $3.6M from Defense Nuclear Nonproliferation to the Office of the Administrator request in support of the consolidation of two student programs, the Office of the Administrator's Future Leaders Program and the Defense Nuclear Nonproliferation's Graduate Fellowship Program, into one NNSA Graduate Program.			
Other Related Expenses	**77,398**	**68,045**	**-9,353**
Provides funding for Space and Occupancy costs for Headquarters and the field including the Office of the Administrator's contribution to the Working Capital Fund and overall operations and maintenance of both rented and federally owned space; necessary training and skills maintenance of the NNSA Federal staff; funding for the E-Gov initiative; and miscellaneous procurements. Working Capital Fund (+$16.4M): includes the net transfer of Salaries and Benefits (+$5.2M) and other related expenses (+$5.9M) to the Working Capital Fund for overseas office support as reflected in the FY 2013 President's Request, and other enhanced Working Capital Fund requirements (+$5.3M). Space & Occupancy (+$1.2M): reflects deferred building maintenance and escalation. Information Technology (-$23.3M): reflects the structure change for Federal Unclassified Information Technology from the Office of the Administrator to Weapons Activities, NNSA Chief Information Office (CIO) included in the FY 2013 President's Request. Other Related Expenses (-$5.4M): reflects the net transfer of Other Related Expenses (-$5.9M) to the Working Capital Fund for overseas office support identified in the FY 2013 President's Request, offset by escalation (+$0.5M). Training (+$1.7M): reflects an increase for NNSA leadership and career development.			
Total Funding Change, Office of the Administrator	**410,000**	**397,784**	**-12,216**

Support Services by Category

(dollars in thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Management and Professional Services	13,649	13,649	14,583
Studies, Analyses, and Evaluations	3,470	3,470	1,300
Engineering and Technical Services			
Other Technical Support	1,432	1,432	300
ES&H Support	151	151	75
Project Management Support	1,737	1,737	339
Total, Engineering and Technical Services	3,320	3,320	714
Total, Support Services	**20,439**	**20,439**	**16,597**

Other Related Expenses by Category

(dollars in thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Training	2,421	2,421	4,063
Space and Occupancy Costs	14,537	14,537	15,684
Headquarters Working Capital Fund (WCF)			
Supplies	444	444	502
Mail Services	671	671	676
Copying Service	604	604	730
Printing and Graphics	310	310	367
Building Occupancy	18,654	18,654	18,383
Telecommunications	3,383	3,383	5,160
Procurement (DCAA)	0	0	210
Corporate Training Services	47	47	218
Project Management (PMCDP)	367	367	368
iMANAGE	1,087	1,087	3,463
Financial Statement Audits	0	0	77
Internal Control (A-123)	0	0	36
Indirect	1,934	1,934	0
Pensions	0	0	65
CyberOne	0	0	0
Overseas Representation	0	0	11,020
Interagency Transfers to GSA	0	0	2,199
Health Services	0	0	392
TOTAL, Headquarters Working Capital Fund (WCF)	27,500	27,500	43,866
Other Expenses			
International Offices	4,669	4,669	0
Other Services	5,126	5,126	4,420
Reception and representation	12	12	12
Subtotal, Other Expenses	9,807	9,807	4,432
Information Technology	23,133	23,133	0
Total, Other Related Expenses	**77,398**	**77,398**	**68,045**

Weapons Activities

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 $7,868,409 to remain available until expended.

Explanation of Change

The FY 2014 Request provides an increase from the FY 2013 Annualized CR level. 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 2013 Annualized CR level.

Weapons Activities
Overview
Appropriation Summary by Program

	FY 2012 [a] Current	FY 2013 Annualized CR [b]	FY 2014 Request
Weapons Activities			
Directed Stockpile Work	1,862,113	2,111,274	2,428,516
Science Campaign	331,860	350,104	397,902
Engineering Campaign	141,803	150,571	149,911
Inertial Confinement Fusion Ignition and High Yield Campaign	474,484	465,000	401,043
Advanced Simulation and Computing Campaign	617,959	595,000	564,329
Readiness Campaign	128,406	130,095	197,780
Nuclear Programs	0	0	744,450
Readiness in Technical Base and Facilities	2,013,742	2,216,828	0
Secure Transportation Asset	243,116	219,361	219,190
Nuclear Counterterrorism Incident Response [c]	221,369	247,552	0
Facilities and Infrastructure Recapitalization Program	96,120	0	0
Site Stewardship	82,181	90,001	1,706,007
Defense Nuclear Security [d]	692,079	674,504	678,981
Cyber Security [d]	131,370	137,022	0
NNSA CIO Activities	0	0	148,441
National Security Applications [c]	10,000	18,248	0
Legacy Contractor Pensions	168,232	185,000	279,597
Subtotal Weapons Activities	**7,214,834**	**7,590,560**	**7,916,147**
Use of Prior Year Balances	0	-13,219	-47,738
Rescission for contractor pay freeze		-19,999	
Total, Weapons Activities	**7,214,834**	**7,557,342**	**7,868,409**

[a] FY 2012 Current reflects rescission of $19.9 million associated with savings from the contractor pay freeze.
[b] FY 2013 amounts shown reflect the P.L. 112-175 continuing resolution level annualized to a full year.
[c] Starting in FY 2014, funding for these activities is requested under the Defense Nuclear Nonproliferation appropriation.
[d] In FY 2012, the Defense Nuclear Security and Cyber Security programs were funded under the Safeguards and Security header.

Out-Year Appropriation Summary by Program [a]

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
Weapons Activities					
Directed Stockpile Work	2,428,516	2,539,661	2,586,324	2,732,374	3,045,477
Science Campaign	397,902	513,620	541,891	537,244	535,226
Engineering Campaign	149,911	165,117	166,897	160,493	171,974
Inertial Confinement Fusion Ignition and High Yield Campaign	401,043	367,841	364,152	353,941	345,627
Advanced Simulation and Computing Campaign	564,329	601,085	621,048	633,878	646,734
Readiness Campaign	197,780	270,997	254,643	225,831	224,619
Nuclear Programs	744,450	994,096	1,191,565	1,208,522	1,333,181
Readiness in Technical Base and Facilities	0	0	0	0	0
Secure Transportation Asset	219,190	226,103	234,117	245,465	248,236
Nuclear Counterterrorism Incident Response [b]	0	0	0	0	0
Facilities and Infrastructure Recapitalization Program	0	0	0	0	0
Site Stewardship	1,706,007	1,745,423	1,729,197	1,775,745	1,705,634
Defense Nuclear Security	678,981	643,671	652,771	667,300	682,195
Cyber Security	0	0	0	0	0
NNSA CIO Activities	148,441	179,805	151,661	154,404	157,045
National Security Applications [b]	0	0	0	0	0
Legacy Contractor Pensions	279,597	302,279	291,129	237,575	196,981
Subtotal Weapons Activities	**7,916,147**	**8,549,698**	**8,785,395**	**8,932,772**	**9,292,929**
Use of Prior Year Balances	-47,738	0	0	0	0
Total, Weapons Activities	**7,868,409**	**8,549,698**	**8,785,395**	**8,932,772**	**9,292,929**

[a] The annual totals include an allocation to NNSA from the Department of Defense's five year budget plan. The amounts included for Weapons Activities are $947,557,000 in FY 2015, $1,130,193,000 in FY 2016, $1,132,763,000 in FY 2017, and $1,270,932,000 in FY 2018.

[b] Starting in FY 2014, funding for these activities is requested under the Defense Nuclear Nonproliferation appropriation.

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
National Defense Authorization Act for FY 2013 (P.L. 112-239)
The Continuing Appropriations Resolution, 2013 (P.L. 112-175)

Overview

The Weapons Activities appropriation provides for the advanced science, engineering, and technology capabilities and their application to assess, maintain, and where necessary extend the life of the nuclear weapons stockpile. To accomplish this stockpile stewardship and management, the appropriation provides for modernization and maintenance of high security, technical and unique facilities and infrastructure. This appropriation is closely aligned with the Department of Defense requirements to ensure the U.S. nuclear deterrent is safe, secure, and effective.

The programs of the Weapons Activities appropriation are conducted primarily at eight sites by a workforce of approximately 30,000 people. These programs are managed by a federal workforce, composed of civilian and military staffs that are ultimately accountable to Congress, the President, and the public. Details about these programs are found in the FY 2014 Stockpile Stewardship and Management Plan.

Infrastructure and Operations is a newly created office (NA-00), that moves NNSA towards a tenant-landlord site model in which NA-00 is the landlord and the Office of Defense Programs is a tenant. As a result of this reorganization, NNSA is proposing to eliminate the Readiness in Technical Base and Facilities (RTBF) GPRA unit and split these activities between the existing Site Stewardship GPRA unit, and a new GPRA titled "Nuclear Programs." The activities managed by NA-00 would be added to Site Stewardship under a new subprogram titled "Enterprise Infrastructure" which would encompass Site Operations, Site Support, Sustainment, Facilities Disposition, and Construction. The Nuclear Programs Government Performance Results Act (GPRA) unit would include program-owned Special Nuclear Materials (SNM) and the execution of investments in enduring DP capabilities into Nuclear Programs.

Details about these programs are found in the FY 2014 Stockpile Stewardship and Management Plan.

Program Accomplishments and Milestones

In the prior appropriation year, Weapons Activities achieved a number of significant accomplishments and made progress in numerous areas.

- Sustained the stockpile with the delivery of all scheduled Limited Life Components.
- Resolved and closed Significant Finding Investigations.
- Completed surveillance and assessments for all weapon systems in support of the Annual Assessment process, resulting in delivery of the Laboratory Director Letters to the President.
- Exceeded weapons dismantlement goals for FY 2012.
- Slightly exceeded planned production levels for the W76-1.
- Completed all FY 2012 intended activities scheduled for the W88 Alteration 370.
- Initiated B61-12 Phase 6.3 development engineering activities and released B61-12 Weapon Design and Cost Report to enable a FY 2019 First Production Unit.
- Developed new Photon Doppler Velocimetry diagnostic for sub critical experiments enabling vastly improved data collection.
- Progress on equations of state of gases and material properties of plutonium using experiments at TA-55, JASPER, and Z.
- Developed advanced safety, security, and use-control/denial technologies and assessment technologies, and validated use of ion radiation to simulate neutron damage.
- Characterized the aging behavior of legacy and new materials and components.
- Demonstrated energy of 1.8 megajoules in the ultraviolet, made progress understanding limiting issues on ignition, and operated neutron imager at the National Ignition Facility (NIF).
- Continued progress in the development of the direct-drive ignition alternative on Omega.
- Progress achieved in magnetically-driven implosions on the Z Facility.
- Continued investment in a common computing and joint Department of Energy (DOE) Office of Science/National Nuclear Security Administration (NNSA) collaboration on computing and simulation requirements.
- Irradiated a cumulative total of 1,872 TPBARs to provide new tritium to sustain inventory.
- Safely and securely completed 126 shipments without compromise or loss of components or a release of radioactive material, and attained the first production units for Overland Palletized Unit Shipper.

- Defense Nuclear Security accomplished major efficiencies in managing protective force costs across the enterprise; continued to manage risk while identifying cost efficiencies; invested in physical security systems and continued providing for control and accountability of special nuclear materials and other accountable nuclear materials.
- Cyber security developed and implemented a Cyber Security Architecture.
- Environmental Projects and Operations submitted all regulatory documents and performed all required monitoring activities; completed removal of the slab and contaminated soil at LLNL's Building 419; and completed characterization of Zone 11 ground water area at Pantex to support the decisions for enhancement of the remedial systems. The Nuclear Material Integration Program completed removal (de-inventory) of security category I/II SNM from LLNL.

Explanation of Changes

The FY 2014 Request provides an increase from the FY 2013 Annualized CR level.

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. Engagement in all of the above both accomplishes these objectives and maintains core nuclear weapons skills.

The Directed Stockpile Work (DSW) increase enables continued efforts to extend the life of the stockpile, including funding the B61 Life Extension Program (LEP) as approved by the Nuclear Weapons Council in the fall of 2011, the W88 Alt 370 Arming, Fuzing, and Firing (AF&F) activities to support a FY 2019 FPU, and the W78/88-1 Life Extension Program (LEP). The increase also represents a ramp-up in activities for Neutron Generator (NG) and surveillance requirements and allows for investment in new equipment (acquire/install) for Plutonium Sustainment to increase capacity to 30 pits per year.

The Science Campaign increase reflects requirements to provide LEP options utilizing pit re-use, and for developing capabilities for advanced diagnostics and experimental capabilities allowing for assessment of Insensitive High Explosive (IHE) and other safety improvements in future LEPs.

The decrease in the Inertial Confinement Fusion Ignition and High Yield Campaign reflects a number of changes. In FY 2013, the Self-Constructed Asset Pool (SCAP) rate for the NIF was eliminated at LLNL, which increased the indirect rates for the National Ignition Facility (NIF) activities. In FY 2014, NIF facility maintenance costs are reflected in Enterprise Infrastructure in the Site Stewardship funding line to match the convention for facility maintenance at the site and the level of facility operations at the NIF. NIF will also eliminate support for external users of the major high-energy density HED facilities, who will now be directly charged for experimental time in a DoD-like user model.

The decrease in Advanced Simulation & Campaign reflects anticipated management efficiency and workforce restructuring reductions offset by the funding restoration for the Predictive Sciences Academic Alliances Program (PSAAP) following the deferral of the follow-on program in FY 2013, expanded modeling to evaluate pit re-use options, and expanded integrated code development to efficiently use evolving computer architectures.

The Readiness Campaign request increase is mainly in Production Readiness and is driven by realignment of Nonnuclear Readiness to restore base capability lost when the Advanced Design and Production Technologies, High Explosives and Weapons Operations, and Secondary Readiness subprograms were unfunded plus support to the B61 LEP, W78/88-1 Study, W78/88-1 LEP, and W88 Alt 370 first user insertions. The Tritium Readiness increase is driven by unobligated reactor fuel and other costs at TVA that are tied to 18-month nuclear reactor cycles and capital projects for control system updates at the Tritium Extraction Facility.

The Readiness in Technical Base and Facilities (RTBF) was restructured into Nuclear Programs and Site Stewardship. Increases to Nuclear Programs result from the restructuring of RTBF. Nuclear Programs consists of: Nuclear Operations Capability (NOC), containing Program Readiness, Material Recycle and Recovery (MRR), Storage, and Plutonium Metal Processing, a new funding line to receive pits from Pantex and process plutonium to establish an inventory of purified metal alloy that will support manufacturing of 30 pits per year and help mitigate risks resulting from the deferral of construction of Chemistry and Metallurgy Research Replacement-Nuclear Facility (CMRR-NF) Capabilities Based Investments; and Construction.

Secure Transportation Asset's funding is essentially flat, with anticipated management efficiency and workforce

restructuring reductions offset by increases associated with Mobile Guardian Trailer development, Replacement of Escort Vehicles stabilization; and upgrades required for end of serviceable life components in the command and control communications systems.

The increase in Defense Nuclear Security is attributable to shifting the Y-12 protective force contract to the Management and Operations contractor, and planned lifecycle replacement and upgrades of technical surveillance countermeasures equipment across the enterprise.

The NNSA Chief Information Officer (CIO) Activities increase reflects the consolidation of the Cyber security and Information Technology programs into a new single GPRA titled NNSA CIO Activities.

Nuclear Counterterrorism Incident Response and National Security Applications have been moved to the Defense Nuclear Nonproliferation Appropriation.

The increase in Site Stewardship reflects the restructuring of RTBF to Site Operations and Site Support. The increase includes the addition of Minority Serving Institution Partnerships Program for directing common NNSA resources and assets.

The increase in Legacy Contractor Pensions is due to changes in demographic and mortality assumptions.

The Weapons Activities request reflects anticipated management efficiency and workforce restructuring savings of $320 million in FY 2014. Studies to identify the specific efficiencies and program effects are underway, which may not match the choices made here. When these studies are completed, NNSA will work with Congress to make any necessary program or funding level adjustments.

The use of prior year balances reflects the use of unspent prior year pension funds to cover an increase in the legacy contractor pension costs above estimates in the FY 2013 Annualized CR level.

Program Planning and Management

The FY 2014 Stockpile Stewardship and Management Plan will provide the details and describes the highly integrated nature of Weapons Activities programs. The program requirements for Weapons Activities start from national policy and strategy, military requirements, and technical source requirements.

The stockpile stewardship and management process consists of three major steps.

- **Analyze and document fundamental requirements.** This step, which is based on key planning documents, involves analyzing the requirements to assess, certify, and maintain each weapon system, documenting strategies to meet these requirements, and identifying actions to accomplish those strategies.
- **Organize, coordinate, and schedule major deliverables.** This step provides an integrated framework of activities to produce the stockpile sustainment and deterrence deliverables and is accomplished via three sub-elements.
  - The Technical Basis for Stockpile Transformation Planning (TBSTP) document provides an assessment of the stockpile and defines potential options to address sustainment requirements (see Section 3.2.1).
  - The Component Maturation Framework (CMF) is a planning framework to organize, coordinate, and schedule component and technology development for stockpile sustainment and modernization requirements.
  - The Predictive Capability Framework (PCF) is a planning framework to organize, coordinate, and schedule predictive science experimental, theoretical and analytical activities for assessment and certification and to develop solutions to address stockpile issues and modernization.

    Together, the TBSTP, CMF, and PCF provide a long-term roadmap that integrates ST&E-based capabilities into DSW Program activities to answer questions crucial to assessment, certification, and modernization of the weapons stockpile.
- **Detailed Implementation.** The implementation steps mirror the key elements of stockpile management, assess and sustain the stockpile, and modernize the stockpile to remain safe, secure, and reliable into the future. To accomplish these mission elements, the ST&E campaigns, and subprograms, and multi-campaign activities provide the underlying science and engineering, develop the necessary tools (*e.g.*, codes and test capabilities) and execute plans.

Documents that capture this detailed implementation are Life Extension Program plans, Primary and Secondary Assessment Plans and related weapons materials plans.

To ensure a consistent standard for security operations, the DOE Orders set the baseline for NNSA security requirements, and a performance-based assessment process will be instituted. The Cyber Security program outlines the processes and procedures to protect the infrastructure that supports the NNSA. The goal is to prevent the implementation of malicious code and attacks through quick response and advanced detection capabilities.

Site Stewardship will continue to validate the scope and funding priorities to ensure alignment with the Department's Strategic Plan goals and management principles. The Site Stewardship program will institutionalize responsible and accountable corporate facilities management processes.

Strategic Management

Weapons Activities support the NNSA and DOE Strategic Objective "Secure our Nation" by the following mission elements:

- Ensure the U.S. nuclear weapons stockpile remains safe, secure, and reliable.
- Sustain the stockpile and modernize the safety, security, and use-control features of the stockpile without conducting underground nuclear tests.
- Strengthen the ST&E base that allows stockpile stewardship without underground nuclear testing and provides insights to nonproliferation efforts.
- Use nuclear components that are based only on previously-tested designs and provide no new military capabilities while developing and implementing LEPs.
- Study options to ensure the safety, security, and reliability of nuclear warheads on a case-by-case basis, consistent with the Congressionally-mandated Stockpile Management Program.
- Consider the full range of LEP approaches, including refurbishment of warheads, reuse of nuclear components from different warheads, and replacement of nuclear components.
- Give preference to options for refurbishment or reuse when considering any decision to engineer development of warhead LEPs.
- Replace nuclear components only if critical Stockpile Management Program goals cannot otherwise be met and only if specifically authorized by the President and approved by Congress.
- Refurbish and modernize the physical infrastructure to ensure the long-term safety, security, and reliability of the nuclear arsenal.
- Implement nuclear security enterprise protection strategy modifications to synchronize DoD, DOE and NNSA security programs.
- Ensure NNSA facilities and infrastructure are available to support nuclear security enterprise missions. Reduce risks and costs associated with excess facilities by using an enterprise-wide prioritization approach and an integrated priority list of disposition projects.

Major Outyear Priorities and Assumptions

Outyear funding levels for the Weapons Activities appropriation total $35,560,794,000 for FY 2015 through FY 2018.

The priorities for the Weapons Activities appropriation are:

- Pursue B61 life extension Option 3B, with completion of a first production unit no later than FY 2019.
- Complete W76-1 production by FY 2019, while supporting U.S. Navy W76-1 fleet deployment requirements.
- Continue the Phase 6.2 Study of the W78/88-1 LEP to enable completion of the first production unit as early as FY 2025.
- Complete a W88 arming, fuzing, and firing (AF&F) first production unit in FY 2019 to avoid impacting U.S. Navy operational forces and support the W78 and W87 fuze activities.
- Place the B83 in a mix of active and reserve status.
- Down select the cruise missile warhead family in FY 2013.
- Execute a plutonium strategy that achieves a 30 pit per year capacity by 2021. Modify construction plans for Uranium Capabilities Replacement Project to reflect a phased approach to installation of capabilities that accelerates the transfer of Building 9212 capabilities to the new facility. This project was formerly named the Uranium Processing Facility (UPF), and the name has changed to reflect direction from the FY 2013 National Defense Authorization Act.
- Continue constructing the High Explosive Pressing Facility, which will replace three aging high-explosive facilities at Pantex.
- In the outyears, maintain an effective security program founded on performance-based assessments.
- Improve facility maintenance activities and reinvestment projects to arrest growth in deferred maintenance.

A major assumption for the Weapons Activities appropriation is that $320 million in management efficiency and workforce restructuring savings will be realized in FY 2014. Studies to identify the specific efficiencies and program effects are underway, which may not match the choices made here. When these studies are completed, NNSA will work with Congress to make any necessary program or funding level adjustments.

Explanation of Funding and/or Program Changes

	(Dollars in Thousands)		
	FY 2013 Annualized CR	FY 2014 Request	FY 2014 Request vs. FY 2013 Annualized CR
Weapons Activities			
Directed Stockpile Work	**2,111,274**	**2,428,516**	**+317,242**
The increase reflects the continued ramp up of B61-12 development engineering activities to baseline the bomb design in FY 2015 prior to entry into Phase 6.4, and maintains progress toward a FY 2019 FPU. The increase also reflects the life extension study ramp-up on program planning, systems engineering, design development, testing, and qualification. These increases have been offset by a reduction for anticipated management efficiency and workforce restructuring reductions for Weapons Activities.			
Science Campaign	**350,104**	**397,902**	**+47,798**
This increase reflects the ability to provide LEP options utilizing pit re-use, and for developing capabilities for advanced diagnostics and experimental capabilities allowing assessment of Insensitive High Explosive (IHE) and other safety improvements in future LEPs. These increases have been offset by a reduction for anticipated management efficiency and workforce restructuring reductions for Weapons Activities.			
Engineering Campaign	**150,571**	**149,911**	**-660**
This slight decrease is due to the anticipated achievement of management efficiency and workforce restructuring reductions, offset by increases for technology maturation for the creation, evolution and enablement of stockpile surety enhancement options to support a multi-system stockpile and current and future insertion requirements, including the B61-12 LEP and the W87/88-1 LEP.			
Inertial Confinement Fusion Ignition and High Yield Campaign	**465,000**	**401,043**	**-63,957**
This decrease reflects a reduction of the level of facility operations at the NIF in support of program objectives and the transition of its operation to a DoD-like user model under which external users will now pay for their experiments. This decrease also includes a reduction for anticipated management efficiency and workforce restructuring reductions for Weapons Activities.			

	(Dollars in Thousands)		
	FY 2013 Annualized CR	FY 2014 Request	FY 2014 Request vs. FY 2013 Annualized CR
Advanced Simulation and Computing Campaign	**595,000**	**564,329**	**-30,671**
This decrease reflects a deferral of the follow-on Predictive Science Academic Alliance Program and an expansion of modeling to evaluate re-use options, and an expansion of integrated code development to efficiently use evolving computer architectures. This decrease also includes a reduction for anticipated management efficiency and workforce restructuring reductions for Weapons Activities.			
Readiness Campaign	**130,095**	**197,780**	**+67,685**
This increase reflects fluctuating production costs at TVA and capital projects for control system updates at the Tritium Extraction Facility. This increase has been offset by a reduction for anticipated management efficiency and workforce restructuring reductions for Weapons Activities.			
Nuclear Programs	**0**	**744,450**	**+744,450**
Portions of RTBF that are responsible for managing program-owned SNM and the execution of investments in support of enduring DP capabilities have been reorganized into Nuclear Programs. Beginning in FY 2014, Nuclear Programs consists of three program elements: (1) Nuclear Operations Capability (NOC), containing the Program Readiness, Material Recycle and Recovery (MRR), and Storage programs transferred from RTBF; (2) Plutonium Metal Processing, a dedicated funding line to receive pits from Pantex and process plutonium to establish an inventory of purified metal alloy that will support manufacturing of 30 pits per year and help mitigate the risk of deferring the construction of Chemistry and Metallurgy Research Replacement-Nuclear Facility (CMRR-NF); and (3) Construction, which manages the existing line-item construction projects previously within RTBF, to re-vitalize programmatic infrastructure. This increase has been offset by a reduction for anticipated management efficiency and workforce restructuring reductions for Weapons Activities.			
Readiness in Technical Base and Facilities	**2,216,828**	**0**	**-2,216,828**
This program was restructured starting in FY 2014 between Nuclear Programs and the Site Stewardship Program.			
Secure Transportation Asset	**219,361**	**219,190**	**-171**
Secure Transportation Asset's funding is essentially flat, with anticipated management efficiency and workforce restructuring reductions offset by increases associated with Mobile Guardian Trailer development, Replacement of Escort Vehicles stabilization; and upgrades required for end of serviceable life components in the command and control communications			

	(Dollars in Thousands)		
	FY 2013 Annualized CR	FY 2014 Request	FY 2014 Request vs. FY 2013 Annualized CR
systems.			
Nuclear Counterrorism Incident Response [a]	**247,552**	**0**	**-247,552**
This decrease reflects the movement of this activity to the Defense Nuclear Nonproliferation appropriation.			
Site Stewardship	**90,001**	**1,706,007**	**+1,616,006**
This increase reflects the restructuring of RTBF into Site Operations and Site Support, and the addition of MSIPP for directing common NNSA resources and assets. These increases have been offset by a reduction for anticipated management efficiency and workforce restructuring reductions for Weapons Activities.			
Defense Nuclear Security	**674,504**	**678,981**	**+4,477**
This Increase of $4.4 million is attributable to shifting the Y-12 protective force contract to the Management and Operations contractor, and for planned lifecycle replacement and upgrades of technical surveillance countermeasures equipment across the Enterprise. These increases have been offset by a reduction for anticipated management efficiency and workforce restructuring reductions for Weapons Activities.			
Cyber Security	**137,022**	**0**	**-137,022**
This decrease reflects a funding transfer to NNSA CIO Activities to consolidate Cyber Security and Information Technology.			
NNSA CIO Activities	**0**	**148,441**	**+148,441**
This increase reflects a funding transfer from Cyber Activities and the IT portion of the Office of the Administrator. These increases have been offset by a reduction for anticipated management efficiency and workforce restructuring reductions for Weapons Activities.			
National Security Applications [a]	**18,248**	**0**	**-18,248**
This decrease reflects the funding transfer of this activity to the Defense Nuclear Nonproliferation appropriation.			

[a] Starting in FY 2014, funding for this activity is requested under the Defense Nuclear Nonproliferation appropriation.

	(Dollars in Thousands)		
	FY 2013 Annualized CR	FY 2014 Request	FY 2014 Request vs. FY 2013 Annualized CR
Legacy Contractor Pensions	**185,000**	**279,597**	**+94,597**
This increase reflects the increase in the DOE reimbursement to the University of California Retirement Plan for former University of California employees and annuitants that worked at LANL and LLNL based upon changes to economic and demographic assumptions.			
Use of Prior Year Balances	**-13,219**	**-47,738**	**-34,519**
Rescission for contractor pay freeze	**-19,999**	**0**	**+19,999**
Total Funding Change, Weapons Activities	**7,557,342**	**7,868,409**	**+311,067**

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

Department of Energy (DOE) Working Capital Fund (WCF) Support from the NNSA Weapons Activities appropriation projected contribution to the DOE Working Capital Fund for FY 2014 is $26.1 million. DOE is working to achieve economies of scale through an enhanced Working Capital Fund (WCF).

Legacy Contractor Pensions

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

Directed Stockpile Work (DSW)
Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Directed Stockpile Work			
Life Extension Programs and Major Alterations [a]			
B61 Life Extension Program	0	0	537,044
W76 Life Extension Program	0	0	235,382
W78/88-1 Life Extension Program	0	0	72,691
W88 Alt 370	0	0	169,487
Cruise Missile Warhead LEP	0	0	0
Total, Life Extension Programs and Major Alterations	**0**	**0**	**1,014,604**
Life Extension Program			
B61 Life Extension Program	125,834	369,000	0
W76 Life Extension Program	253,633	197,931	0
Total, Life Extension Program	**379,467**	**566,931**	**0**
Stockpile Systems [a]			
B61 Stockpile Systems	169,407	72,364	83,536
W76 Stockpile Systems	63,383	65,445	47,187
W78 Stockpile Systems	93,853	139,207	54,381
W80 Stockpile Systems	44,444	46,540	50,330
B83 Stockpile Systems	48,186	57,947	54,948
W87 Stockpile Systems	83,943	85,689	101,506
W88 Stockpile Systems	75,119	123,217	62,600
Total, Stockpile Systems	**578,335**	**590,409**	**454,488**
Weapons Dismantlement and Disposition [a]	**55,881**	**51,265**	**49,264**
Stockpile Services [a]			
Production Support	325,654	365,405	321,416
Research and Development Support	30,264	28,103	26,349
Research and Deveopment Certification and Safety	165,569	191,632	191,259
Managemement, Technology, and Production	188,700	175,844	214,187
Plutonium Sustainment	138,243	141,685	156,949
Total, Stockpile Services	**848,430**	**902,669**	**910,160**
Total, Directed Stockpile Work	**1,862,113**	**2,111,274**	**2,428,516**

[a] This represents the proposed control level.

Out-Year Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
Directed Stockpile Work					
Life Extension Programs and Major Alterations [a]					
B61 Life Extension Program	537,044	596,514	592,071	566,629	664,845
W76 Life Extension Program	235,382	241,896	236,516	234,842	229,870
W78/88-1 Life Extension Program	72,691	72,573	74,480	100,366	144,986
W88 Alt 370	169,487	151,973	144,462	145,279	132,703
Cruise Missile Warhead LEP	0	9,418	27,987	55,143	91,142
Total, Life Extension Programs and Major Alterations	**1,014,604**	**1,072,374**	**1,075,516**	**1,102,259**	**1,263,546**
Life Extension Program					
B61 Life Extension Program	0	0	0	0	0
W76 Life Extension Program	0	0	0	0	0
Total, Life Extension Program	**0**	**0**	**0**	**0**	**0**
Stockpile Systems [a]					
B61 Stockpile Systems	83,536	103,603	73,756	63,633	64,770
W76 Stockpile Systems	47,187	45,728	49,854	50,004	46,288
W78 Stockpile Systems	54,381	56,712	49,137	53,433	59,226
W80 Stockpile Systems	50,330	62,878	90,752	95,177	80,278
B83 Stockpile Systems	54,948	45,468	46,181	44,055	45,571
W87 Stockpile Systems	101,506	74,999	65,852	71,197	69,008
W88 Stockpile Systems	62,600	70,150	78,671	80,786	105,194
Total, Stockpile Systems	**454,488**	**459,538**	**454,203**	**458,285**	**470,335**
Weapons Dismantlement and Disposition [a]	**49,264**	**49,729**	**50,182**	**50,427**	**59,242**
Stockpile Services [a]					
Production Support	321,416	323,080	331,741	355,460	381,950
Research and Development Support	26,349	32,536	31,721	42,494	48,869
Research and Deveopment Certification and Safety	191,259	190,289	205,591	229,569	350,090
Managemement, Technology, and Production	214,187	218,802	215,959	236,903	255,439
Plutonium Sustainment	156,949	193,313	221,411	256,977	216,006
Total, Stockpile Services	**910,160**	**958,020**	**1,006,423**	**1,121,403**	**1,252,354**
Total, Directed Stockpile Work	**2,428,516**	**2,539,661**	**2,586,324**	**2,732,374**	**3,045,477**

[a] This represents the proposed control level.

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended.
National Defense Authorization Act for FY 2013 (P.L. 112-239).
The Continuing Appropriations Resolution, 2013 (P.L. 112-175).

Overview

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

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 current 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, thereby supporting nonproliferation goals and international commitments; (9) compile and analyzes information during the Annual Assessment process to determine if problems exists; and (10) sustain the plutonium infrastructure to meet long-term national requirements unique to this special nuclear material.

DSW fulfills the above responsibilities through four subprograms: (1) Life Extension Programs (LEPs) and Major Alterations, which lengthen 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.

The Department's Directed Stockpile Work (DSW) request for FY 2014 represents a 15% or $317.2M increase above the FY 2013 Annualized CR level. The increase will enable continued efforts to extend the life of the stockpile, including funding the B61-12 LEP as approved by Nuclear Weapons Council, the W88 Alt 370 Arming, Fuzing, and Firing (AF&F) activities, and the W78/88-1 LEP. The increase also represents a ramp-up in activities for Neutron Generator (NG) and surveillance requirements and allows for acquisition and installation of new equipment for Plutonium Sustainment to increase capacity to 30 pits per year. In addition, the increase supports the initiation of the Integrated Surety Solutions – Transportation (ISS-T) program, which will implement surety improvement recommendations from the 2010 JASON Surety Study related to NNSA weapon transportation options. FY 2014 marks a change in how we categorize major acquisitions. In this Request, funding for Life Extension Studies (LES) and Alterations (Alts) has been moved from the Stockpile Systems program to the Life Extension Programs and Major Alterations. This affects where we report W78/88-1 LEP and W88 Alt 370 activities.

The requested amount for the DSW program for FY 2014 reflects anticipated management efficiency and workforce restructuring reductions of $106.8M for Weapons Activities. Studies to identify the specific program effects are underway. When these studies are completed, NNSA will work with Congress to make any necessary program or funding level adjustments.

Program Accomplishments and Milestones

DSW major accomplishments for FY 2012 are listed below. More detailed program accomplishments are listed in the funding and activity schedule tables later in the document.

- Delivered all scheduled Limited Life Components (LLCs) for the B61, W76, W78, W80, B83, W87, and W88. LLCs include Gas Transfer Systems (GTS), NGs, and alteration kits delivered to the DoD and the Pantex Plant to maintain the nuclear weapons stockpile.
- Conducted surveillance programs for all weapon systems using data collection from flight tests,

laboratory tests, and component evaluations sufficient to assess stockpile reliability without nuclear testing, surveillance culminated in completing all Annual Assessment Reports, and Laboratory Director Letters to the President.
- Completed 102% of planned W76-1 LEP production and completed deliverables to the Navy.
- Completed scheduled W88 Alt 370 Phase 6.2/6.2A activities and produced a Weapons Design and Cost Report (WDCR).
- Completed 105% of W76-0 dismantlement schedule.
- Initiated B61-12 Phase 6.3 development engineering activities following Nuclear Weapon Council authorization in March 2012 and developed program plans, including schedules and validated costs, to enable a FY 2019 First Production Unit (FPU) requirement.
- Released B61-12 Weapon Design and Cost Report and associated cost review results in July 2012 and completed the B61-12 Conceptual Design Review and associated Integrated Phase Gate (IPG) activities in September 2012.
- Completed 112% of FY FY 2012 weapon dismantlement workload in pursuit of completing the dismantlement of weapons retired prior to FY 2009 by the end of FY 2022.
- Submitted Weapons Reliability Report to DoD (November and May).
- Resolved and closed Significant Finding Investigations (SFIs) on the B61, W76, W78, W80, B83, W87, and W88.

Program Planning and Management

DSW ultimately derives its nuclear weapons stockpile requirements from the NWSP, which 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. DSW, in conjunction with the Readiness and Engineering Campaigns, validates its work and funding priorities, which facilitate clear alignment with NNSA and DOE strategic objectives. DSW consistently achieves the goal of funding the highest priority work and addressing near-term and out-year challenges using an enterprise solution approach amongst Defense Programs. This goal is enabled by engaging in semi-annual, bottom-up reviews and planning summit meetings of the work across the Future Years Nuclear Security Plan (FYNSP) by program and site.

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 that underpins the nation's ability to sustain the stockpile as safe, secure, and reliable; and the production and laboratory physical infrastructure. NNSA will identify and address technical issues within the stockpile through life extension programs and sustainment operations. The stockpile management program will continue to consider life extension work on legacy weapons systems to assure their effectiveness through enhancing warhead safety and security; without requiring nuclear tests. DSW will continue to rely on the NNSA science, technology, and engineering (ST&E) capabilities to underwrite the deterrent. As the stockpile decreases in size, the role of ST&E to support the future deterrent increases in importance.

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), DSW emphasizes the following activity areas:
- Continuing production of W76-1 LEP warheads per Nuclear Weapons Council direction
- Continuing B61-12 LEP Phase 6.3 development engineering activities to enable a FY 2019 FPU.
- Focusing life extension study efforts to explore the path forward for the W78/88-1 LEPLEP that includes the possibility of using the resulting warhead also on the Submarine Launched Ballistic Missile (SLBM) to reduce the number of warhead types.
- Continuing Development Engineering (Phase 6.3) for the W88 Alt 370 AF&F system replacement to enable a FY 2019 FPU.
- Sustaining and strengthening the ST&E and surveillance base essential to supporting the stockpile.
- Fulfilling dismantlement activities in support of NNSA's commitment to transition to a smaller stockpile that remains safe, secure, and reliable.
- Making deliveries of limited life and other components for nuclear weapons stockpile management and refurbishment, working through the 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 manage design, develop and produce components for limited life component exchanges and Life Extension Programs.
  - CMF is an approach to integrate and align technology development and maturation

activities with the current LEP and LLC efforts targeted for use of these technologies. The goal is to assure 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).

- Resources from the Engineering Campaign, the Readiness Campaign, Directed Stockpile Work (Stockpile Services and Stockpile Systems) support the CMF.

Major Outyear Priorities and Assumptions

Outyear funding levels for DSW total $10,903,836,000 for FY 2015 through FY 2018. The priorities for DSW are:

- Execute the W76 LEP, B61 LEP, W78/88-1 LEP, W88 Alt 370, and the Cruise Missile Warhead LEP activities in accordance with approved NNSA schedules.
- Sustain activities that support Stockpile Maintenance, Surveillance, and Assessment.
- Continue efforts and progress toward the goal of completing the dismantlement of weapons retired prior to FY 2009 by the end of FY 2022.
- Provide the foundation for capabilities and capacity within the nuclear security enterprise necessary to enable Directed Stockpile Work activities.
- Continue nuclear weapons refurbishment activities through the 6.X process for a cruise missile warhead in coordination with the Air Force long range standoff (LRSO) program.
- For pits, continue to invest in new, additional equipment (acquire, install, configure, authorize for operation) to increase capacity to 30 pits per year.
- Continue ongoing activities that directly support the internal design laboratory site-specific R&D activities. This includes management activities that support stockpile studies and programmatic work for multiple systems or non specific systems.
- Continue ongoing activities that support the stockpile by annually assessing the safety, security, and reliability of the enduring weapons systems; designing and developing limited life components such as Neutron Generators (NGs), Gas Transfer Systems (GTSs), and other components; performing hydrodynamic test and subcritical experiments; and establishing the initial implementation phase of the Integrated Surety Systems for Transportation (ISS-T) program at the laboratories.

Performance Measures

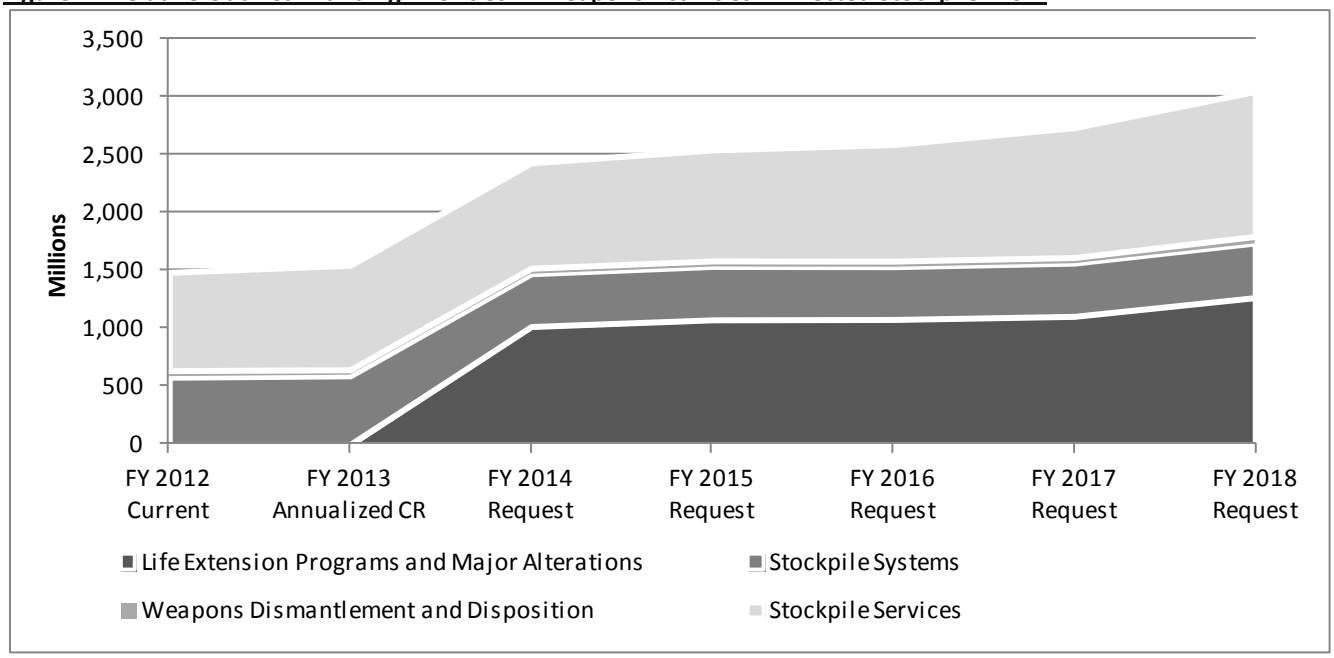
Performance Goal (Measure)	**Annual Warheads Certification** - Annual percentage of warheads in the stockpile that are safe, secure, reliable, and available to the President for deployment.		
Fiscal Year	**2012**	**2013**	**2014**
Target	100% of stockpile certified	100% of stockpile certified	100% of stockpile certified
Result	**Met** - 100		
Endpoint Target	Annually, maintain 100% of warheads in the stockpile as safe, secure, reliable, and available to the President for deployment.		

Performance Goal (Measure)	**LEP Production Costs** - Cumulative percent reduction in projected W76-1 warhead production costs per warhead from established validated baseline, as computed and reported annually by the W76 LEP Cost Control Board.		
Fiscal Year	**2012**	**2013**	**2014**
Target	1% reduction	1% reduction	1% reduction
Result	**Not Met** - 0.7		
Endpoint Target	Achieve the projected reduction in W76 LEP warhead production costs per warhead from established validated baseline by 1.0%; then maintain reduction through the end of production, terminating in 2019 as directed by the Nuclear Weapons Council (NWC) and confirmed by a January 2013 NWC memorandum. Note: A Baseline Change Request is in process to rebaseline the program to reflect Nuclear Weapons Council direction on LEP production.		

Performance Goal (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, PCD, and the RPD "annual" documentation.		
Fiscal Year	**2012**	**2013**	**2014**
Target	100% of annual planned dismantlements	100% of annual planned dismantlements	100% of annual planned dismantlements
Result	**Exceeded** - 112		
Endpoint Target	Complete by FY 2022 the dismantlement of all weapons systems retired prior to FY 2009.		

Performance Goal (Measure)	**W76-1 Life Extension Program (LEP)** - Cumulative percentage of progress in completing Nuclear Weapons Council (NWC)-approved W76-1 Life Extension Program (LEP) activity.		
Fiscal Year	**2012**	**2013**	**2014**
Target	70% of progress	75% of progress	78% of progress
Result	**Met** - 70		
Endpoint Target	By FY 2019, complete production of the NWC-approved W76-1 LEP. Revised annually. Note: The Nuclear Weapons Council voted to complete the W76-1 LEP production in 2019, confirmed in a January 2013 NWC memorandum. This directed change will result in revised targets for the W76-1 LEP activity. A Baseline Change Request is in process to rebaseline the program to reflect Nuclear Weapons Council direction on LEP production.		

Figure 1: Relative Out-Year Funding Priorities in Weapons Activities – Directed Stockpile Work



Explanation of Funding and/or Program Changes

	(Dollars in Thousands)		
	FY 2013 Annualized CR	FY 2014 Request	FY 2014 Request vs. FY 2013 Annualized CR
Directed Stockpile Work			
Life Extension Programs and Major Alterations			
· **B61 Life Extension Program**	**0**	**537,044**	**+537,044**
The requested amount reflects anticipated management efficiency and workforce restructuring reductions of $23.6M. The comparable increase (+$168,044) reflects the continued ramp up of B61-12 development engineering activities including component and system testing utilizing B61-12 functional hardware. The comprehensive testing in FY 2014 will enable the design laboratories to baseline the bomb design in FY 2015 prior to entry into Phase 6.4 and maintain progress toward a 2019 FPU. Production readiness at NNSA plants will continue, and staffing at B61-12 production plants will accelerate. NNSA will begin the purchase of long lead commercial off the shelf parts, tooling, and testers for War Reserve production.			
· **W76 Life Extension Program**	**0**	**235,382**	**+235,382**
The requested amount reflects anticipated management efficiency and workforce restructuring reductions of $10.4M. The comparable increase (+$37,451) reflects completion of production builds for the W76-1 at the re-baselined production rate approved by the Nuclear Weapons Council in FY 2013. NNSA is evaluating execution issues in FY 2013, to ensure that the program can achieve the re-baselined production requirements. The Department will transmit the out-year planned completion schedules in the FY 2014 submission of the Stockpile Stewardship and Management Plan (SSMP).			
· **W78/W88-1 Life Extension Program**	**0**	**72,691**	**+72,691**
The requested amount reflects anticipated management efficiency and workforce restructuring reductions of $3.2M and reflects the transfer of funding for the life extension study from Stockpile Systems. The comparable decrease (-$3,899) reflects activities for life extension study ramp-up on program planning, systems engineering, design development, testing, and qualification. It also reflects NWC direction to provide an interoperable W78/W88-1 Warhead and integrate adaptable AF&F components.			

	(Dollars in Thousands)		
	FY 2013 Annualized CR	FY 2014 Request	FY 2014 Request vs. FY 2013 Annualized CR
· W88 Alteration (Alt) 370	**0**	**169,487**	**+169,487**
The requested amount reflects anticipated management efficiency and workforce restructuring reductions of $7.5M and the transfer of funding for Alt 370 from Stockpile Systems. The comparable increase (+$109,825) reflects the continued ramp-up of the W88 Alt 370 development engineering activities, including component development and component/system testing. This development and testing will enable the design laboratories to baseline a design in FY 2014. NNSA will begin procurement of Life of Program components in order to qualify designs for production. In addition, long-lead purchases for tooling and testers are planned to support early production engineering activities.			
Total, Life Extension Programs and Major Alterations	**0**	**1,014,604**	**+1,014,604**
Life Extension Program			
· B61 Life Extension Program	**369,000**	**0**	**-369,000**
The B61 Life Extension Program has been moved to the Life Extension Program and Major Alterations section of the budget for FY 2014 and beyond.			
· W76 Life Extension Program	**197,931**	**0**	**-197,931**
The W76 Life Extension Program funding has been moved to the Life Extension Program and Major Alterations section of the budget for FY 2014 and beyond.			
Total, Life Extension Programs	**566,931**	**0**	**-566,931**

	(Dollars in Thousands)		
	FY 2013 Annualized CR	FY 2014 Request	FY 2014 Request vs. FY 2013 Annualized CR
Stockpile Systems			
· **B61 Stockpile Systems**	**72,364**	**83,536**	**+11,172**
The requested amount reflects the anticipated management efficiency and workforce restructuring reductions of $3.7M. The increase reflects funding for required surveillance activities, including completing testing of the backlog of system laboratory tests and component evaluations, and funding for increased assessment and reporting activities at Los Alamos National Laboratory (LANL). In addition, the increase enables continued development and production for a B61-11 Neutron Generator replacement.			
· **W76 Stockpile Systems**	**65,445**	**47,187**	**-18,258**
The decrease reflects the completion of the production of Neutron Generators and the anticipated management efficiency and workforce restructuring reductions.			
· **W78 Stockpile Systems**	**139,207**	**54,381**	**-84,826**
The decrease reflects the anticipated management efficiency and workforce restructuring reductions of $2.1M.			
W78 System Sustainment	**62,617**	**54,381**	**-8,236**
The decrease in system sustainment reflects a reduction in technical basis activities for annual assessment, engineering baseline and life expectancy experiments, and component evaluations.			
W78 Life Extension Study	**76,590**	**0**	**-76,590**
The W78 Life Extension Study (LES) has been moved to the Life Extension Program and Major Alterations section of the budget for FY 2014 and beyond as the W78/88-1 Life Extension Program.			
· **W80 Stockpile Systems**	**46,540**	**50,330**	**+3,790**
The requested amount reflects the anticipated management efficiency and workforce restructuring reductions of $2.2M. The increase reflects development, production, and engineering of Neutron Generators to meet a FPU date in FY 2015. In addition, the increase provides funds for the continued production and delivery of gas transfer systems.			

	(Dollars in Thousands)		
	FY 2013 Annualized CR	FY 2014 Request	FY 2014 Request vs. FY 2013 Annualized CR
· **B83 Stockpile Systems**	**57,947**	**54,948**	**-2,999**
The decrease reflects a reduction in B83 sustainment activities and the anticipated management efficiency and workforce restructuring reductions of $2.4M.			
· **W87 Stockpile Systems**	**85,689**	**101,506**	**+15,817**
The requested amount reflects anticipated management efficiency and workforce restructuring reductions of $4.5M coupled with an increase to represent programmatic activities to include the development of replacement Gas Transfer System, Firing Set Assembly production, Neutron Generator production and exchange activities.			
· **W88 Stockpile Systems**	**123,217**	**62,600**	**-60,617**
W88 System Sustainment	**63,555**	**62,600**	**-955**
The decrease reflects anticipated management efficiency and workforce restructuring reductions, offset by an increase for the ramp-up of the W88 Stockpile System activities for the development of replacement Neutron Generators.			
W88 Alt 370	**59,662**	**0**	**-59,662**
The decrease represents the W88 Alt 370 transfer to the Life Extension Programs and Major Alterations section of the budget for FY 2014 and beyond.			
Total, Stockpile Systems	**590,409**	**454,488**	**-135,921**
Weapons Dismantlement and Disposition	**51,265**	**49,264**	**-2,001**
The primarily level funding represents continued effort and progress toward the goal of completing the dismantlement of retired weapons along with anticipated management efficiency and workforce restructuring reductions of $2.2M.			

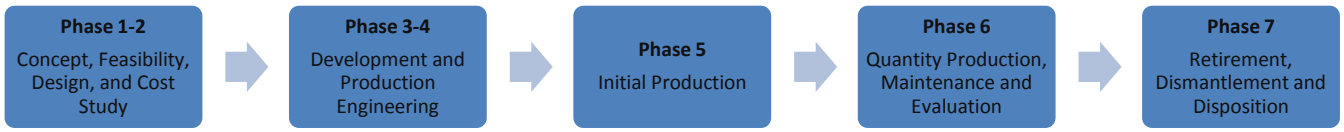
	(Dollars in Thousands)		
	FY 2013 Annualized CR	FY 2014 Request	FY 2014 Request vs. FY 2013 Annualized CR
Stockpile Services			
· **Production Support**	**365,405**	**321,416**	**-43,989**
The decrease reflects completion of modern manufacturing floor process flow software implementation at Pantex, reductions in facility recapitalization costs to meet other program priority needs and anticipated management efficiency and workforce restructuring reductions of $14M.			
· **Research and Development (R&D) Support**	**28,103**	**26,349**	**-1,754**
The decrease reflects a reduction in the amount of support for software and equipment upgrades and limiting of archiving activities to current Mods/Alts/LEPs, along with anticipated management efficiency and workforce restructuring reductions of $$1.2M.			
· **R&D Certification and Safety**	**191,632**	**191,259**	**-373**
The decrease reflects anticipated management efficiency and workforce restructuring reductions of $8.4M. In FY 2014, the Integrated Surety Systems for Transportation (ISS-T) program will be initiated and include full scale engineering development of surety improvements for air-delivered weapons in NNSA weapon transportation operations to support an initial operational capability of FY 2018 for about 22,000. This is offset by a drop in systems component development and technology maturation for future LEPs of 10,000.			
· **Management, Technology, and Production**	**175,844**	**214,187**	**+38,343**
The requested amount reflects the anticipated management efficiency and workforce restructuring reductions of $9.4M. The increase reflects funding of laboratory's ability to provide for weapon response scenarios to ongoing plant operations for electrostatic discharge controls. Additional funds are required to maintain and operate existing logistics, testing, and information systems, to restore special nuclear material processing capability, and to restock multisystem parts and handling gear for the DoD base spares program.			
· **Plutonium Sustainment**	**141,685**	**156,949**	**+15,264**
The requested amount reflects the anticipated management efficiency and workforce restructuring reductions of $6.9M.			

	(Dollars in Thousands)		
	FY 2013 Annualized CR	FY 2014 Request	FY 2014 Request vs. FY 2013 Annualized CR
The increase reflects investments in equipment to expand pit production capacity and continued investments to replace and upgrade end-of-life equipment for sustainable and reliable base capability. The increase also reflects additional personnel to provide for reliable production of developmental pits as well as initial engineering evaluations of materials and development pits.			
Total, Stockpile Services	**902,669**	**910,160**	**+7,491**
Total Funding Change, Directed Stockpile Work	**2,111,274**	**2,428,516**	**+317,242**

Life Extension Programs and Major Alterations
Overview

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

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 and Major Alterations		
FY 2012	Funding appropriated under "Life Extension Programs" will be consolidated under Life Extension Program (LEP) and Major Alterations in FY 2014.	**379,467**
FY 2013	To allow for more efficient management of the life extension and major alteration activities, funding appropriated under "Life Extension Programs" will be consolidated under Life Extension Program (LEP) and Major Alterations in FY 2014. This control will include the LEP and major ALT activities previously included under various Stockpile Systems that support all phases of the Phase 6.X process.	**566,931**
FY 2014		**1,014,604**
FY 2015		**1,072,374**
FY 2016		**1,075,516**
FY 2017		**1,102,259**
FY 2018		**1,263,546**
B61 Life Extension Program		
FY 2012	• **System Engineering & Integration:** Phase 6.3 activities began in March 2012 for a FY 2019 FPU. In FY 2012, NNSA and the Air Force completed initial drafts of the interface control documents (ICD) between NNSA's bomb assembly and the Air Force provided tail kit assembly (TKA) and aircraft-to-bomb ICDs to	**125,834**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Life Extension Programs and Major Alterations		
	assure compatibility with legacy and modern aircraft. System activities completed also included joint NNSA/Air Force system-level conceptual design review of the bomb assembly and TKA. • **Component Development & Production**: NNSA Design Laboratories released component requirements including functional, mechanical, and environmental specifications for all 48 bomb components in preparation of component conceptual design reviews scheduled for FY 2013. Design agencies initiated procurement of development hardware for testing in FY FY 2013. Production plants began production readiness activities including participation in design laboratory led product realization teams. • **System Testing & Qualification**: Completed system testing of vibration flight around units to assess and confirm B61-12 stockpile to target sequence environments. Continued legacy hydrodynamic testing at Los Alamos National Laboratory to assess and provide certification data for changes made to the nuclear explosive package.	
FY 2013	• **System Engineering & Integration:** Phase 6.3 development engineering continues in FY 2013 for the B61 life extension program. 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 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 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 continues in FY 2013 for all major components and assemblies, including completion of component conceptual design reviews. Production and delivery of hardware from development lots enable component and system level flight and laboratory testing in FY 2014 and FY 2015. Product realization teams continue coordination with sites to assure component and facility 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. • **System Testing & Qualification:** Phase 6.3 development engineering activities continues in FY 2013 with the preparation and testing of ground joint test assemblies to assess mechanical and thermal environments. Los Alamos National Laboratory continues legacy 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	• **System Engineering & Integration:** Phase 6.3 development engineering will continue in FY 2014 for the B61 life extension program, which includes refurbishment of nuclear and non-nuclear components and consolidation of the B61-3/4/7/10 into the B61-12. In FY 2014, NNSA will integrate the nuclear	**537,044**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Life Extension Programs and Major Alterations		
	bomb assembly components and the Air Force Tail Kit Assembly into functional Compatibility Test Units (CTUs) for integration testing with Air Force nuclear certified aircraft. Captive carry testing will be conducted in FY 2014 to assess readiness for development flight testing to begin in FY 2015. Work will continue on NNSA and DoD trainers including development and delivery of prototype trainers and associated handling gear. System test results from FY 2013 and FY 2014 will be evaluated and assessed against requirements in preparation for baseline design reviews scheduled for FY 2015. • **Component Development & Production**: Phase 6.3 development engineering activities will continue in FY 2014 with focus on testing and analysis of functional hardware produced in FY 2013 for all bomb components, including firing, arming and safing components, radar and weapon controller, nuclear explosives package components, System II interface, limited life components, power supplies, thermal batteries, and use control components. Testing will evaluate performance of the components against normal and abnormal requirements to verify technology readiness levels have been achieved. Analysis of test results will be utilized to update and baseline component designs in preparation for system baseline design reviews in FY 2016. Laboratory and production plants will continue to mature manufacturing readiness including development of component tooling and testers to assure readiness for Phase 6.4 activities in FY 2016. • **System Testing & Qualification**: NNSA will ramp-up system development testing in FY 2014. Sandia National Laboratories will lead and conduct over 20 system-level joint, ground and aircraft integration tests in FY 2014. Joint tests will integrate the NNSA bomb assembly and the Air Force Tail Kit Assembly utilizing functional hardware produced in FY 2013. The system testing will be used to assess and validate functional requirements and mechanical, thermal and electrical environments in preparation of baselining the system design in FY 2015. FY 2014 testing will also validate readiness to begin first joint development flight in November 2014. Los Alamos National Laboratory will conduct its first B61-12 design hydrodynamic testing to assess certification, and both laboratories will continue to utilize modeling and simulation capabilities to support component and system design margin analysis.	
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• **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 FY 2015. The Air Force will hold a preliminary design review and acceptance group (PDRAAG) in FY 20152016 to assess design and qualification against military requirements. Process prove-in (PPI) activities will continue in FY 2016 through FY 2018. Completion of the final design review, independent peer reviews, and system final design release will be completed in FY 2018. Joint qualification activities will support release of system qualification and associated aircraft compatibility documents. Phase 6.5 will occur in l FY 2018following 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	**596,514** **592,071** **566,629** **664,845**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Life Extension Programs and Major Alterations		
	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 qualifications will be completed in FY 2018 and all war reserve hardware will be required to be shipped to Pantex in FY 2019 to support the first production unit. • **System Testing & Qualification**: Development flight testing will begin in November 2014 and will utilize B61-12 functional hardware from component development lots produced in FY 2013 and FY 2014. Joint testing is required with the Air Force to demonstrate compatibility with the tail kit assembly (TKA) and selected aircraft platforms. Phase 6.4 production engineering activities will initiate in FY 2016. System qualification testing, including both joint flight tests with the Air Force tail kit assembly (TKA) and ground test against normal and abnormal environments will be conducted in FY 2016 through FY 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, 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 FY 2019.	
W76 Life Extension Program		
FY 2012	• Completed the Annual Assessment for the W76-1. • Continued efforts for improving the manufacturability of the components and reducing costs. • War Reserve production and material procurement for the assembly of the reentry body, including 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. • Continued disassembly of W76-0 for the LEP feedstock. • Completed retrofit Evaluation System Tests (REST) of LEP production components and war reserve hardware. • Completed production of replacement components destructively tested and rebuild of war reserve after REST and stockpile surveillance through the life of the program. • Continued the purchase of materials in economic lot sizes to reduce costs at KCP. • Established requirements for process transfers, executed activities to assure continuity of production at Pantex during process transfer, and provided for provision of components; materials; containers; special tooling; and certification of test equipment for the move to new facility at Botts Road. • Completed the purchase of tooling and testers required to provide production	**253,633**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Life Extension Programs and Major Alterations		
	capacity and production rate by the end of FY 2013. These purchases supported production rates contained in the Requirements and Planning Document (RPD) and schedules to meet the current deliverables in agreement with the Department of the Navy (DoN) and in support of submarine deployment requirements.	
FY 2013	• Perform Annual Assessment for the W76-1. • Continue efforts for improving the manufacturability of the components and reducing costs. • Continue disassembly of W76-0 for the LEP feedstock. • Complete Retrofit Evaluation System Tests (REST) of LEP production components and war reserve hardware. • Complete production of replacement components destructively tested and rebuild of war reserve after REST and stockpile surveillance through the life of the program. • Continue the purchase of materials in economic lot sizes to reduce costs at KCP. • Establish requirements for process transfers, executed activities to assure continuity of production at Pantex during process transfer, and provided for provision of components; materials; containers; special tooling; and certification of test equipment for the move to new facility at Botts Road. • Complete the activities for establish continuous production at KCP by the end of FY 2013. These purchases supported production rates contained in the Requirements and Planning Document (RPD) and schedules to meet the current deliverables in agreement with the Department of the Navy (DoN) and in support of submarine deployment requirements. • The program will continue to execute production builds at an approved rate and realign the production of replacement components with the production schedule, to include components for the nuclear explosive package, AF&F assembly, 2X Acorn Gas Transfer System, Neutron Generator, and associated cables, elastomers, valves, pads, cushions, foam supports, telemetries, and miscellaneous parts. • Realign the W76-1 life extension program staff at the Plants, NNSS, and National Laboratories commensurate with the production schedule.	**197,931**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Life Extension Programs and Major Alterations		
FY 2014	• Perform Annual Assessment for the W76-1. • Continue efforts for improving the manufacturability of the components and reducing costs. • Continue disassembly of W76-0 for the LEP feedstock. • Complete Retrofit Evaluation System Tests (REST) of LEP production components and war reserve hardware. • Complete production of replacement components destructively tested and rebuild of war reserve after REST and stockpile surveillance through the life of the program. • Continue the purchase of materials in economic lot sizes to reduce costs at KCP. • Establish requirements for process transfers, executed activities to assure continuity of production at Pantex during process transfer, and provided for provision of components; materials; containers; special tooling; and certification of test equipment for the move to new facility at Botts Road. • Complete the activities for establish continuous production at KCP by the end of FY 2013. These purchases supported production rates contained in the Requirements and Planning Document (RPD) and schedules to meet the current deliverables in agreement with the Department of the Navy (DoN) and in support of submarine deployment requirements. • The program will continue to execute production builds at an approved rate and realign the production of replacement components with the production schedule, to include components for the nuclear explosive package, AF&F assembly, 2X Acorn Gas Transfer System, Neutron Generator, and associated cables, elastomers, valves, pads, cushions, foam supports, telemetries, and miscellaneous parts.	**235,382**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Perform Annual Assessment for the W76-1. • Continue efforts for improving the manufacturability of the components and reducing costs. • Continue disassembly of W76-0 for the LEP feedstock. • Complete Retrofit Evaluation System Tests (REST) of LEP production components and war reserve hardware. • Complete production of replacement components destructively tested and rebuild of war reserve after REST and stockpile surveillance through the life of the program. • Continue the purchase of materials in economic lot sizes to reduce costs at KCP. • Establish requirements for process transfers, executed activities to assure continuity of production at Pantex during process transfer, and provided for provision of components; materials; containers; special tooling; and certification of test equipment for the move to new facility at Botts Road (activities are complete in FY 2015). • Complete the activities for establish continuous production at KCP by the end of FY 2013. These purchases supported production rates contained in the Requirements and Planning Document (RPD) and schedules to meet the current deliverables in agreement with the Department of the Navy (DoN) and in support of submarine deployment requirements.	**241,896** **236,516** **234,842** **229,870**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Life Extension Programs and Major Alterations		
	• The program will continue to execute production builds at an approved rate and realign the production of replacement components with the production schedule, to include components for the nuclear explosive package, AF&F assembly, 2X Acorn Gas Transfer System, Neutron Generator, and associated cables, elastomers, valves, pads, cushions, foam supports, telemetries, and miscellaneous parts.	
W78/W88-1 Life Extension Program		
FY 2012	• Program was funded under the Stockpile Systems section for FY 2012 activities.	**0**
FY 2013	• Program was funded under the Stockpile Systems section for FY 2013 activities.	**0**
FY 2014	• Continue with Phase 6.2 activities with a target First Production Unit no earlier than FY 2025. • Continue to study feasibility and maturation of identified option (which includes the interoperable nuclear explosives package for Mk21 and Mk5A), and study feasibility and maturation of various surety architectures while ensuring Military Characteristics Stockpile-to-Target Sequence requirements are met. Continue alignment with DoD Fuze Replacement and Alt 370 programs. • Continue activities that will further advance the technological and manufacturability maturation levels of nuclear and non-nuclear components. • Continue Phase 6.2 program planning and technical activities involving all three design agencies. Implement a LEP management infrastructure. Continue with development of plans, schedules, and Phase 6.2 products.	**72,691**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Complete Phase 6.2 activities, developing options to meet identified Military Characteristics (MC's) and Stockpile-to-Target-Sequence (STS) requirements. Present those options and recommendations to the NWC using developed DoD/NNSA metrics. Receive NWC instructions to cost the chosen option(s) in Phase 6.2A and develop/publish Weapon Design Cost Report (WDCR) results and associated documents. Once the WDCR is submitted and reviewed, develop and submit recommendations on how to proceed with Phase 6.3. NNSA anticipates a Phase 6.2/6.2A conclusion and NWC approval to proceed into Phase 6.3 in FY 2016. • Continue with Phase 6.X process. Based on a completed Phase 6.2/6.2A activities and once approved by the NWC, proceed with development engineering in Phase 6.3. Activities will include System Engineering and Integration, Component Development and Production, and System Test and Qualification. Schedules will be developed for Phase 6.3 activities and program management processes will be initiated/implemented. A baseline Selected Acquisition Report (SAR) will be developed and updated quarterly. • **System Engineering & Integration:** Phase 6.3 development engineering will be initiated for the life extension program. Systems engineering and integration activities include assessment and integration of component development efforts in preparation to baseline the system design. Work will be initiated as required to develop new joint test assemblies to support joint flight testing. Trainer hardware and associated H-gear/T-gear designs will be developed. Joint system integration activities with the Air Force and/or Navy	**72,573** **74,480** **100,366** **144,986**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Life Extension Programs and Major Alterations		
	(depending on Phase 6.3 direction) will include interface control documents (ICD) between NNSA's warhead assembly and the Services' ballistic missile systems.	
W88 Alt 370		
FY 2012	• Program was funded under the Stockpile Systems section for FY 2012 activities.	**0**
FY 2013	• Program was funded under the Stockpile Systems section for FY 2013 activities.	**0**
FY 2014	• Complete Phase 6.3 activities which is a finalization of development activities as stated in FY 2013. • **System Engineering & Integration:** Phase 6.3 development engineering will continue in FY 2014 for the W88 Alt 370 program, which includes a new AF&F Assembly and Lightning Arrestor Connector. FY 2014 systems engineering and integration activities include assessment and integration of component development efforts in preparation to baseline the W88 Alt 370 design in FY 2015. Work will continue on development and testing of new joint test assemblies to support joint flight testing with the Navy. Type 3 and Type 5 trainers and associated H-gear/T-gear designs will be developed. Joint system integration activities with the Navy will continue including finalization of Interface Control Documents (ICD). • **Component Development & Production:** Phase 6.3 development engineering activities will continue in FY 2014 for major components and subsystems. Included in this development are the new AF&F assembly, stronglinks, radar, firing subsystem, thermal batteries, impact fuze, and launch accelerometer, lightning arrestor connector, and joint flight test assemblies. Production and delivery of development components and hardware will continue to support component and system level qualification and testing in FY 2014. The component Product Realization Teams will conduct their component Baseline Design Reviews (BDRs) in FY 2014 in support of the system BDR scheduled for early FY 2015. Baseline design development of component tooling and testers will continue to support readiness for Phase 6.4 activities in FY 2015. • **System Testing & Qualification:** Phase 6.3 development engineering activities will continue in FY 2014 with the preparation of ground and flight joint test assemblies. Ground testing will continue in FY 2014 to assess mechanical and thermal environments. Development flight testing will begin in FY 2014 and will utilize functional radar hardware from component development lots produced in FY 2013. Joint testing is required with the Navy to demonstrate compatibility with the Trident D5 missile system.	**169,487**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• **System Engineering & Integration:** Phase 6.4 production engineering will begin in FY 2015 following the completion of component and system-level baseline design reviews. The Navy will hold a preliminary Design Review and Acceptance Group (PDRAAG) in early FY 2015 to assess design and qualification against military requirements. Early Type 5 trainers will be produced in FY 2016 to support production readiness at the Pantex Plant. Process Prove-In (PPI) activities will begin in FY FY 2016 and continue through early FY 2018. Completion of the final design review, independent peer reviews, and system final design release will be completed in FY 2017. Phase	**151,973** **144,462** **145,279** **132,703**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Life Extension Programs and Major Alterations		
	6.5 authorization will occur in late FY 2017 following the completion of final design review. The first production unit will occur by December FY 2019. • **Component Development & Production:** Phase 6.4 production engineering activities will initiate in FY 2015 at NNSA production plants to assure all production hardware meets war reserve quality requirements. Process prove-in (PPI) and qualification activities will continue in FY 2016 through early FY 2018 for all major components and assemblies, including new AF&F Assembly, stronglinks, radar, firing subsystem, thermal batteries, impact fuze, and launch accelerometer, lightning arrestor connector, and joint flight test assemblies. All component qualification will be completed in FY 2017 and all war reserve hardware will be required to ship to Pantex in mid to late FY 2018 to support the first production unit. • **System Testing & Qualification:** Phase 6.4 production engineering activities will initiate in FY 2015. System qualification testing, including both joint flight tests with the Navy and ground test against normal and abnormal environments will be conducted in FY 2015 through FY 2018. NNSA and the Navy will conduct compatibility testing to certify the W88 Alt 370 with the Trident II D5 missile system. Laboratories will continue modeling and simulations and analysis of test data to support system qualification in FY 2017. A system qualification report will be published documenting the qualification of the W88 Alt 370 in preparation for the first production unit in December FY 2019. The final weapon design report and final design review and acceptance group (DRAAG) reviews will be scheduled for late to mid FY 2019.	
Cruise Missile Warhead Life Extension Program		
FY 2012	• Not applicable.	**0**
FY 2013	• Program was funded under the W78 Stockpile Systems section for FY 2013 activities.	**0**
FY 2014	• LRSO Study has no additional funding in FY 2014. • ICD development will continue. • Phase 6.1 will commence fourth quarter FY 2014 utilizing FY 2013 carry over dollars from the W78 Stockpile System.	**0**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Phase 6.2 will commence fourth quarter FY 2015 (12 month duration) with limited technology maturation. • Phase 6.2a will commence in FY2016 (6 month duration) with full technology maturation as a parallel activity. • Phase 6.3 will start in FY 2017. • Current funding profile supports a FPU no earlier than 2027.	**9,418** **27,987** **55,143** **91,142**

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. Safety, security and reliability assessments are performed to determine whether an underground nuclear test is required by 50 United States Code 2525 which mandates an Annual Stockpile Assessment and Memorandum to the President. Sustainment activities for each weapon system are identified by four major subprograms that support the enduring stockpile system, as well as LEPs and Major Program Alterations:

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

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

(3) **Weapon Assessment and Support:** includes activities associated with management of the fielded weapon system including: project/program management (time management, milestone management, cost management, human resources management, risk management, management reviews, reports, interfaces, and contracts); system engineering (requirements, design, analysis, technical decisions, system integration, weapon project reviews, engineering documentation, and design definition); and joint NNSA/DoD activities (Unsatisfactory Report responses, Project Officer and Project Officer Group POG meetings and activities, and technical publications support).

Provide systems and component engineering support, support the planning, resolution, and documentation of SFIs to include assessment of root cause, extent of conditions, and impact t to system reliability or safety.

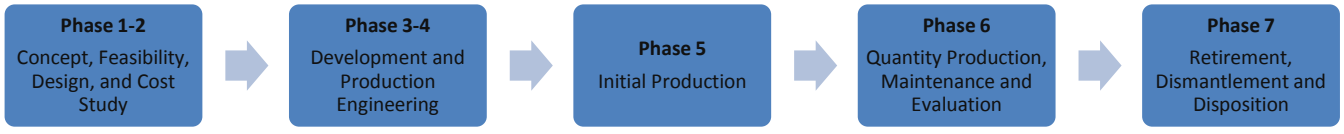
Activities associated with planning, developing, and updating the technical basis for the materials, components, and weapons and performing the weapon assessments including: computational simulation and physical simulation for normal environments, abnormal environments, and nuclear safety; performance of component and system Quantification of Margins and Uncertainties (QMU) analysis and reports.

Activities associated with preparation, writing, and coordination of AARs and Weapon Reliability Report.

Activities needed to assess/resolve system-specific weapon response issues and to provide support to the Nuclear Explosive Safety (NES) and the Nuclear Weapon Safety Study (NWSS) Groups as required.

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

Sequence



Benefits

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

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
Stockpile Systems		
FY 2012		**578,335**
FY 2013		**590,409**
FY 2014		**454,488**
FY 2015		**459,538**
FY 2016		**454,203**
FY 2017		**458,285**
FY 2018		**470,335**
B61 Stockpile Systems		
FY 2012	• **Weapon Maintenance:** Produced LLCs. • **Weapon Surveillance:** Conducted surveillance activities. Completed limited-scope Nuclear Explosive Safety Study (NESS) for B61-7 rebuild activities. • **Weapon Assessment and Support:** Conducted weapon assessment and certification activities necessary to complete Weapon Reliability and Annual Assessment Reports. • **Development Studies/Capability Improvements:** Conducted feasibility studies as required in conjunction with the DoD, executed replacement activities including: new container procurements for field component exchanges, began system integration efforts on the new common B61/B83 NG; and continued development of replacement of end-of-life B61 joint test assembly flight recorders and system-level laboratory testers.	**169,407**
FY 2013	• **Weapon Maintenance:** Continue to produce LLCs; execute repair operations. • **Weapon Surveillance:** Conduct surveillance activities 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. Complete B61-7 rebuild start-up activities. • **Weapon Assessment and Support:** Conduct weapon assessment 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: system integration of the new common B61/B83 NG; and continue activities to support replacement of end-of-life B61 joint test assembly flight recorders and system-level laboratory testers.	**72,364**
FY 2014	• **Weapon Maintenance:** Continue to produce LLCs. Initiate production qualification activities for the B61-11 electronic neutron generator. • **Weapon Surveillance:** Continue surveillance activities to include but not limited to: disassembly and inspections, system-level laboratory tests, joint flight testing, component and material evaluations, and assessment. • **Weapon Assessment and Support:** Continue weapon assessment activities necessary to complete Weapon Reliability and Annual Assessment Reports, to include: laboratory testing and analysis, and conduct significant finding investigations as required. • **Development Studies/Capability Improvements:** Continue feasibility studies as required and in conjunction with the DoD as necessary.	**83,536**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Stockpile Systems		
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• **Weapon Maintenance:** Continue to produce LLCs and achieve first production on electronic neutron generator qualified for B61-11 in FY FY 2017. • **Weapon Surveillance:** Continue surveillance activities to include but not limited to: disassembly and inspections, system-level laboratory tests, joint flight testing, component and material evaluations, and assessment. • **Weapon Assessment and Support:** Continue weapon assessment activities necessary to complete Weapon Reliability and Annual Assessment Reports, which include: laboratory testing and analysis, and significant finding investigations as required. • **Development Studies/Capability Improvements:** Continue feasibility studies as required and in conjunction with the DoD as necessary.	**103,603** **73,756** **63,633** **64,770**
W76 Stockpile Systems		
FY 2012	• **Weapon Maintenance:** Produced LLCs. • **Weapon Surveillance:** Conducted W76-0 and W76-1 surveillance activities. 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:** Conducted weapon assessment activities necessary to complete Weapon Reliability and Annual Assessment Reports, to include: laboratory/site testing and analysis, trainer refurbishments, and Significant Finding Investigations. • **Development Studies/Capability Improvements:** Conducted studies that provide laboratory and management expertise to POG and DoD Safety Studies.	**63,383**
FY 2013	• **Weapon Maintenance:** Continue to produce LLCs. • **Weapon Surveillance:** Continue to conduct surveillance activities for the W76-1 only these activities include: D&I, system-level laboratory and joint flight testing, CME, and platform compatibility and testing activities. • **Weapon Assessment and Support:** Continue to conduct weapon assessment activities necessary to complete Weapon Reliability and Annual Assessment Reports to include: laboratory/site testing and analysis, trainer refurbishments, and SFIs. • **Development Studies/Capability Improvements:** Provide laboratory and management expertise to POG and DoD Safety Studies. W76 development studies and capabilities will be focused toward the on-going LEP.	**65,445**
FY 2014	• **Weapon Maintenance:** Continue to produce LLCs. • **Weapon Surveillance:** Conduct W76-1 and restart W76-0 surveillance activities to include: disassembly and inspection (D&I), system-level laboratory and joint flight testing, component and material evaluations (CME), and platform compatibility and testing activities. • **Weapon Assessment and Support:** Continue annual activities as stated in FY 2013. • **Development Studies/Capability Improvements:** Continue annual activities as stated in FY 2013.	**47,187**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Stockpile Systems		
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• **Weapon Maintenance:** Continue scheduled activities as stated in FY 2014. • **Weapon Surveillance:** Conduct W76-0 and W76-1 surveillance to include: disassembly and inspection (D&I), system-level laboratory and joint flight testing, component and material evaluations (CME), and platform compatibility and testing activities. • **Weapon Assessment and Support:** Continue annual activities as stated in FY 2014. • **Development Studies/Capability Improvements:** Continue annual activities as stated in FY 2014.	**45,728** **49,854** **50,004** **46,288**
W78 Stockpile Systems		
FY 2012		**93,853**
FY 2013		**139,207**
FY 2014		**54,381**
FY 2015 **FY 2016** **FY 2017** **FY 2018**		**56,712** **49,137** **53,433** **59,226**
W78 System Sustainment		
FY 2012	• **Weapon Maintenance:** Produced LLCs. Initiated authorization activities to conduct repair, maintenance and replacement of aging components as required. • **Weapon Surveillance:** Conducted surveillance activities including 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 (JTA). • **Weapon Assessment and Support:** Conducted weapon assessment activities to complete Weapon Reliability and Annual Assessment Reports, to include: laboratory testing and analysis and resolution of Significant Finding Investigations. • **Development Studies/Capability Improvements:** Conducted feasibility studies to assess data collection improvements on JTA's.	**67,853**
FY 2013	• **Weapon Maintenance:** Continue to produce LLCs, continue authorization activities to execute repair; and perform maintenance and replacement of aging components as required. • **Weapon Surveillance:** Continue surveillance activities include but not limited to: disassembly and inspections, system-level laboratory tests, joint flight testing, and component and material evaluations. • **Weapon Assessment and Support:** Continue to 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:** Conduct feasibility studies as required and in conjunction with the DoD as necessary. As a follow-on activity to the Air Force Analysis of Alternatives, the interagency Cruise	**62,617**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Stockpile Systems		
	Missile Warhead LEP (LRSO Warhead) 90-Day Conceptual Study is expected to provide Warhead options and design guidance supporting Interface Control Document (ICD) development. The design study will task two design teams, a Lawrence Livermore National Laboratory (LLNL)/Sandia National Laboratory (SNL) team and a Los Alamos National Laboratory (LANL)/SNL team, to each develop conceptual design options for the Long Range Stand Off (LRSO) payload.	
FY 2014	• **Weapon Maintenance:** Continue to produce LLCs and obtain authorization to execute repair; and perform maintenance and replacement of aging components as required. • **Weapon Surveillance:** Continue surveillance activities include but not limited to: disassembly and inspections, system-level laboratory tests, joint flight testing, component and material evaluations, and assessment. • **Weapon Assessment and Support:** Continue weapon assessment activities necessary to complete Weapon Reliability and Annual Assessment Reports, to include: laboratory testing and analysis, and Significant Finding Investigations as required. • **Development Studies/Capability Improvements:** Conduct feasibility studies as required and in conjunction with the DoD as necessary. The Cruise Missile Warhead LEP requires no additional funding in FY 2014. ICD development will continue. Phase 6.1 will commence fourth quarter FY 2014 utilizing FY 2013 carryover balances from W78 Stockpile Systems.	**54,381**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• **Weapon Maintenance:** Continue annual activities and Execute repair, maintenance and replacement of aging components as required. • **Weapon Surveillance:** Continue annual activities as stated in FY 2014. • **Weapon Assessment and Support:** Continue annual activities as stated in FY 2014. • **Development Studies/Capability Improvements:** Conduct feasibility studies as required and in conjunction with the DoD as necessary.	**56,712** **49,137** **53,433** **59,226**
W78/88-1 Life Extension Program		
FY 2012	• Continued with the Phase 6.1 Study that was authorized in May 2011. • Evaluated the nuclear explosives package for commonality among the Mk12A re-entry vehicle and the Mk5 Reentry Body Assembly (RBA), evaluated safety and security upgrades, extended service life, and aligned with DoD component (e.g., fuze) acquisition program. • Finalized set of options to move into Phase 6.2/2A for feasibility studies. • Initiated Phase 6.2/2A Study.	**26,000**
FY 2013	• Continue to study feasibility of identified option (which includes the nuclear explosives package for commonality amongst the Mk12A, Mk21 re-entry vehicles and the Mk5 Retry Body Assembly), and study feasibility of various surety architectures, while ensuring Military Characteristics are met. • Continue alignment with DoD fuze acquisition program. • Continue activities that will help provide a common W78/W88-1 interoperable warhead and integrated Arming Fuzing and Firing (AF&F) components. • Continue 6.2 planning and technical activities leading to one interoperable	**76,590**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Stockpile Systems		
	warhead designs involving all three design agencies. Erect and implement a management infrastructure. Draft plans, schedules, and phase 6.2 products for further development in FY 2014.	
FY 2014	• The program has been moved to the LEP and Major Alterations section of the budget for FY 2014.	**0**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• The program has been moved to the LEP and Major Alterations section of the budget for FY 2015 and beyond.	**0** **0** **0** **0**
W80 Stockpile Systems		
FY 2012	• **Weapon Maintenance:** Produced LLCs. • **Weapon Surveillance:** Conducted surveillance activities include: disassembly and inspection, system-level laboratory and joint flight testing, component and material evaluations, and platform compatibility and testing activities. • **Weapon Assessment and Support:** Conducted 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, Significant Finding Investigations. • **Development Studies/Capability Improvements:** Conducted feasibility studies as required in conjunction with the DoD, provided NG subassembly and timer driver development lots as well as system qualification and transportation testing, designed, developed, and produced timers, detonators and NGs at Sandia National Laboratories to meet FPU in FY 2015, and completed RPD requirement to revisit LEP possibilities in conjunction with the DoD as well as NPR direction to pursue the same.	**44,444**
FY 2013	• **Weapon Maintenance:** Continue to produce LLCs. • **Weapon Surveillance:** Continue surveillance activities include: disassembly and inspection, system-level laboratory and joint flight testing, component and material evaluations, and platform compatibility and testing activities. • **Weapon Assessment and Support:** Continue weapon assessment activities necessary to complete Weapon Reliability and Annual Assessment Reports, to include: laboratory/site testing, modeling and analysis, trainer refurbishments, POG and DoD safety studies, significant finding investigations. • **Development Studies/Capability Improvements:** Continue feasibility studies as required in conjunction with the DoD, provide NG subassembly, detonator and timer driver design, and development lots as well as system qualification and transportation testing at Sandia National Laboratories to meet First Production Unit in FY 2015.	**46,540**
FY 2014	• **Weapon Maintenance:** Continue to produce LLCs. Continue NG development, PPI, CER, and design/producibility reviews in preparation for the FY 2015 NG FPU. • **Weapon Surveillance:** Continue to conduct annual activities FY 2013. • **Weapon Assessment and Support:** Continue annual activities FY 2013. • **Development Studies/Capability Improvements:** Continue annual activities	**50,330**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Stockpile Systems		
	as stated in FY 2013.	
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• **Weapon Maintenance:** Continue annual activities in FY 2014. Top program priority is the production of LLCs. Conduct NG development from FY 2015 to FY 2017. • **Weapon Surveillance:** Continue annual activities FY 2014. • **Weapon Assessment and Support:** Continue annual activities FY 2014. • **Development Studies/Capability Improvements:** Continue annual activities as stated in FY 2014. Complete FPU of NG in FY 2015.	**62,878** **90,752** **95,177** **80,278**
B83 Stockpile Systems		
FY 2012	• **Weapon Maintenance:** Produced LLC; executed repair, maintenance, and replacement of aging weapon components. • **Weapon Surveillance:** Conducted surveillance activities to include: disassembly and inspection, system-level laboratory and joint flight testing, component and material evaluations, and platform compatibility and testing activities. Initiated project to replace sunset technology associated with joint test assembly telemetry. • **Weapon Assessment and Support:** Conducted 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:** Executed design and development activities of a new electronic NG and GTS (including design, testing, and qualification).	**48,186**
FY 2013	• **Weapon Maintenance:** Continue production of LLCs. Build process prove-in, quality evaluation for joint B61/B83 electronic NGs (ELNGs) and GTS. • **Weapon Surveillance:** Continue surveillance activities 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:** Continue 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:** Complete design and development activities for a new electronic NG and GTS.	**57,947**
FY 2014	• **Weapon Maintenance:** Continue production of LLCs. • **Weapon Surveillance:** Continue surveillance activities include but not limited to: disassembly and inspections, system-level laboratory tests, joint flight testing, component and material evaluations, and assessment. • **Weapon Assessment and Support:** Continue weapon assessment activities necessary to complete Weapon Reliability and Annual Assessment Reports, to include: laboratory testing and analysis, and significant finding investigations as required. • **Development Studies/Capability Improvements:** Continue feasibility studies	**54,948**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Stockpile Systems		
	as required and in conjunction with the DoD as necessary.	
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• **Weapon Maintenance:** Continue annual activities FY 2014. • **Weapon Surveillance:** Continue annual activities FY 2014. • **Weapon Assessment and Support:** Continue annual activities FY 2014. • **Development Studies/Capability Improvements:** Continue annual activities as stated in FY 2014.	**45,468** **46,181** **44,055** **45,571**
W87 Stockpile Systems		
FY 2012	• **Weapon Maintenance:** Produced LLCs; and executed repair, maintenance, and replacement of aging weapon components. • **Weapon Surveillance:** Conducted surveillance activities 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. • **Weapon Assessment and Support:** Conducted 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: Conducted feasibility studies as required in conjunction with the Department of Defense and provided laboratory and management expertise to the POG and DoD Safety Studies.	**83,943**
FY 2013	• **Weapon Maintenance:** Continue to produce LLCs; and execute repair, maintenance, and replacement of aging weapon components to include development of replacement Neutron Generators. • **Weapon Surveillance:** Continue surveillance activities 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:** Continue 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: Continue feasibility studies as required in conjunction with the DoD and redesign Joint Test Assembly cables to enable joint flight testing beyond FY 2014. Initiate activities to replace the existing Gas Transfer System.	**85,689**
FY 2014	• **Weapon Maintenance:** Continue to produce LLCs; and execute repair, maintenance, and replacement of aging weapon components to include completion of Neutron Generator development and transition to full scale production. • **Weapon Surveillance:** Continue surveillance activities include: disassembly and inspection, system-level laboratory and joint flight testing, component and material evaluations, and platform compatibility and testing activities. In	**101,506**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Stockpile Systems		
	addition, Retrofit Evaluation System Tests for the W87 Limited Life Component Exchange and Firing Set Rebuilds will commence in FY 2014. • **Weapon Assessment and Support:** Continue weapon assessment necessary to complete Weapon Reliability and Annual Assessment Reports, to include: laboratory/site testing and analysis, trainer refurbishments, Project Officer Group and Department of Defense safety studies, and Significant Finding Investigations. • **Development Studies/Capability Improvement**s: Continue feasibility studies as required in conjunction with the Department of Defense. Continue Gas Transfer System replacement activities.	
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• **Weapon Maintenance:** Continue annual activities as stated in FY 2014. • **Weapon Surveillance:** Continue annual activities as stated in FY 2014. • **Weapon Assessment and Support:** Continue annual activities as stated in FY 2014. • **Development Studies/Capability Improvements:** Continue annual activities as stated in FY 2014. Continue Gas Transfer System development activities through FY 2018.	**74,999** **65,852** **71,197** **69,008**
W88 Stockpile Systems		
FY 2012		**75,119**
FY 2013		**123,217**
FY 2014		**62,600**
FY 2015 **FY 2016** **FY 2017** **FY 2018**		**70,150** **78,671** **80,786** **105,194**
W88 System Sustainment		
FY 2012	• **Weapon Maintenance:** Produced LLCs; and executed repair, maintenance, and replacement of aging weapon components. • **Weapon Surveillance:** Conducted surveillance activities to include: disassembly and inspection (D&I), system-level laboratory and joint flight testing, component and material evaluations (CME), and platform compatibility and testing activities. • **Weapon Assessment and Support:** Conducted weapon assessment activities necessary to complete Weapon Reliability and Annual Assessment Reports, to include: laboratory/site testing and analysis, trainer refurbishments, and Significant Finding Investigations. • **Development Studies/Capability Improvements:** Conducted feasibility studies in conjunction with the DoD, provide laboratory and management expertise to the POG and DoD Safety Studies.	**37,728**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Stockpile Systems		
FY 2013	• **Weapon Maintenance:** Continue to execute repair, maintenance, and replacement of aging weapon components. • **Weapon Surveillance:** Continue surveillance activities to include: D&I, system-level laboratory and joint flight testing, CME, and platform compatibility and testing activities. • **Weapon Assessment and Support:** Continue weapon assessment activities necessary to complete Weapon Reliability and Annual Assessment Reports, to include: laboratory/site testing and analysis, trainer refurbishments, and SFIs. • **Development Studies/Capability Improvements:** Begin critical minimal NG Timer/Driver Development and Integration activities to replace legacy W88 System NG and align with the W88 Alt 370 FPU. Conduct feasibility studies in conjunction with the DoD; provide laboratory and management expertise to the POG and DoD Safety Studies.	**63,555**

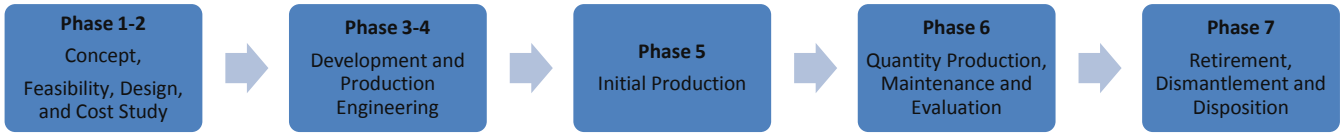
Fiscal Year	Activity	Funding (Dollars in Thousands)
Stockpile Systems		
FY 2014	• **Weapon Maintenance:** Continue annual activities FY 2013. • **Weapon Surveillance:** Continue annual activities FY 2013. • **Weapon Assessment and Support:** Continue annual activities FY 2013. • **Development Studies/Capability Improvements:** Continue annual activities as stated in FY 2013.	**62,600**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• **Weapon Maintenance:** Achieve First Production Unit build of new Neutron Generator. Continue to execute repair, maintenance, and replacement of aging weapon components. Full scale production of Neutron Generators begins in FY 2018 to support the W88 ALT 370 conversion. • **Weapon Surveillance:** Continue annual activities FY 2014. • **Weapon Assessment and Support:** Continue annual activities FY 2014. • **Development Studies/Capability Improvements:** Continue annual activities as stated in FY 2014.	**70,150** **78,671** **80,786** **105,194**
W88 Alt 370		
FY 2012	• Executed W88 Alt 370 Arming, Fuzing, and Firing Assembly (AF&F) development efforts which included consideration of adaptability with the W78, W87, and collaboration with the United Kingdom (UK), completed conceptual designs, and planned pre-production efforts. • Completed Phase 6.2/6.2A cost and feasibility study. A Weapon Design and Cost Report (WDCR) was generated and approved. A Phase 6.2/6.2A report was approved and transmitted to the Nuclear Weapons Council. The NWC approved initiation of the Phase 6.3 activities. • **Component Development & Production:** During Phase 6.2/6.2A the development engineering activities focused on the system and component conceptual designs. The new AF&F Assembly, stronglinks, radar, firing subsystem, thermal batteries, impact fuze, and launch accelerometer, lightning arrestor connector, and joint flight test assemblies were included in this development. The project successfully conducted all conceptual design reviews and Integrated Phase Gate (IPG) Process Gate reviews. The Laboratory and production plants initiated activities to produce the initial development lots to continue maturing technologies in preparation for future ground and flight testing in FY 2014. Plants initiated production readiness activities including development of component tooling and testers to produce development lots and assure readiness for Phase 6.4 activities in FY 2015. • **System Testing & Qualification:** Under Phase 6.2/6.2A, the design agencies developed a system qualification and testing program which includes both ground and joint flight testing to assess mechanical, electrical, and thermal stockpile-to-target environments, and validation of modeling and simulations associated with component and system designs.	**37,391**
FY 2013	• In Phase 6.3, continue W88 Alt 370 AF&F development efforts including adaptability with the W78, W87, and collaboration with the United Kingdom (UK), mature designs to meet a Baseline Design in FY 2015, and continue pre-production efforts. • **System Engineering & Integration:** Phase 6.3 development engineering will continue in FY 2013 for the W88 Alt 370 program and include a new AF&F	**59,662**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Stockpile Systems		
	Assembly and Lightning Arrestor connector. FY 2013 systems engineering and integration activities will include assessment and integration of component development efforts in preparation to baseline the W88 Alt 370 design in FY 2015. Work will continue on development and testing of new joint test assemblies to support joint flight testing with the Navy. Type 3 and Type 5 trainers and associated H-gear/T-gear designs will be developed. Joint system integration activities with the Navy will continue, and include finalization of interface control documents (ICD). • **Component Development & Production:** Phase 6.3 development engineering activities will continue in FY 2013 for major components and subsystems. The new AF&F Assembly, stronglinks, radar, firing subsystem, thermal batteries, impact fuze, launch accelerometer, lightning arrestor connector, and joint flight test assemblies will be included in this development. Production and delivery of development components and hardware will continue to support component and system level qualification and testing in FY 2013 and FY 2014. Product realization teams will coordinate to ensure required production readiness activities are accomplished, including initiation of the KCP Botts Road transition. Development of component tooling and testers will continue to support readiness for Phase 6.4 activities in FY 2015. • **System Testing & Qualification:** Phase 6.3 development engineering activities will continue in FY 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 functional radar hardware from component development lots produced in FY 2013. Joint testing is required with the Navy to demonstrate compatibility with the Trident II D5 missile system.	
FY 2014	• Program funding moved to the LEP and Major Alterations section for FY 2014.	**0**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Program funding moved to the LEP and Major Alterations section for FY 2015 and beyond.	**0** **0** **0** **0**

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 disassembly, characterization of components to identify both hazards and classification issues, disposition of retired warhead system components, and surveillance of selected components from retired warheads. Other supporting activities specific to retired warheads include: conducting hazard assessments; issuing safety analysis reports; conducting laboratory and production plant safety studies; procuring shipping and storage equipment; and declassification and sanitization of component parts. WDD relies on several enabling programs to complete its mission, such as Stockpile Services Production Support for shipping, receiving, and equipment maintenance, and Nuclear Operations Capability Support in the new Nuclear Programs for infrastructure sustainment and containers, and the Office of Secure Transportation 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.
- Supports nonproliferation goals and international commitments by reducing available nuclear materials through the dismantlement and disposition of retired weapons and weapons components.

Funding and Activity Schedule

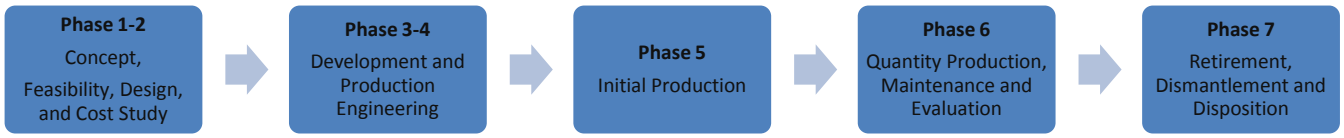
Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• Pantex completed 112% of the planned disassembly workload and Y-12 completed 101% of the planned disassembly workload. • Pantex and Y-12 continued to maintain through-put via efficiencies and the flexibility to use multi-shift operations when possible. • The production sites completed scheduled dismantlement operations of some of the more challenging stockpile systems. • Investments in the W71 process development continued to posture Y-12 for dismantlement operations prior to occupation of the Uranium Processing Facility. • Pantex completed the FY 2012 accelerated dismantlement plan for the W76-0 to meet Navy requested stockpile reductions.	**55,881**
FY 2013	• Pantex and Y-12 will dismantle warheads in accordance with the published Program Control Documents (PCDs) with a priority to providing weapon components for life extension work. • Pantex and Y-12 continue to maintain through-put via efficiencies and the flexibility to use multi-shift operations when possible. • Pantex will continue an accelerated dismantlement plan for the W76-0 to meet Navy requested stockpile reductions.	**51,265**
FY 2014	• Pursue a balanced approach to dismantling warheads and Canned Sub-Assemblies (CSAs) with the disposition of excess weapon components throughout the nuclear security enterprise.	**49,264**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	• Pantex and Y-12 will continue to maintain through-put via efficiencies and the flexibility to use multi-shift operations when possible. • Pantex will continue an accelerated dismantlement plan for the W76-0 to meet Navy requested stockpile reductions.	
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Y-12 will complete B53 component dismantlements and continue with remaining retired CSAs. • Installation of W71 process equipment will ensure the dismantlement of W71 CSAs in accordance with directives. • Continue annual activities as stated in FY 2014.	**49,729** **50,182** **50,427** **59,242**

Stockpile Services
Overview

Stockpile Services provides the logistical, mechanical and support foundation for all DSW operations that are not unique to an individual weapon system. This support for all weapon systems and continued sustainment for all DSW operations includes: Production Support and R&D Support essential for plant and laboratory critical skills, material, quality controls, and surveillance and evaluation activities for the nuclear stockpile; R&D Certification and Safety efforts enabling essential technology maturation activities for currently approved Mods/Alts across multiple weapon systems and supporting the implementation of the Integrated Surety Solutions for Transportation (ISS-T) program; 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



Phases 5 & 6

During the Initial Production (Phases 5) and Quality, Maintenance and Evaluation (Phase 6) of a weapons acquisition life-cycle, Production Support and Management, Technology and Production provide the services below.

Production Support funding is used for: (1) sustaining and modernizing engineering and manufacturing operations; (2) providing quality control; (3) performing tool, gauge, and test equipment procurement, maintenance, and inspection; (4) sustaining purchasing, shipping, and materials management, and; (5) developing and maintaining information systems that manage weapon data. Production Support provides DSW with the equipment, tools and materials to conduct life extension work, dismantlement work, Neutron Generator production and Detonator Cable Assembly production.

Management, Technology and Production funding provides: (1) the people and the processes to help sustain the stockpile , including activities related to surveillance; (2) authorizations for parts specifications; (3) safety assessments; (4) use control technologies; (5) containers; (6) base spares; (7) studies and assessments with respect to nuclear operation safety; (8) weapon components for use in multiple weapons systems; and (9) transportation/handling gear for use in multiple weapons systems.

Benefits

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

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
Stockpile Services		
FY 2012		**848,430**
FY 2013		**902,669**
FY 2014		**910,160**
FY 2015		**958,020**
FY 2016		**1,006,423**
FY 2017		**1,121,403**
FY 2018		**1,252,354**
Production Support		
FY 2012	• Provided engineering and manufacturing 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 managed material supply chain. • Continued implementation of and development of modern manufacturing floor process flow software at Pantex (to be completed in FY 2013) while maintaining existing systems FY 2013). • Continued implementation of and development of modern manufacturing floor process flow software at Y-12 (MoMentum, to be completed in FY 2015) while maintaining existing systems FY 2015). • Maintained inspection equipment, procedures development, process control, and measurement standards to help ensure quality of weapon operation deliverables. • Maintained equipment and processes for neutron generator production to meet directive schedules. • Conducted requalification of products and testers for KCRIMS restart of operations.	**325,654**
FY 2013	• Continue to provide engineering and manufacturing operations (W76-1 LEP, dismantlement, and detonator cable assembly production) to meet directive schedules including revised W76-1 production rate. • Continue to provide calibration, corrective maintenance, and preventative maintenance for production equipment. • Continue to procure special materials for weapon operations and manage material supply chain. • Complete implementation of and development of modern manufacturing floor process flow software at Pantex and maintain existing systems FY 2013. • Continue implementation of and development of modern manufacturing floor process flow software at Y-12 (MoMentum) and maintain existing systems FY 2015). • Continue to maintain inspection equipment, procedures development, process control, and measurement standards to help ensure quality of weapon operation deliverables. • Continue to maintain equipment and processes for neutron generator and	**365,405**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Stockpile Services		
	power supply production to meet revised schedules. • Continue to conduct requalification of products and testers for KCRIMS restart of operations.	
FY 2014	• Provide engineering and manufacturing operations for weapon operations (W76-1 LEP, B61-12- LEP, dismantlement, and detonator cable assembly production) to meet directive schedules including revised W76-1 production rate. • Labor to support Purchasing, Shipping, and Materials Management. • Labor and supplies for Preventative maintenance and equipment calibrations. • Product Certification (independent evaluation of build records) for auditing purposes. • Quality Assurance and Procedural/Engineering Safety. • Classified Computer Network operations and maintenance. • Continue shop floor modernization project at Y-12 (MoMentum) in FY 2015. • Maintenance and troubleshooting support for 300 plus active testers. • Continue to maintain equipment and processes for neutron generator and power supply production to meet revised schedules. • Continue KCRIMS restart of operations by requalification of products and testers. • Infrastructure Modernization. • Completion of special projects (Automated Reservoir Management System, special nuclear material vehicle, oven consolidation, optical contour measurement machine).	**321,416**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Complete shop floor modernization project at Y-12 (MoMentum). • Complete requalification of products and testers for KCRIMS restart of operations. • Continue annual activities as stated in FY 2014. • During FY 2017 and FY 2018, B61-12 LEP equipment and process costs for Neutron Generators and Power Supply production workload increases to meet schedules.	**323,080** **331,741** **355,460** **381,950**
Research and Development Support		
FY 2012	• Supported the conduct of laboratory and flight tests. • Continued the development and demonstration of Quantification of Margins and Uncertainties (QMU) and applied this methodology toward assessment, certification, and other program needs. • Provided scientific and technical support to the production agencies to help achieve weapon production directives. • Provided R&D infrastructure support at the national laboratories.	**30,264**
FY 2013	• Support laboratory and flight tests. • Further develop and demonstrate Quantification of Margins and Uncertainties (QMU) and apply QMU methodology toward assessment, certification, and qualification needs for the stockpile. • Provide scientific and technical support to the production agencies to help achieve weapon production directives.	**28,103**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Stockpile Services		
	• Provide R&D infrastructure support at the national laboratories.	

Fiscal Year	Activity	Funding (Dollars in Thousands)
Stockpile Services		
FY 2014	• Further develop and demonstrate Quantification of Margins and Uncertainties (QMU) and apply QMU methodology toward assessment, certification, and qualification needs for the stockpile. • Continue to provide scientific and technical support to the production agencies to help achieve weapon production directives. • Continue providing R&D infrastructure support at the national laboratories to include archiving activities to support current Mods/Alts/LEPs and support limited software upgrades require for certification and qualification for current Mods/Alts/LEPs.	**26,349**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Further develop and demonstrate Quantification of Margins and Uncertainties (QMU) and apply QMU methodology toward assessment, certification, and qualification needs for the stockpile. • Continue providing scientific and technical support to the production agencies to help achieve weapon production directives. • Continue providing R&D infrastructure support at the national laboratories for archiving activities to support current Mods/Alts/LEPs and limited software upgrades required to certify and qualify current Mods/Alts/LEPs.	**32,536** **31,721** **42,494** **48,869**
Research and Development Certification and Safety		
FY 2012	• Assessed 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. • Analyzed, evaluated, and closed out certain high priority Significant Finding Investigations in accordance with the currently approved baseline closure plans. • Continued to develop and mature surety technologies for future insertion opportunities. • Designed and developed certain Limited Life Components (LLCs), such as: neutron generators (NGs), gas transfer systems (GTSs), energetics, and other replacement components in accordance with the integrated priority list (IPL) process. • Continued to develop and mature initiation system technologies for future insertion into the stockpile. • Identified other components which need to be developed and matured for future insertion opportunities to support a continuing improvement to the stockpile. • Performed nuclear safety R&D studies and weapons effects studies. • Prepared and provided the infrastructure for conducting hydrodynamic tests in support of enduring stockpile systems and multiple system experiments. • Continued to support development of certain NGs (electronic and small generator types) and GTSs. • Continued to develop digital and analog arming and firing subsystems; hardware qualification; system certification and required computer modeling and simulation activities. • Continued analysis of stockpile primary, secondary, chemistry, and	**165,569**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Stockpile Services		
	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. • Continued 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 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 LLCs, such as: NGs, GTSs, energetics, and other replacement components in accordance with the IPLIPL process. • Continue to develop and mature initiation system technologies for future insertion into the stockpile. • Identify other components 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 NGs (electronic and small generator types) and GTSs. • 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. • Continue to implement Independent Nuclear Weapon Assessment Teams, within the National Laboratories to assess the state of health and performance of the weapon system.	**191,632**
FY 2014	• Continue annual assessment of 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. • Continue analysis and evaluation to and close certain high priority Significant Finding Investigations in accordance with the currently approved baseline closure plans. • Continue to design and develop certain LLCEs, such as: NGs, GTSs, energetics, and other replacement components in accordance with the IP process. • Identify other components which need to be developed and matured for	**191,259**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Stockpile Services		
	future insertion opportunities to support approved Mods/Alts. • Perform nuclear safety R&D studies and weapons effects studies. • Prepare and provide the infrastructure for conducting hydrodynamic tests in support of enduring stockpile systems and multiple system experiments. • Continue to support development of certain NGs (electronic and small generator types) and GTSs. • Continue to develop hardware qualification; system certification and required computer modeling and simulation activities to sustain the stockpile. • Continue analysis of stockpile primary, secondary, chemistry, and materials systems analysis and annual assessments related to activities for the enduring stockpile. • Continue providing support for subcritical and other experiments at Nevada National Security Site. • Continue support for Independent Nuclear Weapon Assessment Teams activities, within the National Laboratories to assess the state of health and performance of the weapon system in support of the Annual Assessment Process. • Support technical maturation of select B61-12 components. • Initiate the Integrated Surety Systems for Transportation (ISS-T) program, which will implement the NNSA transportation surety improvements for air delivered weapons recommendations from the 2010 JASON Surety Study.	
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Continue to 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. • Continue to analyze, evaluate, and close certain high priority SFIs in accordance with the currently approved baseline closure plans. • Continue design and development of certain LLCEs such as: NGs, GTSs, energetics, and other replacement components in accordance with the IPL process. • Continue to identify other components which need to be developed and matured for future insertion opportunities to support approved MODs/Alts. • Continue performing nuclear safety R&D studies and weapons effects studies. • Continue to provide the infrastructure for conducting hydrodynamic tests in support of enduring stockpile systems and multiple system experiments. • Continue supporting development of certain NGs (electronic and small generator types) and GTSs. • Continue development of hardware qualification; system certification and required computer modeling and simulation activities to sustain the stockpile. • Continue analysis of stockpile primary, secondary, chemistry, and materials systems analysis and annual assessments related to activities for the enduring stockpile. • Continue supporting subcritical and other experiments at Nevada National Security Site.	**190,289** **205,591** **229,569** **350,090**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Stockpile Services		
	• Continue supporting Independent Nuclear Weapon Assessment Teams activities, within the National Laboratories to assess the state of health and performance of the weapon system in support of the Annual Assessment Process. • Complete technical maturation of select B61-12 components. • Continue ISS-T phase one full scale engineering development and initial production in order to support the inter-operational capability (IOC) of surety improvements for air-delivered weapons in NNSA transportation. • Increases in out-year funding reflects the initiation of ISS-T phase 2 full scale engineering development to extend weapon transportation capability to Navy systems.	
Management, Technology, and Production		
FY 2012	• Provided laboratory and flight testing, analysis, data delivery and information data sharing for surveillance. • Improved safety and use control technology. • Maintained enterprise-wide, integrated product-realization information systems for design, engineering, manufacturing and quality control releases. • Sustained military liaison activities associated with multiple weapon system responses. • Maintained the transformation and transition of DSW's requirements and integration system to provide sustained management and operations. • Deployed 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. • Executed feasibility studies in conjunction with the DoD.	**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 W78/88-1 LEP Study and B61-12 LEP. • Manage applications required for realizing weapon products and ensure that correct, high-quality information is shared with those who require it at all locations in a secure and timely way (part of Product Realization Integrated Digital Enterprise (PRIDE) program). • Respond to DoD Unsatisfactory Reports about issues with the stockpile. • Provide training to DoD for weapons maintenance activities in the field. • Develop content to streamline business process and requirements development. • Production and maintenance of test and handling gear, spare parts for DoD, and containers. • Production of weapon components for use in multiple weapon systems (examples: Batteries, stronglinks, switch tubes, polymers, and containers). • Conduct program management and oversight of weapon sustainment activities.	**175,844**
FY 2014	• Execute surveillance activities in accordance with FY 2014 Program Control	**214,187**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Stockpile Services		
	Documents, and FY 2014 Integrated Weapon Evaluation Team Plans. • Study options to improve safety and use control technologies for the W78/88-1 LEP Study and B61-12 LEP. • Manage applications required for realizing weapon products and ensure that correct, high-quality information is shared with those who require it at all locations in a secure and timely way. • Respond to DoD Unsatisfactory Reports about issues with the stockpile and provide DoD training on weapons maintenance activities in the field. • Production and maintenance of test and handling gear, spare parts for DoD, and containers. • Production of weapon components for use in multiple weapon systems (examples: Batteries, Stronglinks, switch tubes, polymers, and containers). • Conduct program management and oversight of weapon sustainment activities. • Develop tools to identify/assess threats to operations (Collaborative Authorization for Safety Basis (CASTLE) module for Universal Electrostatic Discharge). • Maintain Uranium processing capability. • Conduct Maintenance and Operations Program Management. • Conduct weapons Use Control Studies.	
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Continue annual activities as stated in FY 2014. • Increased Surveillance requirements in FY 2017 and FY 2018 due to stockpile aging projections such as surveillance starting for the W76-1, and the B61-12.	**218,802** **215,959** **236,903** **255,439**
Plutonium Sustainment		
FY 2012	• Completed W88 Pit production. • Implemented equipment and industrial engineering improvements to the manufacturing process. • Began the development of manufacturing processes for W87 pit production. • Maintained a base pit production capability. • Supported pre-production activities of a planned Defense Programs Power Supply mission. • Produced a scaled-experiment device. • Participate in the Los Alamos National Laboratory Landlord Cost Recovery Program based on beneficial services for: distributed, non-fixed operating costs (usually equated to space used) in the plutonium facility; analytical chemistry distributed variable, non-fixed costs; and waste processing distributed, non-fixed costs.	**138,243**
FY 2013	• Sustain a minimal capability to build a limited number of non War Reserve (WR) pits. • Conduct 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. • Continue the development of manufacturing processes for W87 pit	**141,685**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Stockpile Services		
	production. • Participate in the Los Alamos National Laboratory Landlord Cost Recovery Program based on beneficial services for: distributed, non-fixed operating costs (usually equated to space used) in the plutonium facility; analytical chemistry distributed variable, non-fixed costs; and waste processing distributed, non-fixed costs.	
FY 2014	• Maintain base personnel and sustain pit manufacturing capability. • Continue upgrades and investments for end-of-life equipment (acquire, install, configure, authorize for operation). • Complete the transition to W87 pit manufacturing processes and build developmental pits. • Invest in new equipment (acquire/install) to increase capacity to 30 pits per year. • Conduct engineering evaluation of development material/pits (pit certification). • Sustain Defense Programs Power Supply mission capability and product development. • Recover ^{238}Pu. • Participate in the Los Alamos National Laboratory Landlord Cost Recovery Program based on beneficial services for: distributed, non-fixed operating costs (usually equated to space used) in the plutonium facility; analytical chemistry distributed variable, non-fixed costs; and waste processing distributed, non-fixed costs.	**156,949**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Complete investments in replacing aged, end-of-life pit manufacturing equipment (acquire, install, configure, authorize for operation). • Continue to Invest in new, additional equipment (acquire, install, configure, authorize for operation) to increase capacity to 30 pits per year. • Next pit type development: 8-10 development pits, 8-10 process prove-in pits, 8-10 qualification pits. • Increase personnel to support higher pit production. • Reestablish quality infrastructure to provide war reserve pit production. • Engineering evaluation of development, process prove-in, and qualification pits for war reserve use (pit certification). • Physics evaluation of development, process prove-in, and qualification pits for war reserve use (pit certification). • Complete Defense Programs Power Supply mission product development. • Complete recovery of ^{238}Pu. • Participate in the Los Alamos National Laboratory Landlord Cost Recovery Program based on beneficial services for: distributed, non-fixed operating costs (usually equated to space used) in the plutonium facility; analytical chemistry distributed variable, non-fixed costs; and waste processing distributed, non-fixed costs. • Power Supply funding and investments in equipment peak in FY 2017.	**193,313** **221,411** **256,977** **216,006**

Supporting Information

Capital Operating Expenses [a]

Capital Operating Expenses Summary

(Dollars in Thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Capital Operating Expenses			
General Plant Projects	5,342	5,460	5,580
Capital Equipment	23,910	24,436	24,973
Total, Capital Operating Expenses	**29,252**	**29,896**	**30,553**

Outyear Capital Operating Expenses Summary

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
Capital Operating Expenses					
General Plant Projects	5,580	5,703	5,828	5,956	6,087
Capital Equipment	24,973	25,522	26,083	26,656	27,243
Total, Capital Operating Expenses	**30,553**	**31,225**	**31,911**	**32,612**	**33,330**

[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.

Other Supporting Information

Major Items of Equipment (MIEs)

(Dollars in Thousands)

	Total	Prior Years	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Power Supply Assembly Area, LANL					
TEC	17,606	4,640	8,538	4,503	0
OPC	2,638	516	949	500	0
TPC, Power Supply Assembly Area, LANL	**20,244**	**5,156**	**9,487**	**5,003**	**0**
Laser Welder Upgrade, LANL					
TEC	6,371	1,808	1,532	2,991	0
OPC	2,547	738	626	1,222	0
TPC, Laser Welder Upgrade, LANL	**8,918**	**2,546**	**2,158**	**4,213**	**0**
Electro Refining (ER) Line Upgrade, LANL					
TEC	30,920	19,181	1,767	6,962	3,010
OPC	5,034	3,123	288	1,133	490
TPC, Electro Refining (ER) Line Upgrade,	**35,954**	**22,304**	**2,055**	**8,095**	**3,500**
Coordinate Measurement Machine (CMM), LANL					
TEC	12,000	0	0	0	3,000
OPC	3,000	0	0	0	750
TPC, Coordinate Measurement Machine (CMM), LANL	**15,000**	**0**	**0**	**0**	**3,750**
Replacement of Electron Beam Welder, LANL					
TEC	4,800	0	0	0	1,600
OPC	1,200	0	0	0	400
TPC, Replacement of Electron Beam Welder, LANL	**6,000**	**0**	**0**	**0**	**2,000**
Total All MIEs					
Total, TEC	71,697	25,629	11,837	14,456	7,610
Total, OPC	14,419	4,377	1,863	2,855	1,640
TPC, All MIEs	**86,116**	**30,006**	**13,700**	**17,311**	**9,250**

Science Campaign
Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Science Campaign [a]			
Advanced Certification	39,820	44,104	54,730
Primary Assessment Technologies	85,119	94,000	109,231
Dynamic Materials Properties	96,251	97,000	116,965
Advanced Radiography	25,926	30,000	30,509
Secondary Assessment Technologies	84,744	85,000	86,467
Total, Science Campaign	**331,860**	**350,104**	**397,902**

Out-Year Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
Science Campaign [a]					
Advanced Certification	54,730	71,367	73,932	73,709	65,184
Primary Assessment Technologies	109,231	140,296	140,013	137,271	141,919
Dynamic Materials Properties	116,965	135,118	147,006	150,739	151,445
Advanced Radiography	30,509	73,039	82,454	75,959	76,662
Secondary Assessment Technologies	86,467	93,800	98,486	99,566	100,016
Total, Science Campaign	**397,902**	**513,620**	**541,891**	**537,244**	**535,226**

[a] This represents the proposed control level.

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
National Defense Authorization Act for FY 2013 (P.L. 112-239)
The Continuing Appropriations Resolution, 2013 (P.L. 112-175)

Overview

As the nuclear stockpile ages beyond its original design lifetime and we are now 20 years beyond the last underground nuclear test (UGT), it is imperative that models of weapons performance enable the labs to assess that the weapons continue to meet military specifications. Models of performance, benchmarked using underground test data, need to be augmented and ultimately replaced with physics models which are validated with modern experimental data. These models will enable understanding of the effects 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 is the stockpile stewardship program's insurance policy against the need to return to underground testing. It 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 methodologies for warhead re-use or 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 all of these activities while leveraging the investments made in ASC and the Inertial Confinement Fusion Ignition and High Yield (ICF) Campaigns.

The Science Campaign aims to improve understanding of the complex processes that occur leading up to 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. This understanding is essential as we reduce the stockpile, especially since we will be re-using many nuclear components.

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.

The $47.8M increase in the Science Campaign subprograms between the FY 2013 Annualized CR level and the FY 2014 Congressional Request reflects requirements to provide LEP options utilizing pit re-use, and for developing capabilities for advanced diagnostics and experimental capabilities allowing for assessment of Insensitive High Explosive (IHE) and other safety improvements in future LEPs. These activities will: (1) utilize (and study potential improvements in capabilities developed for subcritical experiments at the Nevada National Security Site's U1a complex; and (2) provide focused and hydrodynamic experiments.

The requested amount for this program for FY 2014 reflects a $17.5 M reduction for anticipated management efficiency and workforce restructuring reductions for Weapons Activities. Studies to identify the specific program effects are underway. When these studies are completed, NNSA will work with Congress to make any necessary program or funding level adjustments.

Program Accomplishments and Milestones

In FY 2012, five accomplishments stand out:
1) progress on subcritical experiments at Nevada National Security Site (NNSS), including the successful Castor surrogate experiment and development of a new Photon Doppler Velocimetry (PDV) diagnostic, enabling vastly improved data collection; 2) progress on the development of Equations of State (EOS) for gases based on experiments at Z; 3) experiments on material properties of plutonium at TA-55, JASPER, and Z;
4) completion of a major milestone addressing the prediction of the initial conditions for Boost; and
5) targeted science advances, enabling design and assessment of options for re-use in the future stockpile.

Program Planning and Management

The Science Campaign validates its work and funding priorities by engaging in semi-annual reviews as well as regular external reviews of its work across the 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 the biennially updated Primary and Secondary Assessment plans.

Strategic Management

The Science Campaign efforts 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 Nevada National Security Site (NNSS). These activities are managed through milestones and negotiated performance measures, including many that are the responsibilities of multiple sites.

Milestones and long-term objectives are planned to coincide with strategic Directed Stockpile Work (DSW) decisions and 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 Program Implementation Plans and the Stockpile Stewardship and Management Plan, contain the details of the activities supporting the completion of the PCF.

Major Outyear Priorities and Assumptions

Outyear funding levels for the Science Campaign total $2,127,981,000 for FY 2015 through FY 2018 and reflect programmatic requirements of the nuclear weapons stockpile The major assumption is that the funding level for Science Campaign will be sufficient to support the LEP schedules (as approved by the Nuclear Weapons Council) through 2030. Priorities within the Science Campaign reflect this assumption and are adjusted within the Campaign with these limits. Preliminary plans in support of re-use may drive diagnostic investments that enhance the performance of the radiographic and diagnostic capabilities at U1a in the out-years, in support of the advanced certification of LEP options; the requirements for these investments will be assessed in FY 2014. These priorities are set forth in the PCF referenced above and assume the availability of National Ignition Facility (NIF), Z, and Omega to provide essential High-Energy Density (HED) physics environments. Increases in the outyears are due to an increasing need for capabilities supporting intelligence community assessments of foreign state nuclear weapon activities, as noted in a 2012 study by the JASON group and described in a letter from the Director of National Intelligence sent to the Secretary of Energy late last year.

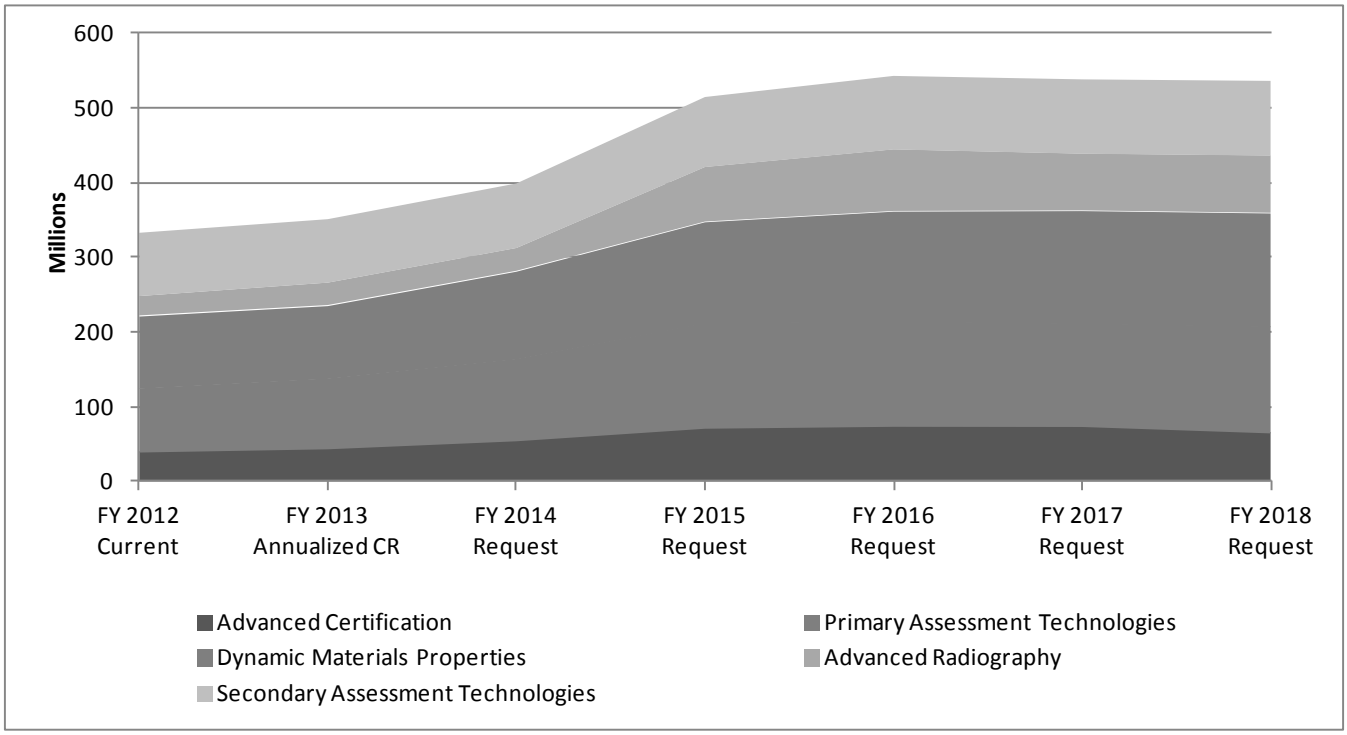
Program Goals and Funding

The goals of the Science Campaign are to eliminate any technical requirement for a future U.S. nuclear test and to perform outstanding science required by the nuclear stockpile mission. The Campaign objectives are to: 1) understand the effects of material processing and aging; 2) enable assessment and certification of stockpile life-extension options; and 3) enable accurate and timely response to other national security questions. Funding requirements are expected to increase to support remanufacturing and re-use options required by the LEP plans.

Performance Measures

Performance Goal (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.		
Fiscal Year	**2012**	**2013**	**2014**
Target	68 % of progress	72 % of progress	76 % of progress
Result	**Met** - 68		
Endpoint Target	By the end of FY 2020, use modern physics models in assessment calculations to replace the major empirical parameters affecting weapon performance. This activity is performed in collaboration with the ICF Campaign.		

Figure 1: Relative Out-Year Funding Priorities in Weapons Activities – Science Campaign



Explanation of Funding and/or Program Changes

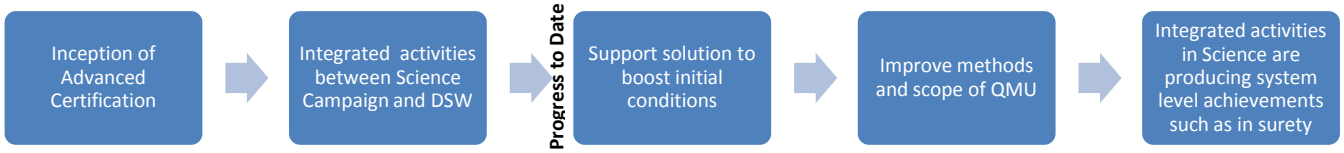
	(Dollars in Thousands)		
	FY 2013 Annualized CR	FY 2014 Request	FY 2014 Request vs. FY 2013 Annualized CR
Advanced Certification	**44,104**	**54,730**	**+10,626**
The increase will enable Advanced Certification to: conduct hydrodynamic experiments required to evaluate and select technologies for re-use of existing pits in LEP designs using Insensitive High Explosive (IHE); develop improved intrinsic safety and security options, and; continue the program focus on enabling assessment of the evolving stockpile in the absence of Underground Tests (UGTs). Additional funds will also be used to establish reacceptance criteria for pit re-use, allowing weapon quality standards to be met while minimizing costs and waste. This increase is also reflects a reduction for anticipated management efficiency and workforce restructuring reductions for Weapons Activities.			
Primary Assessment Technologies	**94,000**	**109,231**	**+15,231**
The increase will enable Primary Assessment Technologies to: address plutonium aging and material compatibility issues associated with pit re-use; provide experimental data and platforms for assessing the impact of stockpile changes modernized on boost performance; and provide expanded capabilities to support Intelligence Community assessments of foreign state nuclear weapon activities. This increase is also reflects a reduction for anticipated management efficiency and workforce restructuring reductions for Weapons Activities.			
Dynamic Materials Properties	**97,000**	**116,965**	**+19,965**
The increase throughout the FYNSP will enable Dynamic Materials Properties to continue the experimental program as planned to support the PCF. In particular, increased experimental efforts on plutonium as a function of age in existing pits intended for re-use are required in order to enable upcoming LEPs without the need to build significant numbers of new pits. This increase is also reflects a reduction for anticipated management efficiency and workforce restructuring reductions for Weapons Activities.			
Advanced Radiography	**30,000**	**30,509**	**+509**
The increase will enable Advanced Radiography to enhance the performance of the radiographic and diagnostic capabilities located at U1a and to study the diagnostic requirements for dynamic plutonium experiments that support advanced certification of LEP options, including those that support pit re-use. This increase is also reflects a reduction for anticipated management efficiency and workforce restructuring reductions for Weapons Activities.			

	(Dollars in Thousands)		
	FY 2013 Annualized CR	FY 2014 Request	FY 2014 Request vs. FY 2013 Annualized CR
Secondary Assessment Technologies	**85,000**	**86,467**	**+1,467**
The increase will enable Secondary Assessment Technologies to advance the pace of high-energy density experiments on NIF, Omega, and Z, many with application to secondary re-use. In addition, a slight increase is for funding a 2-year effort to replace the National Synchrotron Light Source diagnostic calibration capability at Brookhaven National Laboratory. These increases are net after a reduction for anticipated management efficiency and workforce restructuring reductions for Weapons Activities.			
Total Funding Change, Science Campaign	**350,104**	**397,902**	**+47,798**

Advanced Certification
Overview

Advanced Certification is focused on enabling certification of an evolving stockpile in the absence of testing, carried out in part by integrating advances across the supporting science. This subprogram develops tools that support the current stockpile as well as future stockpile options for new safety and security features. Advanced Certification, therefore, provides a strong focal point for key science, technology and engineering deliverables that enable future life extension certification activities. The subprogram integrates scientific and technological advances that are supported elsewhere in Stockpile Stewardship (Science, ASC, and ICF Campaigns) with input from continuing studies in order to 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.

Sequence



Benefits

- Improves the weapons certification process.
- Refines computational tools and methods.
- Promote the advancement of the physical understanding of surety mechanisms.
- Ensures further exploration and understanding of failure modes.
- Anticipates technological surprise.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• Completed models and experiments designed to address failure modes, as well as developed rigorous, peer-reviewed linkage of requirements to the associated certification needs for the weapons lifecycle under relevant conditions. • Used 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 effects of manufacturing and process variables on certification. • Analyzed failure modes and margin-to-failure ratios, including stockpile and non-stockpile designs. This effort also supported broader national security efforts and involved close coordination with other government agencies in national security. • Supported subcritical experiments required for improving predictive capability of performance calculations for nuclear weapon primaries.	**39,820**
FY 2013	• Execute subcritical experiments related to boost initial conditions, a near-term deliverable in the PCF. These are the most data rich experiments conducted to date and increase the number of measurements from 400 to 1.3 million. • Execute two hydrodynamic experiments at DARHT and one at the Contained Firing Facility (CFF) to support understanding issues affecting certification of re-used pits in the IHE primaries. • Support future LEPs by integration of relevant subprogram activities, including the	**44,104**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	understanding of manufacturing and processing variables on material and component performance.	
FY 2014	• Experimentally explore a surety mechanism for re-use. • Use surrogate experiments to examine and extend concept of "nearness" In historic underground test data. • Demonstrate 3D uncertainty quantification for surety. • Develop the path forward to product-based certification in support of more rapid, efficient, and robust LEP, Significant Finding Investigation (SFI) closure, and annual assessment activities. • Continue hydrodynamic experiments required for developing certification of pit re-use options. • Support, in collaboration with other sub-programs, work needed for the 2018 "Burn Boost" milestone including hydrodynamic and subcritical experiments.	**54,730**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Execute experiments supporting evaluation of Pit re-use designs. • Preliminary plans in support of re-use are driving diagnostic investments in the out-years; the requirements for these investments will be assessed further in FY 2014. • Increases in the outyears are due to an increasing need for capabilities supporting intelligence community assessments of foreign state nuclear weapon activities. • Implement improvements in Qualification of Margins and Uncertainties (QMU) metrics into assessment tools. • Develop product-based certification methodologies for components and systems.	**71,367** **73,932** **73,709** **65,184**

Primary Assessment Technologies
Overview

Primary Assessment Technologies provides capabilities needed for annual assessment of stockpile primaries, for enabling future LEPs, for underwriting improvements in weapons safety and security, and for resolving Significant Findings. 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. Another principal focus is on providing the capability to assess impacts of plutonium aging and changes associated with stockpile life extension programs. Primary Assessment Technologies also provides science capabilities needed for Intelligence Community assessments of foreign nuclear weapon activities (a classified November 2012 letter from the Office of the Director of National Intelligence Clapper to the Secretary of Energy summarizes the impact of this effort).

Sequence

Benefits

Reduces the likelihood that the U.S. will have to conduct an underground nuclear test by developing the tools, methods, and knowledge required to certify the safety and performance of the stockpile primaries. 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 2012	• Completed the Level 1 Milestone providing new capabilities for assessment of early phase primary evolution. • Evaluated aging effects on the predicted certifiable service lifetime of pits. • Conducted experiments to provide materials data and improved understanding of implosion hydrodynamics at laboratory firing sites and proton radiography (pRad) at Los Alamos Neutron Science Center (LANSCE). • Developed diagnostics and fielded experimental platforms for primary physics experiments at the National Ignition Facility. • Provided updated analysis of historical nuclear test anomalies to inform assessments and identify significant gaps in predictive capability. • Commissioned advanced detectors for measuring properties of plutonium and uranium fission at LANSCE. • Completed post-shot analysis of Barolo subcritical experiment. • Provided high pressure Pu measurements with the JASPER gas gun.	**85,119**
FY 2013	• Build on successful completion of the FY 2012 'Early Phase Primary Evolution' Level 1 milestone to provide new capabilities for assessing the onset of boost. • Provide physical data and updated models supporting improved pit lifetime assessments. • 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.	**94,000**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	• Execute materials experiments to improve primary assessment, including demonstration that measurements on the phoenix platform provide needed accuracies. • Expand predictive capabilities to broaden the applicability of stockpile tools supporting foreign assessment.	
FY 2014	• Develop and demonstrate predictive capabilities for calculating the onset of primary boosting and the influence of stockpile changes on this onset. • Conduct experiments to develop and validate science for specific future stockpile safety and security technologies. • Provide science capabilities needed for certifying re-use options in planned LEPs. • Assess the impact of specific phenomena on pit lifetimes. • Complete precision measurements for one aspect of fission properties of plutonium to improve the understanding of weapon criticality. • Develop diagnostics enabling improved experimental measurements of high explosives and implosion systems. • Expand predictive capabilities to broaden the applicability of stockpile tools supporting foreign assessment. • Analyze the aging properties of plutonium sufficient to support a future re-use decision.	**109,231**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Complete Level 1 Milestone providing the capability to re-use pits in future Life Extension Programs. • Complete ignition and other HED experiments providing data on the behavior of materials in extreme regimes relevant for stockpile primaries. • Provide a comprehensive update to 2006 pit aging study. • Develop ultra-fast diagnostics for HED platforms. • Complete high explosive experiments resolving key boost uncertainties. • Expand predictive capabilities to broaden the applicability of stockpile tools supporting foreign assessment. • Complete the PCF milestone on boost to resolve key outstanding uncertainties impacting future stockpile maintenance.	**140,296** **140,013** **137,271** **141,919**

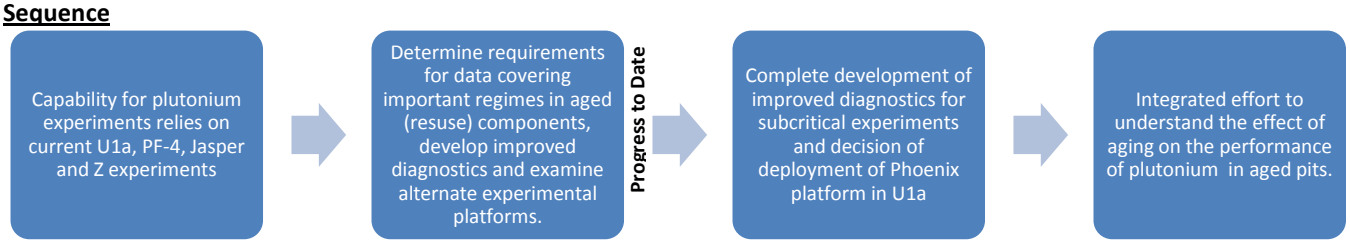
Dynamic Materials Properties
Overview

Dynamic Materials Properties (DMP) 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 materials used in nuclear weapons primaries and related components. Materials data are used to develop experimentally-validated models that incorporate relevant physics into the materials behavior models describing these conditions. Surrogate materials are 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. The Technical details are discussed in greater detail in the Stockpile Stewardship and Management Plan. This subprogram is closely coordinated with the other NNSA Campaigns, Directed Stockpile Work, and the Department of Defense (DoD)-DOE Joint Munitions Program.

Required experiments are conducted at laboratory facilities, including PF-4 at TA-55, the Z-machine, U1a, the Advanced Photon Source (APS), Los Alamos Neutron Science Center (LANSCE), JASPER and other gas and powder gun facilities. We will continue research essential for moving from conventional to insensitive high explosives in current weapons systems and utilizing re-used pits. Key materials data on polymers, foams and other materials will also continue to be generated, analyzed and incorporated into models.

Since the "Dynamic Plutonium Experiments" (DPE) subcampaign was folded into Dynamic Materials Properties in 2008, DMP has been one of the two substantial funding sources (along with R&D Certification and Safety within Directed Stockpile Work) for subcritical and other plutonium experiments. With the increased demand for plutonium experiments supporting pit re-use options, the DPE program is described separately in order to allow for increased transparency. The DPE includes the major experimental capabilities devoted specifically to obtaining data on plutonium under extreme conditions. New experimental capabilities are developed as required to provide the needed data. In particular, subcritical experiments utilizing radiography and/or Photon Doppler Velocimetry (PDV) diagnostic, Z experiments on Pu, the development of the Phoenix platform, JASPER and other experimental platforms are all required in order to enable certification of pit re-use with IHE for upcoming LEPs. The specific details of the upcoming subcritical experiments supporting re-use options are necessarily classified, and are described in the (classified) DPE Plan.

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 leads the integration 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 2012	• Developed improvements to the 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 the National Boost Initiative (NBI).	**96,251**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	• Deployed Multiplexed Photon Doppler Velocimetry for the first time in implosion experiments. • Acquired data to understand the behavior role of plutonium and surrogate materials under hydrodynamic conditions. • Completed the Castor experiment at U1a. • Acquired other materials data at LANSCE, Z, and other laboratory facilities. • Conducted 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.	
FY 2013	• Develop improved EOS and other data for other materials important to assessment of Significant Finding Investigations (SFIs). • Continue support for JASPER and Z. • Conduct experiments investigating the effect of Inclusions on damage to plutonium. • Execute the Pollux subcritical experiment and subsequent calibration and characterization measurements. • Update plutonium strength models using high strain rate and quasi-static data. • Conduct assessment of phase specific spall using the 40-mm gun at TA-55. • Deliver data on next generation thermal-mechanical and failure models. • Continue development of the Phoenix platform for high pressure data from plutonium. • DPE: Develop capability for execution of Phoenix experiments at U1a, including authorization basis for CAT II operations in U1a. • DPE: Prepare for FY 2014 experiment supporting pit re-use options. • DPE: Develop scaled subcritical experiments for FY 2014 and 2015, evaluating specific physics concerns for re-use.	**97,000**
FY 2014	• 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 NBI. • 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 PCF. • Continue work on JASPER. • DPE: Complete preparation for Phoenix at U1a (authorization basis). • DPE: Execute engineering tests required for upcoming subcritical experiment. • DPE: Design and implement experimental capabilities for scaled subcritical experiment evaluating re-use concerns.	**116,965**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Continue development of materials data required for pit re-use options. • Continue characterization of IHE for improved safety options. • Continue to advance diagnostic capabilities for hydrodynamic experiments. • Continue development of uranium, surrogates, and non-nuclear materials data required for stockpile stewardship and SFI closure. • DPE: Execute first Phoenix experiment with plutonium at U1a in FY 2015. • DPE: Execute re-use subcritical experiments required for reuse options for W78-1 in FY 2015. • DPE: Continue required subcritical experiments support.	**135,118** **147,006** **150,739** **151,445**

Advanced Radiography Overview
Overview

Addressing predictive capabilities for stockpile stewardship in the absence of nuclear testing relies on the development of advanced platforms and diagnostics to enable and improve the reliable and repeatable measurement of experimental data. This is also true for addressing Significant Finding Investigations (SFIs) and for early technology assessment in the execution of Life Extension Programs (LEPs). Advanced Radiography develops technologies and diagnostics that support experimental activities that are funded primarily within Primary Assessment Technologies, Dynamic Material Properties, Advanced Certification, and Directed Stockpile Work (DSW). This includes sources, targets, and imaging systems used to diagnose hydrodynamic and subcritical experiments, and the development of platforms and diagnostics for other dynamic material properties experiments, including those that study plutonium properties. These "transformational technologies" improve the quality and reliability of scientific results at many NNSA experimental facilities including the Dual Axis Radiographic Hydrodynamic Testing (DARHT), Site 300, Z, NNSS (U1a), and pRad at LANSCE.

A major activity funded through Advanced Radiography includes the development of a radiographic system or systems to diagnose scaled, subcritical experiments at U1a at NNSS. Within the FYNSP a modification of the Cygnus machine at the U1a facility is planned. The ability to produce a radiograph at maximum compression is planned to be commissioned in 2017. Increased capabilities as a result of this upgrade are expected to require less than $100 million, but this will be examined in FY2014. A potential for future upgrades beyond the FYNSP is also being considered.

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 technologies to meet the radiographic requirements and dynamic material property requirements defined in the Primary and Secondary Assessment Plans and the Hydrotest Plan. Enables resolution of SFIs and facilitates LEPs through the development of advanced tools for the hydrodynamic experiments program.

Other Information

- A recent JASON study strongly endorses the continued execution of focused and integrated experiments conducted within the Science Campaign as part of a healthy science-based stockpile stewardship program. The study report specifically discusses the benefits of executing subcritical experiments at NNSS and specifically mentions the need to improve radiographic diagnostics for these important experiments.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• Continued development of pulsed diode radiographic sources. • Delivered development strategy for next-generation cameras and detectors. • Fielded the high frame rate continuous imager at DARHT for multi-pulse radiographic studies. • Refined requirements for advanced radiographic technologies for hydrodynamic and dynamic plutonium experiments.	**25,926**

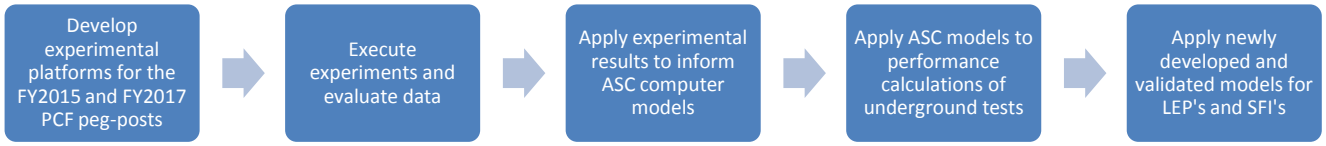
Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2013	• Continue development of radiographic sources and detectors for existing radiographic systems and a new U1a radiographic capability. • Complete a development strategy for high-resolution, high-speed imaging systems for national nuclear security. • Field radiographic diagnostics for the Gemini series at U1a. • 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, and field the higher efficiency camera at Cygnus. • Finalize requirements for advanced radiographic technologies for subcritical experiments.	**30,000**
FY 2014	• Continue development and implementation of advanced diagnostic and radiographic technologies supporting modernized surety, pit re-use options for LEPs and the PCF through the NBI. • Continue system improvements to the Z machine to enable a broader range of dynamic materials experiments and radiation environments. • Down-select technologies for the U1a radiographic system for subcritical experiments. • Continue development of next-generation cameras and detectors for DARHT, pRad, CFF and U1a consistent with the high-resolution, high-speed imaging systems development strategy. • Begin deployment of upgraded capability at U1a.	**30,509**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Continue the deployment of the upgraded capability at U1a. • Continue development and implementation of advanced diagnostic and radiographic technologies in support of modernized surety, pit re-use options for LEPs and the PCF through the NBI. • Commission the Dynamic Compression Sector capability at the Advanced Photon Source for dynamic materials experiments. • Replace the aging DARHT camera system on its scheduled maintenance cycle. • Continue development and implementation of advanced diagnostic and radiographic technologies in support of modernized surety, understanding scaling and surrogacy, and supporting the NBI. • Commission the upgraded U1a capability in 2017. • Pursue CD-0 for an enhanced NNSS radiographic diagnostic.	**73,039** **82,454** **75,959** **76,662**

Secondary Assessment Technologies
Overview

Secondary Assessment Technologies (SAT) provides capabilities that increase confidence in the assessment of stockpile secondaries, enabling a broad range of LEP options and the closure of SFIs. The quantification of the performance margins and their associated uncertainties for both stockpile and non-stockpile systems is supported by SAT. SAT develops predictive capabilities for quantifying weapon outputs and interaction with the environment. SAT has 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).

In addition to near term deliverables that benefit LEP's, a major ongoing activity in SAT is delivering on the FY 2015 milestone on Energy Balance II, and on the FY 2017 PCF milestone on Secondary Performance I. Each of these deliverables represents major advances in predictive capabilities for secondary performance. They require experiments in many cases at HED facilities supported by the ICF Program, and calculations using computing platforms supported by the ASC Program.

Sequence



Benefits

In conjunction with the ASC Campaign, SAT develops the tools, methods, and knowledge required to certify the nuclear performance of secondaries without nuclear testing. This includes providing 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 2012	• Strengthened secondary assessment experimental science with a focus on full utilization of the NIF post the National Ignition Campaign. • Assessed applicability of HED platforms to obtain relevant opacity data for model validation. • Numerically assessed sensitivities associated with specific nuclear cross sections to inform future experimentation. • Demonstrated an initial HED platform in support of secondary assessment objectives.	**84,744**
FY 2013	• Execute the strategy developed in FY 2012 for "Energy Balance II", a FY 2015 PCF peg-post. • In conjunction with the Office of Inertial Confinement Fusion, develop high energy-density platforms in support of the Stockpile Stewardship Program for the NIF, Omega, and Z. • Execute high energy-density experiments in support of the Stockpile Stewardship Program at the NIF, Omega, and Z including obtaining opacity data relevant to SSP applications and equation of state experiments on materials relevant to secondary performance. • Complete detailed weapon output assessments in support of NNSA, DoD and global security programs consistent with the plans established in FY 2012.	**85,000**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	• In coordination with ICF and ASC, assess the needs for LEP re-use needs for secondary assessment. • In coordination with the Engineering Campaign and ASC, conduct a capability gap analysis for the radiation effects sciences mission. • Begin HED calibration capability implementation at Stanford Synchrotron Light Source (SSRL).	
FY 2014	• Continue to execute the strategy developed in FY 2012 for "Energy Balance II", a FY 2015 PCF peg-post. • Develop the strategy for achieving the "Secondary Performance" PCF peg-post in FY 2017. • Implement the program plans associated with secondary re-use consistent with the LEP schedule. • Develop modern capabilities and apply them to a set of devices to calculate outputs in support of the FY 2021 PCF peg-post. • Conduct improved opacity measurements at ORION (AWE). • Develop specialized NIF diagnostics for secondary assessment applications. • In conjunction with the Defense Threat Reduction Agency, update output calculations in the Bluebook. • In coordination with ASC, implement the necessary linkages and interfaces to ensure output calculations become part of annual stockpile assessment. • Implement the capability-based radiation effects science mission into the PCF. • Continue HED calibration capability implementation at SSRL.	**86,467**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Complete the "Energy Balance II" milestone, a FY 2015 PCF deliverable. • Execute the "Secondary Performance" PCF peg-post strategy. • Continue to execute program plans associated with secondary re-use consistent with the LEP schedule. • Complete HED calibration capability implementation at SSRL. • Expand the HED science campaign for radiation transport and EOS measurements in a variety of materials. • Validate hydrodynamics models against HED and ICF experiments. • Re-evaluate cross section measurements of radiochemical detectors. • Evaluate anomalies associated with over-driven secondaries. • Complete replacement of the High-Energy Density diagnostic calibration capability located at the National Synchroton Light Source with a new capability at the Stanford Synchrotron Light Source. • Execute the "Secondary Performance" PCF milestone to be completed in FY 2017. • Continue to execute program plans associated with secondary re-use consistent with the LEP schedule.	**93,800** **98,486** **99,566** **100,016**

Supporting Information

Capital Operating Expenses [a]

Capital Operating Expenses Summary

(Dollars in Thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Capital Operating Expenses			
General Plant Projects	0	0	0
Capital Equipment	449	458	469
Total, Capital Operating Expenses	**449**	**458**	**469**

Outyear Capital Operating Expenses Summary

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
Capital Operating Expenses					
General Plant Projects	0	0	0	0	0
Capital Equipment	469	480	491	502	513
Total, Capital Operating Expenses	**469**	**480**	**491**	**502**	**513**

[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.

Supporting Information

Other Supporting Information

Major Items of Equipment (MIEs)

(Dollars in Thousands)

	Total	Prior Years	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
TA-53 pRad, LANL					
TEC	2,100	1,811	741	1,162	1,000
OPC	0	0	0	0	0
TPC, TA-53 pRad, LANL	**2,100**	**1,811**	**741**	**1,162**	**1,000**
Total All MIEs					
Total, TEC	2,100	1,811	741	1,162	1,000
Total, OPC	0	0	0	0	0
TPC, All MIEs	**2,100**	**1,811**	**741**	**1,162**	**1,000**

Engineering Campaign
Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Engineering Campaign [a]			
Enhanced Surety	41,488	46,421	51,771
Weapon Systems Engineering Assessment Technology	15,453	18,983	23,727
Nuclear Survivability	19,266	21,788	19,504
Enhanced Surveillance	65,596	63,379	54,909
Total, Engineering Campaign	**141,803**	**150,571**	**149,911**

Out-Year Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
Engineering Campaign [a]					
Enhanced Surety	51,771	57,022	54,478	47,882	53,860
Weapon Systems Engineering Assessment Technology	23,727	24,211	24,047	24,115	25,826
Nuclear Survivability	19,504	27,160	28,232	28,971	30,161
Enhanced Surveillance	54,909	56,724	60,140	59,525	62,127
Total, Engineering Campaign	**149,911**	**165,117**	**166,897**	**160,493**	**171,974**

[a] This represents the proposed control level.

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
National Defense Authorization Act for FY 2013 (P.L. 112-239)
The Continuing Appropriations Resolution, 2013 (P.L. 112-175)

Overview

The Engineering Campaign provides modern tools and capabilities to maintain a safe, secure, and effective nuclear weapons stockpile, and enhance nuclear security through defense, nonproliferation, and environmental efforts. The Campaign matures technologies for maintaining the current stockpile, first use in upcoming LEPs, and adapts technologies for follow-on use. It provides the fundamental sustained research, development, and engineering basis for stockpile certification and assessment throughout the entire lifecycle of each weapon. It assesses and improves fielded nuclear and non-nuclear components without further supercritical testing, and increases the NNSA's ability to predict the response of weapon components and subsystems to aging and to normal, abnormal, and hostile environments. As described in the 2010 *Nuclear Posture Review Report*, the Engineering Campaign directly supports strengthening the science, technology, and engineering (ST&E) base maturing advanced technologies to improve weapons surety, to qualify weapon components and certify weapons without subcritical testing, and to provide annual stockpile assessments through weapons surveillance.

The Engineering Campaign funding, allocated through four subprograms, supports first user Life Extension Program (LEP) and provides for adaptation to subsequent LEPs, as well as for alterations (Alts) and modifications (Mods) to the enduring stockpile. The four subprograms – Enhanced Surety, Weapons Systems Engineering Assessment Technology, Nuclear Survivability, and Enhanced Surveillance – contribute directly to the NNSA Strategic Plan Goal to "strengthen the science, technology, and engineering base." Also, a number of select initiatives within the 2011 NNSA Strategic Plan rely on the Engineering Campaign subprograms. These include:

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

The Department's Engineering Campaign FY 2014 Request for $149.9M is a slight decrease from the FY 2013 Annualized CR level of $150.6M. Some subprogram increases include provision for technology maturation for the creation, evolution and enablement of stockpile surety enhancement options to support a multi-system stockpile and current and future insertion requirements, including the B61-12 LEP and the W87/88-1 LEP. The FY 2014 Request also emphasizes the need to strengthen and maintain a base capability for sustaining and securing the stockpile through continued development of enhanced weapons surety, 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 the nuclear weapons stockpile.

The FY 2014 Request also reflects a $6.6M reduction for anticipated management efficiency and workforce restructuring reductions for Weapons Activities. Studies to identify the specific program effects are underway. When these studies are completed, NNSA will work with Congress to make any necessary program or funding level adjustments.

Program Accomplishments and Milestones

In the prior appropriation year, FY 2012, 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) Developed assessment technologies and acquired material response data for normal and abnormal environments that will be used to qualify and certify current and future alterations (Alts), modifications (Mods), and life extension programs (LEPs).
(3) Used ion radiation to simulate and evaluate neutron damage in compound semiconductor electronics for the Qualification Alternatives to the Sandia Pulsed Reactor Project.
(4) Characterized the aging behavior of legacy and new materials and components.

Program Planning and Management

The Engineering Campaign aligns its work and funding priorities with NNSA and DOE strategic objectives, the Directed Stockpile Work (DSW) program, other Campaigns as well as Site Stewardship and Nuclear Programs. Clear alignment with NNSA and DOE strategic objectives is attained by engaging in in-depth, semi-annual reviews of Engineering Campaign work across the Future Years Nuclear Security Program (FYNSP). This process enables effective resource allocations to fund the highest priority work using an enterprise solution approach amongst Defense Programs.

Strategic Management

The Engineering Campaign is the driver for discovery, maturation, and initial application of advanced engineering required to maintain the nuclear weapons stockpile and prevent its unauthorized use. The Engineering Campaign invests in the development of the advanced materials, technologies, and engineering assessment tools 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 programs 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 requirements. 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 ladder to the point where components are ready for insertion into a subsystem or system where responsibility is transitioned to the DSW program. Engineering Campaign scope gives priority to technology developments required to support the activities outlined in the CMF.

The Engineering Campaign activities are closely integrated with DSW, Advanced Simulation and Computing (ASC), Readiness and Science Campaigns, and Site Stewardship and Nuclear Programs.

Major Outyear Priorities and Assumptions

Outyear funding levels for the Engineering Campaign total $664,481,000 for FY 2015 through FY 2018 and reflect programmatic requirements of the nuclear weapons stockpile as well as specific experiments and tests and maturation of components that support the B61 LEP, the W78/88-1 Study, and the W78/88-1 LEP.

The Engineering Campaign priorities reflect continued efforts to assess and improve the safety, security, reliability, and performance of the nuclear weapons stockpile. This involves:

- developing and maturing viable technology insertion options to improve safety, security, and use control;
- providing scientific understanding, computational, and experimental capability to develop and validate computational models and qualify weapon systems in normal and abnormal environments;
- providing the tools and technologies needed to design and qualify components and subsystems to meet requirements for hostile environments; and
- developing and maturing predictive aging models and lifetime assessments.

Program Goals and Funding

The goal of the Engineering Campaign is to better assess and improve the safety, security, reliability, and performance of the nuclear explosive package and non-nuclear components throughout the lifetime of a nuclear weapon without further supercritical nuclear explosive testing. Additionally, the Engineering Campaign maximizes confidence in the design of all components and subsystems and increases the ability to predict their response to external stimuli (large thermal, mechanical, and combined forces and extremely high radiation fields) and the effects of aging. The Engineering Campaign also develops essential engineering capabilities and infrastructure and matures technologies to reduce the risk of deliberate or accidental unauthorized nuclear yield.

The program funding profile is primarily driven by anticipated changes in the planned Enhanced Surety workload, which is in turn driven by the DSW and LEP schedules. The profile for Enhanced Surety reflects the cyclic nature of the technology maturation schedule that enables the availability of surety components in time to meet LEP deliverables other priorities.

The Enhanced Surety subprogram goals focus on enhancing the surety for the nuclear weapons stockpile in three core areas: Advanced Safety, Advanced Use Control/Denial, and Integrated Surety Solutions. This includes identifying and validating enhanced surety system concepts and maturing the associated enabling technologies in alignment with stockpile insertion opportunities. This includes multi-point safety options and integrated surety solutions (ISS) through technology maturation. These technologies must be demonstrated in realistic and relevant environments before they can be

considered viable for weapon system Alts and Mods. The Enhanced Surety subprogram also contributes to the continued development and maintenance of the Joint Integrated Lifecycle Surety (JILS) risk assessment capability. By enabling comparison of relative benefits associated with proposed stockpile surety improvement options, JILS will support cost effective implementation of stockpile surety enhancements.

The Weapon Systems Engineering Assessment Technology (WSEAT) subprogram goals focus on materials research and experimental validation. Materials research requires development of a methodology that integrates experimental capability development with modeling and simulation within an engineering-focused Quantification of Margins and Uncertainties (QMU) framework to support stockpile qualification. Experimental validation entails developing experimental techniques and providing robust experimental data to validate models for predicting weapon performance and safety. It also includes developing test methodologies and deploying diagnostics that enable quantification of weapon response to realistic environments. The data sets include 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.

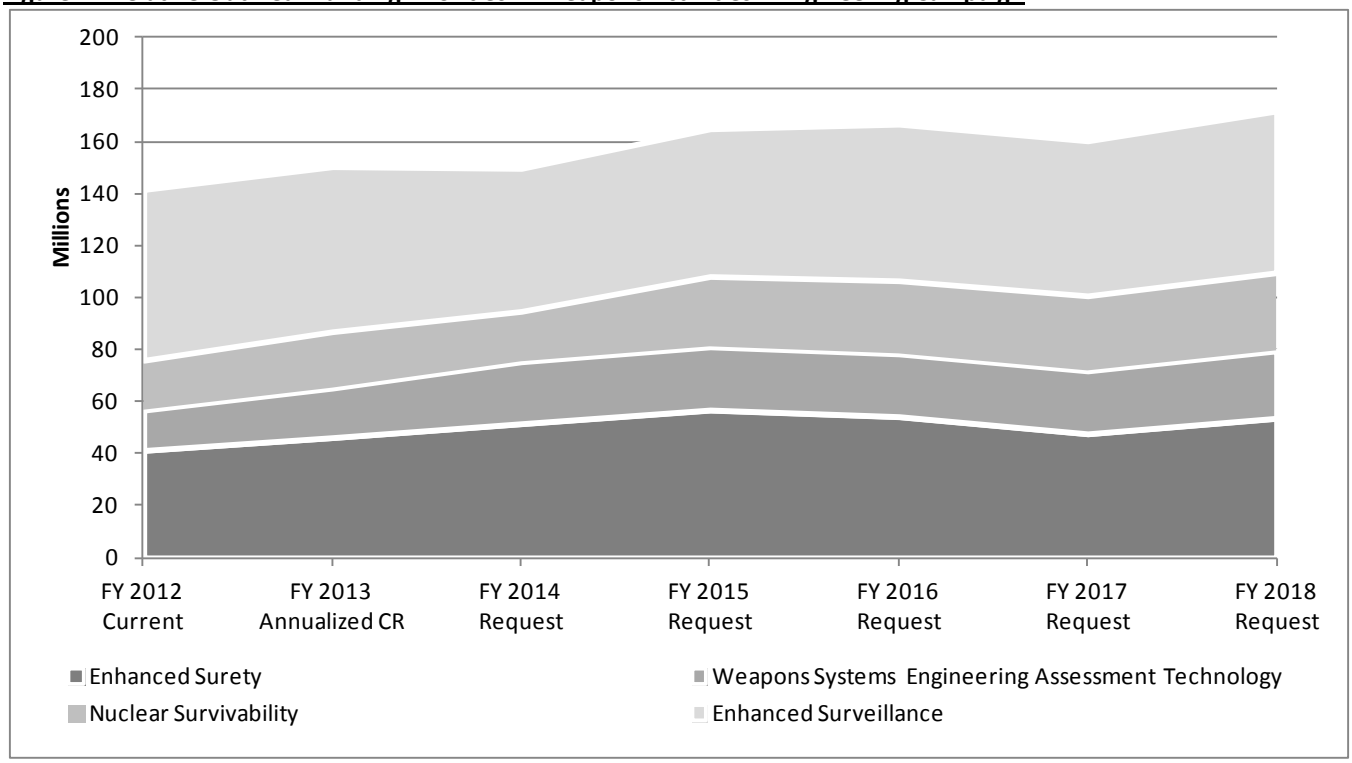
The Nuclear Survivability subprogram goals support the stockpile by developing and validating the experimental tools needed to assess the effectiveness of weapon response to hostile environments and analyze the survivability of weapon systems. This includes developing the modeling and experimentation capabilities to conduct component, subsystem, and system level testing for radiation effects; generating experimental data to validate models in computational tools; evaluating new and evolving stockpile candidate technologies for radiation hardness capabilities; studying radiation hardening phenomena for the enduring stockpile; and improving laboratory radiation sources and diagnostics to support code validation and hardware qualification experiments.

The Enhanced Surveillance subprogram goals include early detection of defects and potential changes in component or material behavior, timely determination of when (or if) components need to be replaced, and the enhancement of the technical basis relative to the safety, use control, and dependability of components in the stockpile. This includes evaluating new and existing materials used in weapons refurbishment; and developing and delivering new analytical methods, tools, modeling, and diagnostics (including non-destructive evaluation techniques) for less invasive and more cost effective component and material surveillance. The subprogram also updates results on weapons aging for component and material lifetime assessments to support weapon refurbishment decisions. These lifetime assessments include both the experimental accelerated aging tests and assessment of aged components from the stockpile including the computational verification of component and material aging. This information is used for material, component and systems that are used to assess the current and future state of weapons in the enduring stockpile.

Performance Measures

Performance Goal (Measure)	**Technology Maturation Capabilities** - The annual progress towards the maturation of technologies and stockpile assessment capabilities as measured by the number of deliverables in the implementation plans completed.		
Fiscal Year	**2012**	**2013**	**2014**
Target	21 deliverables	21 deliverables	20 deliverables
Result	**Met** - 21		
Endpoint Target	Until the last nuclear weapon system in the stockpile is dismantled, NNSA will continue to mature technologies and stockpile assessment capabilities to support Directed Stockpile Work nuclear weapons refurbishment and assessment activities.		

Figure 1: Relative Out-Year Funding Priorities in Weapons Activities – Engineering Campaign



Explanation of Funding and/or Program Changes

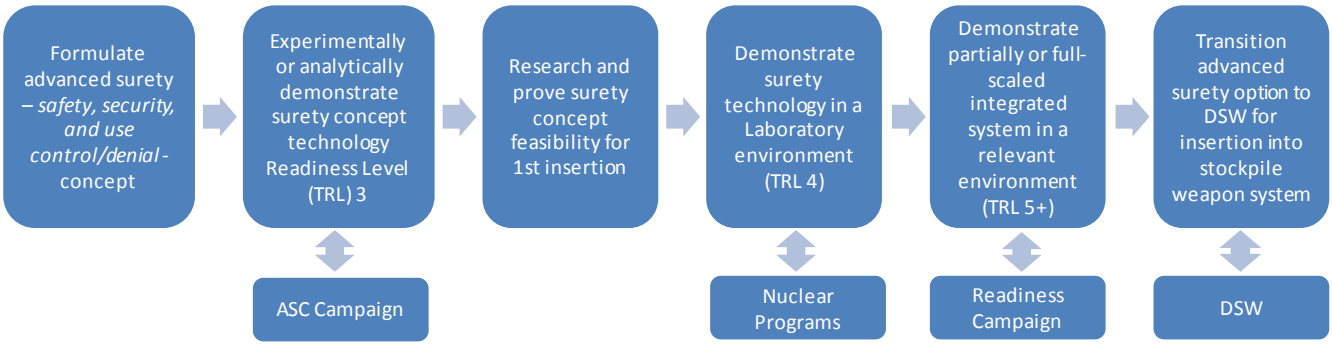
	(Dollars in Thousands)		
	FY 2013 Annualized CR	FY 2014 Request	FY 2014 Request vs. FY 2013 Annualized CR
Engineering Campaign			
Enhanced Surety	**46,421**	**51,771**	**+5,350**
The increase reflects a realignment of funding to evolve base capability requirements for the creation, evolution and enablement of stockpile surety enhancement options, specifically including multi-point safety options planned for LEPs and the application of integrated surety solutions (ISS) to stockpile venues beyond NNSA transportation. The request includes support for developing and maintaining the JILS risk assessment capability and maturation related to future insertions such as the B61 LEP and W78/88-1 Study. This requested increase is also a net after a reduction for anticipated management efficiency and workforce restructuring reductions for Weapons Activities.			
Weapons Systems Engineering Assessment Technology	**18,983**	**23,727**	**+4,744**
The increase reflects a realignment of funding to maintain the base capability needed for validation-related testing required for future refurbishments and current stockpile assessments, as well as specific testing related to future insertions such as the B61 LEP and W78/88-1 Study. This requested increase is also a net after a reduction for anticipated management efficiency and workforce restructuring reductions for Weapons Activities.			
Nuclear Survivability	**21,788**	**19,504**	**-2,284**
The decrease reflects a realignment of funding to maintain the base capability for environmental assessments replacing radiation hardened technologies for nuclear survivability, and environmental testing related to future insertions such as the B61 LEP and W78/88-1 as well as a reduction for anticipated management efficiency and workforce restructuring reductions for Weapons Activities.			
Enhanced Surveillance	**63,379**	**54,909**	**-8,470**
The decrease reflects a realignment of funding to maintain base capability, which will result in a manageable decrease in program scope for Component Material Evaluation (CME), lifetimes, and annual assessment although at a reduced rate of completion. Although delayed, the data from these programs will still allow for well-timed dissemination of information considered necessary to support decisions for activities associated with current Alts and Mods. The request also provides CME related support to future insertions such			

	(Dollars in Thousands)		
	FY 2013 Annualized CR	FY 2014 Request	FY 2014 Request vs. FY 2013 Annualized CR
as the B61 LEP and W78/88-1 Study. The decrease also accounts for a reduction for anticipated management efficiency and workforce restructuring reductions for Weapons Activities.			
Total Funding Change, Engineering Campaign	**150,571**	**149,911**	**-660**

Enhanced Surety
Overview

The Enhanced Surety subprogram supports President Obama's vision[a] that "We must ensure that terrorists never acquire a nuclear weapon. This is the most immediate and extreme threat to global security." Enhanced Surety is dedicated to preventing unauthorized use of a U.S. nuclear weapon, and supports the "high standard for the safety and security of U.S. nuclear weapons," as stated in the 2010 *Nuclear Posture Review Report*. Enhanced Surety creates, develops, and matures advanced safety, security, and use-control/denial technologies for stockpile insertion at the earliest opportunity, to minimize the probability of an accidental nuclear explosion and, in the unlikely event that unauthorized access is gained, reduce the risk of an unauthorized nuclear yield to the lowest possible level. Enhanced Surety seeks advances in leading-edge technology in these areas. In addition, the subprogram uses the JILS surety risk assessment capability to identify the most cost-effective applications of these surety technologies, allowing program and weapon system managers to make better informed implementation decisions regarding stockpile surety improvement options.

Sequence and Integration Points



Benefits

- Develops advanced initiation and use-control/denial options, as well as Integrated Surety Solutions (ISS) for the next insertion opportunity into a stockpile weapon system.
- Achieves new, improved levels of control/denial of unauthorized use and integrates these modern technology advancements within the scope of nuclear weapons safety and security, thus better protecting the American people from hostile nuclear weapon use.

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 …maturing advanced technologies to increase weapons surety […] certifying weapons without nuclear testing..." Further, this subprogram supports the 2011 NNSA Strategic Plan initiative to "incorporate appropriate modern safety and security features into existing warhead systems, consistent with the direction in the Nuclear Posture Review report." Finally, the subprogram identifies and demonstrates ISS concepts with the potential to leverage existing weapon and physical security capabilities to improve stockpile surety. Such concepts may provide cost effective alternatives or complements to internal surety improvements implemented through weapon alterations or modifications.

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

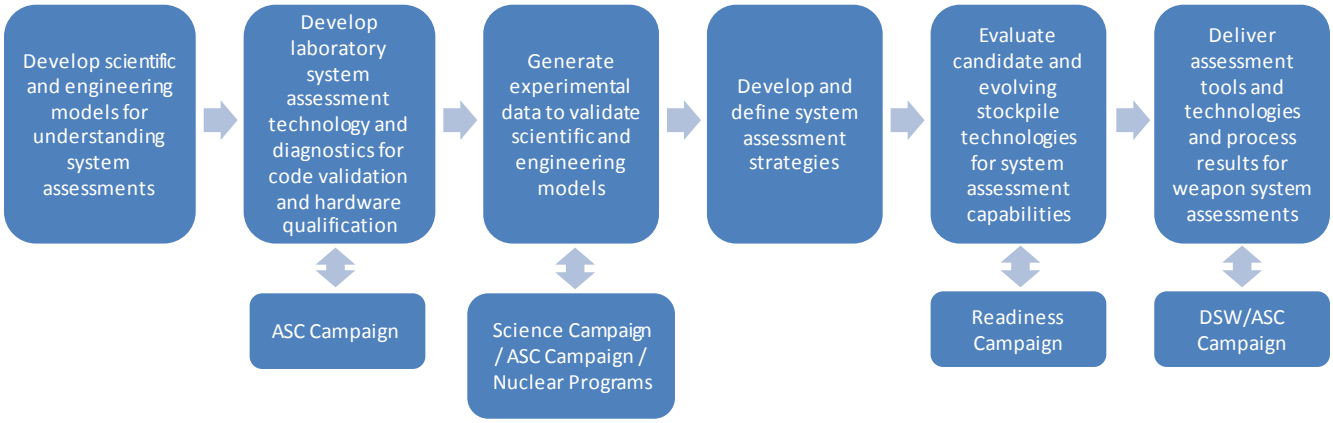
Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• Conducted 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). • Further matured an initial Los Alamos National Laboratory (LANL) MPS option to TRL-3+. • Demonstrated the advanced stronglink to TRL-3 by analysis and modeling. • Developed a formal process to evaluate safety and security technologies in various venues. • Demonstrated the highest priority device to TRL-4 (key elements demonstrated in a controlled environment). • Matured technologies for multi-venue ISS implementation systems to TRL-3.	**41,488**
FY 2013	• Deploy elements of a formal process to evaluate safety and security technologies in various venues. • Continue compatibility testing to ensure that the Lawrence Livermore National Laboratory (LLNL) MPS concept is available for first insertion opportunities. • Demonstrate the advanced stronglink to TRL-4 by testing and evaluation. • Develop the highest priority device to TRL-5 (key elements demonstrated in relevant environments). • Demonstrate the next generation surety device to TRL-3+. • Mature technologies for multi-venue ISS implementation to TRL-4. • Continue to mature and apply the Joint Integrated Lifecycle Surety (JILS) tool to additional DOE and DoD venues.	**46,421**
FY 2014	• Mature the highest priority LLNL MPS concept to TRL-3. • Demonstrate the advanced stronglink to TRL-4+. • Transition the highest priority device from Enhanced Surety subprogram to DSW. • Develop the next generation surety device to TRL-4. • Mature technologies for multi-venue ISS implementation for Air Force systems to TRL-4+. • Continue to apply the JILS tool to additional DOE and DoD venues. • Develop B61 LEP safety and surety options. • Develop surety concepts for possible insertion into the W78/88-1.	**51,771**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Continue to apply the Joint Integrated Lifecycle Surety (JILS) tool to DOE and DoD venues. • Mature the highest priority LLNL MPS concept to TRL-3+. • Transition the advanced stronglink from Enhanced Surety subprogram to DSW. • Demonstrate the next generation surety device by testing and evaluation. • Test and evaluate technologies for multi-venue ISS implementation for Air Force systems. • Continue development of B61 LEP safety and surety options. • Mature surety capabilities for insertion into the W78/88-1.	**57,022** **54,478** **47,882** **53,860**

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 the immediate needs of DSW and ASC customers (e.g., current Alts and Mods; stockpile assessments; and open significant finding investigations (SFIs).

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 needed throughout the entire lifecycle of each weapon. WSEAT also contributes directly to the NNSA Strategic Plan Goal to "strengthen the science, technology, and engineering base."

Funding and Activity Schedule

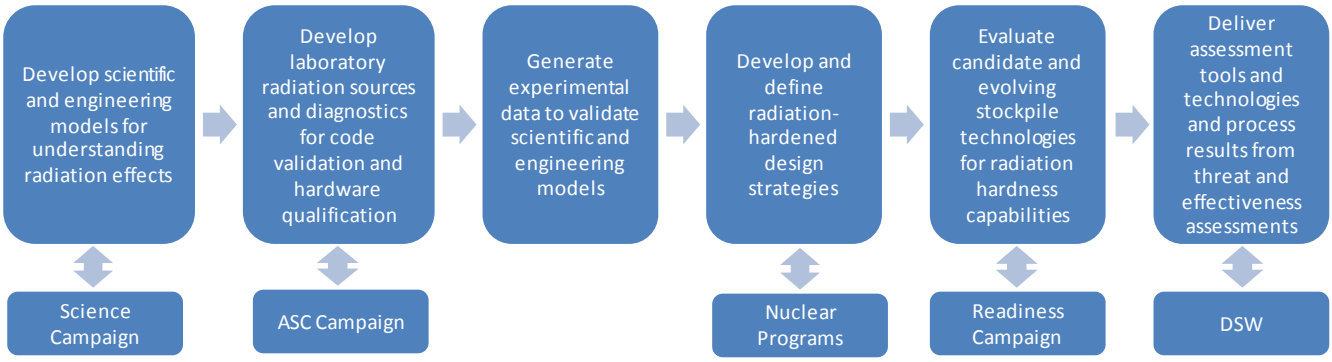
Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• Completed fire model validation with data sets for spatially resolved thermal radiation emission and absorption loads in a fire for postulated environments. • Demonstrated hybrid (computational/experimental) structural response modeling for normal aeromechanical loading environments for relevant environments and responses. • Continued to develop non-intrusive instrumentation. • Developed thermal and mechanical testing capabilities for high explosives and polymers supporting primary structural response material model development. • Quantified uncertainties and assessed margins for an air-carried primary subassembly in normal environments.	**15,453**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	• Developed reentry system primary subassembly test.	
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 Explosives (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	• Validate test capability and instrumentation to quantify weather effect on re-entry body/re-entry vehicle (RB/RV) flight bodies using ground test facilities. • Develop a RB/RV system-scale multi-axis hybrid shaker test capability for shock and vibration testing of RB/RV and for contact fuze performance qualification margins. • Characterize Lightning Arrestor Connector (LAC) response to lightning for LAC qualification and predictive performance. • Validate capability for stress state characterization of high explosive systems for all STS environments. • Incorporate insensitive high explosive failure into material models. • Begin development of polymer material models that incorporate failure mechanisms. • Quantify uncertainties and assess margins for a reentry system primary in normal environments.	**23,727**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Continue to validate test capability and instrumentation to quantify weather effect on re-entry body/re-entry vehicle (RB/RV) flight bodies using ground test facilities. • Continue to develop a RB/RV system-scale multi-axis hybrid shaker test capability for shock and vibration testing of RB/RV and for contact fuze performance qualification margins. • Continue to characterize Lightening Arrestor Connector (LAC) response to lightning for LAC qualification and predictive performance. • Continue to validate capability for stress state characterization of high explosive systems for all STS environments. • Continue to incorporate insensitive high explosive failure into material models. • Continue development of polymer material models that incorporate failure mechanisms. • Continue to quantify uncertainties and assess margins for a reentry system primary in normal and abnormal environments.	**24,211** **24,047** **24,115** **25,826**

Nuclear Survivability
Overview

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

Sequence and Integration Points



Benefits

- 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 support of radiation-hardened components development.
- 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 needed throughout the entire lifecycle of each weapon.

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 X-ray, 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). NNSA laboratories utilize appropriately hardened private sector technologies in design where possible, but must in many cases apply lab-developed technology to achieve adequate reentry system hardness.

Funding and Activity Schedule

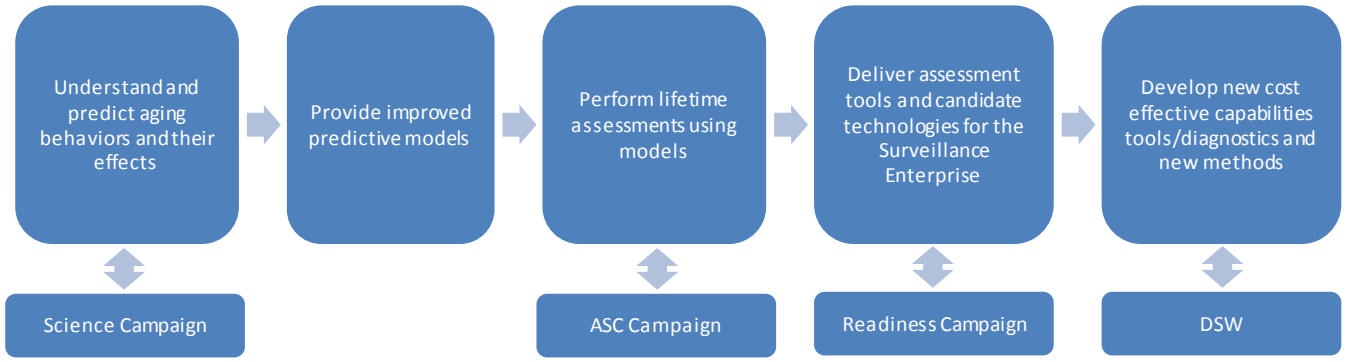
Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• Delivered, through the Qualification Alternatives to Sandia Pulse Reactor (QASPR) program, the model-based qualification methodology for silicon bipolar junction transistor technology for legacy warhead systems in hostile environments. • Completed initial analyses of components and subsystems to identify and prioritize needed follow-on intrinsic radiation (InRad) susceptibility research and development and to quantify exposure levels external to the weapon. • Supported the material down-select for Arming, Fuzing and Firing (AF&F) replacement. • Delivered validation data for impulse generation models for representative reentry system materials. • Demonstrated an advanced Terminal Protection Device (TPD) for the AF&F/cable interface.	**19,266**
FY 2013	• Conduct initial validation, through the QASPR program, of the qualification methodology for heterojunction bipolar transistor (HBT) technology using atomistic damage models. • Deliver the second and third high-fidelity sources to investigate intrinsic radiation effects at war reserve-like conditions for current LEPs, modifications 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 Vehicle Reentry Body systems for updated output models.	**21,788**
FY 2014	• Complete validation, through the QASPR program, of the qualification methodology for compound semiconductor HBT technology. • Characterize and validate the second and third high-fidelity sources to investigate intrinsic radiation effects at war reserve-like conditions. • Deliver validation data for ELDRS scientific models. • Implement robust and reliable transfer of energy-deposition data from radiation transport codes to structural and mechanical codes for thermo-mechanical shock and thermo-structural shock. • Deliver scalable hardening techniques for Total Ionizing Dose 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. • Conduct radiation effects environmental testing for the B61-12. • Deliver validation data for impulse generation models relevant to the W78/88-1 study. • Deliver data to validate models for System-Generated Electro-Magnetic Pulse (SGEMP) relevant to the W78/88-1 Study.	**19,504**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Release validation data on required weapon systems internal and external InRad environments. • Complete delivery of validation of qualification-level device and circuit models for silicon transistor technology.	**27,160** **28,232** **28,971** **30,161**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	• Deliver validation data for qualification-level device and circuit models for compound semiconductor HBTs and circuits with Uncertainty Quantification. • Scalable total ionizing dose hardening techniques and evaluation of dose-rate upset in 180-nm Silicon on Insulator transistor technologies. • Acquire Single Event Effects data on relevant advanced technologies. • Collect experimental model validation data for opto-electronic technologies and deliver validation data for electro-optic device response models. • Deliver radiation induced conductivity data on dielectrics in advanced electronics in support of model development. • Deliver validation data on Internal EMP for simplified three dimensional (3D) tests of boxed electronics. • Complete radiation effects environmental testing for the B61-12. • Update eRedbook with added suite of threat models relevant to the W78/88-1 LEP. • Deliver cavity SGEMP validation data to probe peak-pressure response for a 3D test cavity relevant to the W78/88-1 Study. • Evaluate impulse models for composite materials and plan experiments to fill in data gaps to deliver validation data for impulse generation models relevant to the W78/88-1 LEP.	

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

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.
- Provides lifetime and compatibility assessments on reuse of existing materials and components and/or new materials in support of potential refurbishment of weapons. Lifetime assessments include the experimental accelerated aging tests, assessment of aged components from the stockpile, and computational verification of component and material aging.
- 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.

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, […] 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 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), and lifetime estimates. The ES 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 2012	• Completed an Enhanced Surveillance stockpile aging and lifetime assessment report to inform annual stockpile decisions on annual assessment, significant finding investigations (SFIs) and LEPs. • Updated the Canned Sub Assembly (CSA) failure criteria based on modern performance code computations. • Updated the pit lifetimes using the latest ASC baseline. • Provided assessment results for individual and cumulative physics performance effects of various materials and component aging effects. • Reported the status of CSA response to aging features. • Delivered a Weapon Evaluation Test Laboratory (WETL) Systems Tester.	**65,596**
FY 2013	• Complete an Enhanced Surveillance stockpile aging and lifetime assessment report to inform stockpile decisions on annual assessment and SFIs. • Provide the assessment results from the stack-up tests to inform stockpile decisions. • Establish initial nuclear explosive package (NEP) integrated lifetimes. • Deliver and qualify a WETL Systems Tester. • Demonstrate the "next generation" Photonic Doppler Velocimetry at TRL 6. • Conduct a comprehensive science based component and material evaluation (CME) program for selected components.	**63,379**
FY 2014	• Complete annual Enhanced Surveillance stockpile aging and lifetime assessment report to inform stockpile decisions on annual assessment, SFIs and LEPs. • Update NEP component lifetimes. • Update lifetime/aging assessment for certain non-nuclear components. • Deploy next generation predictive capabilities for NEP and nonnuclear components and materials to support assessment and certification. • Continue the comprehensive science based component and material evaluation (CME) program for selected components. • Deploy next suite of Gas Transfer System (GTS) diagnostics for surveillance. • Develop processes for the use of accelerated aging relative to IHE characterization for the B61-12. • Develop pit and CSA lifetime aging assessment models as part of the W78/88-1 Study.	**54,909**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Complete annual Enhanced Surveillance stockpile aging and lifetime assessment report to inform stockpile decisions on annual assessments and SFIs. • Update the latest NEP component lifetimes for the B61, W76, W78, W80 (FY 2016), W87 (FY 2018) and W88. • Continue to demonstrate a comprehensive science-based CME program for selected components. • Complete initial aging and compatibility assessment of newly remanufactured triamino trinitrobenzene (TATB) and LLM-105. • Update assessments for the components associated with the W78 (FY 2016) and W88 (FY 2017).	**56,724** **60,140** **59,525** **62,127**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	• Support transformation of the weapons stockpile surveillance program to enable detection of initial design and production defects for limited life component exchanges, materials aging defects and predictive performance trends for the enduring stockpile. • Continue developing processes for the use of accelerated aging relative to IHE characterization for the B61-12. • Continue pit and CSA lifetime aging assessment modeling in support of the W78/88-1 LEP (FY16).	

Supporting Information

Capital Operating Expenses[a]

Capital Operating Expenses Summary

(Dollars in Thousands)

	FY 2012 Enacted	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Capital Operating Expenses				
General Plant Projects	66	66	67	68
Capital Equipment	965	965	986	1,008
Total, Capital Operating Expenses	**1,031**	**1,031**	**1,053**	**1,076**

Outyear Capital Operating Expenses Summary

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
Capital Operating Expenses					
General Plant Projects	68	69	71	73	75
Capital Equipment	1008	1,030	1,053	1,076	1,100
Total, Capital Operating Expenses	**1,076**	**1,099**	**1,124**	**1,149**	**1,175**

[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.

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

(Dollars in Thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Inertial Confinement Fusion Ignition and High Yield [a]			
Ignition	109,888	84,172	80,245
Support of Other Stockpile Programs	0	14,817	15,001
NIF Diagnostics, Cryogenics and Experimental Support	85,654	81,942	0
Diagnostics, Cryogenics and Experimental Support	0	0	59,897
Pulsed Power Inertial Confinement Fusion	4,997	6,044	5,024
Joint Program in High Energy Density Laboratory Plasmas	9,100	8,334	8,198
Facility Operations and Target Production	264,845	269,691	232,678
Total, Inertial Confinement Fusion Ignition and High Yield Campaign	**474,484**	**465,000**	**401,043**

Out-Year Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
Inertial Confinement Fusion Ignition and High Yield [a]					
Ignition	80,245	73,638	75,282	76,762	78,199
Support of Other Stockpile Programs	15,001	17,358	17,677	17,991	18,501
Diagnostics, Cryogenics and Experimental Support	59,897	56,835	54,541	50,569	47,145
Pulsed Power Inertial Confinement Fusion	5,024	5,676	5,844	5,919	6,007
Joint Program in High Energy Density Laboratory Plasmas	8,198	9,498	9,498	9,455	9,447
Facility Operations and Target Production	232,678	204,836	201,310	193,245	186,328
Total, Inertial Confinement Fusion Ignition and High Yield Campaign	**401,043**	**367,841**	**364,152**	**353,941**	**345,627**

[a] This represents the proposed control level.

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
National Defense Authorization Act for FY 2013 (P.L. 112-239)
The Continuing Appropriations Resolution, 2013 (P.L. 112-175)

Overview

The Inertial Confinement Fusion Ignition and High Yield (ICF) Campaign supports the U.S. Department of Energy's (DOE) security goal by providing scientific understanding and experimental capabilities in high-energy density (HED) physics necessary to maintain a safe, secure, and reliable nuclear weapons stockpile without underground testing. It supports stockpile assessment and certification and the Department's security mission. Science-based weapons assessments and certification require advanced experimental capabilities to validate simulations of nuclear weapon performance, understand properties of materials that will be used in the future stockpile, and strengthen scientific models for the boost process occurring in stockpile primaries. The ICF Campaign provides these capabilities through the development and use of advanced experimental and theoretical tools and techniques, including state-of-the-art laser and pulsed power facilities for both ignition and non-ignition HED research and advanced simulation codes. The demonstration and application of ignition and thermonuclear burn in the laboratory is a major goal for the National Nuclear Security Administration (NNSA) and the DOE. The achievement of ignition and its use for the Stockpile Stewardship Program (SSP) is a grand scientific challenge requiring a consistent, technically sound effort. Initial ignition efforts have shown physics unknowns and technical complexities that 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.

The Department requests $401,043,000 in FY 2014 for the ICF Campaign, a $63,957,000 (13.8%) decrease from the FY 2013 Annualized CR level.

Since submission of the FY 2013 Congressional Budget Request, funds from adjustments due to indirect rate changes at the Lawrence Livermore National Laboratory (LLNL) were proposed to be moved to Readiness in Technical Base and Facilities at LLNL for the National Ignition Facility (NIF) to match the convention for facility maintenance at the site.[a] In FY 2014, this funding will be moved to Enterprise Infrastructure in the Site Stewardship funding line and will provide a portion of the base operations and maintenance funding for the NIF in the amount of $113M. The funding in Enterprise Infrastructure will support base operations such as: facilities management; maintenance; utilities; environment, safety, and health; emergency operations; waste management; development and maintenance of the authorization basis; and, National Environmental Policy Act activities. The FY 2014 Request reduces the level of facility operations at the NIF in the ICF campaign and eliminates support for conduct of experiments by external users at NIF and Z. External users of the major HED facilities will now be directly charged for experimental time. Omega is the HED facility for experimental time for NNSA's pipeline academic programs. Finally, the requested amount for the ICF Program reflects a $17.6 million reduction for anticipated management efficiency and workforce restructuring reductions goals for Weapons Activities. Studies to identify the specific program effects are underway. When these studies are completed, NNSA will work with Congress to make any necessary program or funding level adjustments.

The resulting FY 2014 ICF Program supports efforts in ignition and alternate ignition concepts with the continued strong emphasis on HED weapons experimental support and development of advanced capabilities. Funding for non-ignition research in support of stockpile science and near-term stockpile needs resumed in FY 2013 in the Support of Other Stockpile Programs subprogram. This leverages ICF's expertise, providing additional support for the HED weapons efforts and NNSA's broader SSP needs as outlined in the Predictive Capability Framework (PCF).[b] In FY 2014, ongoing efforts toward ignition with the Indirect Drive approach, and with alternate ignition concepts, Polar Direct Drive and Magnetically-Driven Implosions, will continue. Development of a detailed physics understanding will be used to improve the designs in concert with the development of alternative ignition concepts as described in the Path Forward document

[a] In FY 2013, the Self-Constructed Asset Pool (SCAP) rate for the NIF at LLNL was eliminated, increasing the indirect rate and the funds needed to operate at the same level of activity at the NIF.

[b] The Predictive Capability Framework (PCF) is described in the *FY 2012 Stockpile Stewardship and Management Plan.*

submitted to Congress. Along with integrated experiments, focused experiments will continue to look at the behavior and physics of ignition targets to improve the predictive capability of the simulations and to provide feedback to resolve the outstanding physics questions. This is a discovery-driven, rather than schedule-driven, program that will provide more opportunities for comparison with simulations and feedback to resolve the outstanding physics questions.

NNSA's three major HED facilities, NIF, Omega, and Z, will be operated under their respective governance plans. Reductions in facility operations at the NIF starting in FY 2014 reflect shifting of resources to higher priority efforts within Defense Programs. These reductions will be partially mitigated through prioritization of the most urgent experiments in support of the stockpile, emphasis on lower energy operations that reduce damage to and cost of replacement optics, and continued emphasis on improving operational efficiencies.

The development and deployment of new diagnostics will continue at all HED facilities, but with a slowing of effort in advanced diagnostics for the NIF. The value of the facilities to NNSA's broader missions increases with the quality of the diagnostics used. This is particularly true of the diagnostics used to understand the physics of plasmas involving thermonuclear fuel. Understanding these plasmas is important to predicting the performance and safety of weapons, and historically could be diagnosed only with the limited diagnostics available in underground tests.

The budget supports efforts in ignition, alternate ignition concepts, and HED weapons research at NIF, Omega, and Z. The budget provides $79.0M for operation and utilization of the Z facility at Sandia National Laboratories (SNL). This includes $4.8M in pulsed power fusion, $42.5M in facility operations, and $862K in Diagnostics, Cryogenics and Experimental Support within the ICF Campaign, and $30.9M within the Science Campaign. The ICF budget provides $215.7M for the operations of the NIF and the ICF program at LLNL and $113M is requested for NIF Operations in the Site Stewardship budget. The ICF budget provides $60M for the operations of the Omega Laser Facility and the ICF program at the University of Rochester.

Program Accomplishments and Milestones

The ICF Campaign accomplishments over the last year include: 1) development of new sources for cold x-rays that will enable qualification of components for nuclear hardness and survivability; 2) advances in measurement techniques for burning plasmas that were used by the Science Campaign to validate aspects of models for primary boost; 3) fielding of platforms at Omega and NIF, used to measure the complex hydrodynamic behavior of materials that is a potential concern for Significant Finding Investigations; 4) significant progress in understanding the issues that are limiting the demonstration of ignition at the National Ignition Facility (NIF), including energy coupling to the capsule, symmetry, and mix; 5) progress in indirect drive ignition achieved record areal densities, compression pressure in the hot spot approximately one-half of that needed, and neutron yield a factor of three to ten less than needed for a propagating burn; 6) transition of the NIF to operations under approved Governance Plan, and laser energy of 1.8 megajoules (MJ) demonstrated in the ultraviolet; 7) continued progress in the development of the direct-drive ignition alternative on Omega, including demonstrating ignition-relevant implosion velocities and the highest neutron yields to date at Omega; and 8) progress demonstrated in magnetically-driven implosions by imploding a beryllium liner using a magnetic pulse, and a record x-ray yield of 2.6 MJ produced with a peak power of nearly 400 terawatts (TW) on the Z Facility at SNL.

Program Planning and Management

The ICF Campaign works closely with the Science Campaign, Advanced Simulation and Computing Campaign, and Directed Stockpile Work efforts to coordinate development of resources for stockpile needs. ICF management works to align schedules for ICF capabilities to support the principal stockpile advances described in the PCF. ICF also 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 in support of the PCF and progress towards ignition and addressing near-term and out-year challenges for the SSP.

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 Campaign's suite of HED facilities to support NNSA's goals.

Strategic Management

Principal technical needs for the stockpile are described in the primary and secondary assessment plans. The PCF is used as a tool to schedule needed advances described in these documents in a way that is consistent with the Life Extension Program, annual assessments, and Significant Findings that arise. The ICF campaign ensures that needed capabilities are available on the schedule described by the PCF. The ICF Executives, a group that includes one senior leader from each institution, works with NNSA Program Leadership to develop the objectives and milestones. They are supported by research-area specific working groups that include membership from multiple laboratories. These strategies are managed through program planning, milestones, and negotiated performance measures, including measures that are the responsibilities of multiple sites and occur over multiple years. The ICF Campaign uses external reviews, as appropriate, to provide feedback on the Campaign's direction and progress.

Several factors, internal and external, present the strongest impact to the overall achievement of the program's strategic goals:

- physics uncertainties associated with exploring extreme conditions associated with ignition and HED physics;
- maintaining the right skill mix and the level of excellence within the technical staff, and
- allocation of resources across Defense Programs, including workforce prioritization and management efficiencies.

Physics uncertainties associated with exploring the extreme conditions associated with ignition and HED physics are mitigated through: the use of advanced design capabilities; experiments on NNSA's HED facilities; the development and deployment of advanced optics, target, and diagnostic capabilities; 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

Outyear funding levels for the ICF Campaign total $1,431,561,000 for FY 2015 through FY 2018. The ICF Campaign provides the scientific understanding and experimental capabilities in high-energy density physics that are needed to study matter under extreme conditions (including both ignition and non-ignition) and support science-based weapons assessments and certifications. The priority within the ICF Program is to balance efforts in ignition with the continued strong emphasis on HED weapons research. In the outyears, the trend of decreasing operations funding for the NIF assumes that external users will use up to one-third of facility time and provide additional operational funding for the facility. This will be revisited based on studies and experience gained in FY 2014. The outyears budget also assumes the funding level for the ICF Campaign will be sufficient to provide the advanced experimental capabilities, including experimental platforms, diagnostics, theoretical tools and techniques that are needed to conduct the experiments and the verify codes needed for stockpile assessment and certification.

Program Goals and Funding

The ICF Campaign supports the NNSA and U.S. Department of Energy's strategic objective "Secure Our Nation" by providing scientific understanding and experimental capabilities in high-energy density (HED) physics necessary to maintain a safe, secure, and reliable nuclear weapons stockpile without underground testing. The strategic goals of the ICF Campaign are to: 1) maintain excellence in HED and ignition science to underpin Stockpile Stewardship; 2) provide experimental capabilities to improve codes, models, and scientific understanding required for the improved predictive capability set out in the PCF; 3) develop a burning plasma and a high yield platform for physics applications of ignition, and 4) attract, train, and retain high-quality technical staff that will underpin the future nuclear weapons enterprise. Funding will be adjusted as needed to provide the capabilities required to support the stockpile.

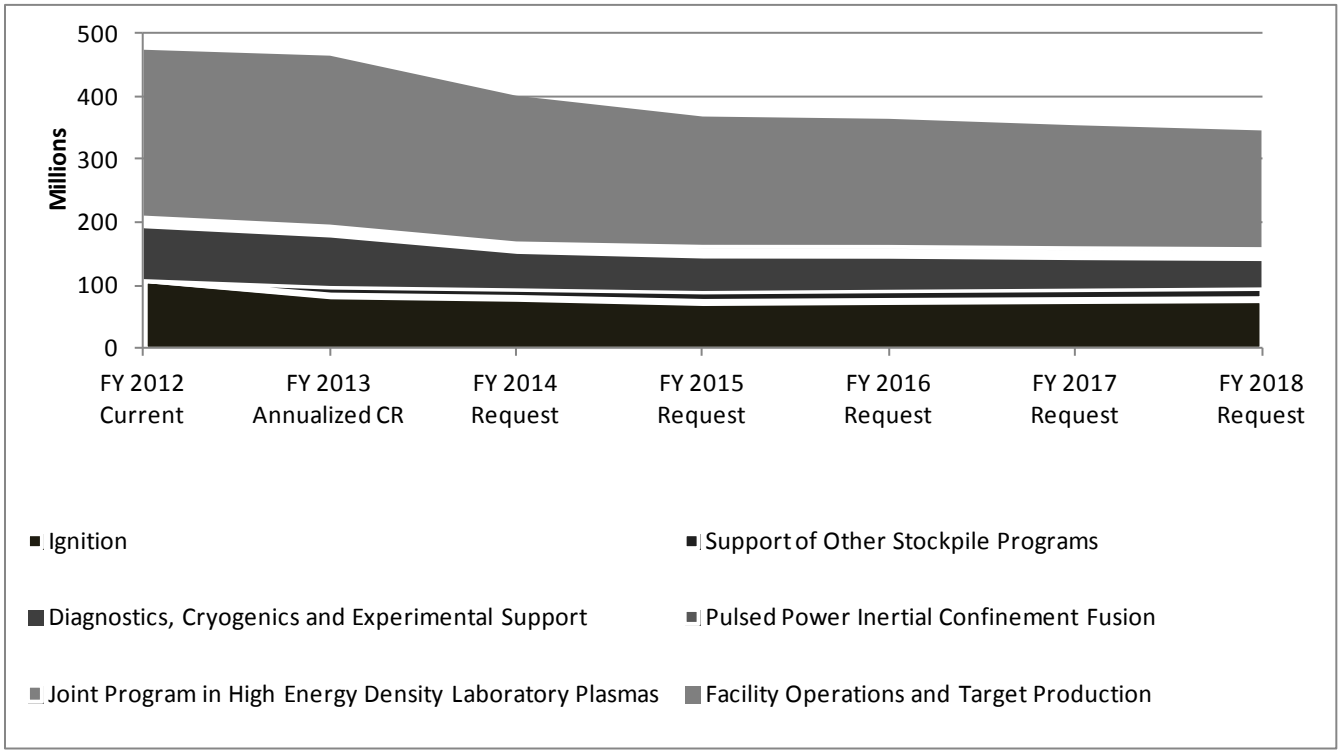
Performance Measures

Performance Goal (Measure)	**Advanced Ignition Demonstration** - Cumulative percentage of progress toward the validation of a concept that meets the requirements for weapons science applications and contributes to energy science and national security.		
Fiscal Year	**2012**	**2013**	**2014**
Target	N/A	20% of progress (cumulative)	30% of progress (cumulative)
Result			
Endpoint Target	By FY 2019, demonstrate an advanced ignition platform that meets the refined requirements of the Stockpile Stewardship Program (SSP).		

Performance Goal (Measure)	**Application of Ignition** - Cumulative percentage of progress in providing data required to support the predictive capability framework burn boost initiative in FY 2018.		
Fiscal Year	**2012**	**2013**	**2014**
Target	N/A	20% of progress (cumulative)	35% of progress (cumulative)
Result			
Endpoint Target	By FY 2018, provide data required to support the Predictive Capability Framework (PCF) burn boost initiative. This activity is performed in collaboration with the Science Campaign.		

Performance Goal (Measure)	**Key Extreme Experiments** - Cumulative percentage of progress towards achievement of key extreme experimental condition of matter needed for predictive capability for nuclear weapons performance.		
Fiscal Year	**2012**	**2013**	**2014**
Target	75% of progress (cumulative)	85% of progress (cumulative)	90% of progress (cumulative)
Result	**Not Met** - 65		
Endpoint Target	By the end of FY 2015, achieve temperature and pressure conditions in the laboratory relevant to weapons' primaries. This activity is performed in collaboration with the Science Campaign.		

Figure 1: Relative Out-Year Funding Priorities in Weapons Activities – Inertial Confinement Fusion Ignition and High Yield Campaign[a]



[a] Diagnostics, Cryogenics and Experimental Support includes funds previously appropriated as NIF Diagnostics, Cryogenics and Experimental Support.

Explanation of Funding and/or Program Changes

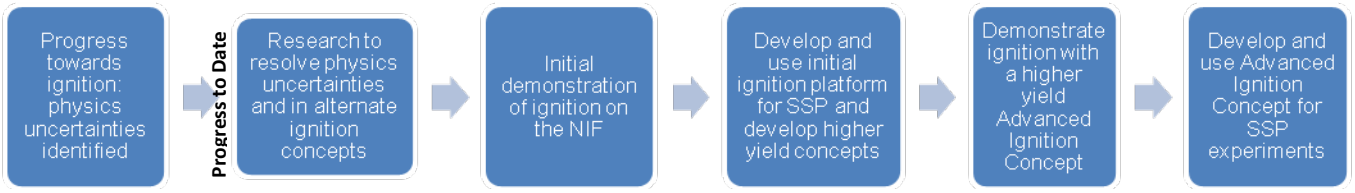
	(Dollars in Thousands)		
	FY 2013 Annualized CR	FY 2014 Request	FY 2014 Request vs. FY 2013 Annualized CR
Inertial Confinement Fusion and High Yield Campaign			
Ignition	**84,172**	**80,245**	**-3,927**
Overall effort in this subprogram decreases slightly with continued emphasis on understanding the physics of ignition. The decrease in this subprogram includes a $3.5 million reduction to account for anticipated management efficiency and workforce prioritization savings goals.			
Support of Other Stockpile Programs	**14,817**	**15,001**	**+184**
The increase is consistent with increasing ICF support for non-ignition high-energy density (HED) physics to provide HED data in support of NNSA's near-term stockpile needs and to meet PCF goals. The requested amount for this subprogram includes a $0.7 million reduction to account for anticipated management efficiency and workforce restructuring reductions.			
Diagnostics, Cryogenics, and Experimental Support	**81,942**	**59,897**	**-22,045**
This decrease slows the pace of effort in development of advanced diagnostics and reduces support for user optics at the NIF, commensurate with reductions in facility operations and an increased proportion of lower energy experiments. The requested amount for this subprogram includes a $2.6 million reduction to account for anticipated management efficiency and workforce restructuring reductions. (Funds in FY 2012-2013 were appropriated under NIF Diagnostics, Cryogenics and Experimental Support.0			
Pulsed Power Inertial Confinement Fusion	**6,044**	**5,024**	**-1,020**
The decrease slows efforts to advance the science of magnetically-driven implosions. The requested amount for this subprogram includes a $0.2 million reduction to account for anticipated management efficiency and workforce restructuring reductions.			
Joint Program in High Energy Density Laboratory Plasmas	**8,334**	**8,198**	**-136**
The slight decrease maintains the level of support for basic HED research, and includes a $0.4 million reduction to account for anticipated management efficiency and workforce restructuring reductions.			

	(Dollars in Thousands)		
	FY 2013 Annualized CR	FY 2014 Request	FY 2014 Request vs. FY 2013 Annualized CR
Facility Operations and Target Production	**269,691**	**232,678**	**-37,013**
Funding supports operations at NIF, Omega, Z, and Trident and target support for experiments. A planned reduction in shot rate at the NIF will be partially mitigated through prioritization of the most urgent experiments in support of the stockpile, emphasis on lower energy operations that reduce damage to and cost of replacement optics, and continued emphasis on improving operational efficiencies. Eliminates support for experiments by external users at NIF and Z. Omega provides experimental time for NNSA's pipeline academic programs. The requested amount for this subprogram includes a $10.2 million reduction to account for anticipated management efficiency and workforce restructuring reductions.			
Total Funding Change, Inertial Confinement Fusion and High Yield Ignition Campaign	**465,000**	**401,043**	**-63,957**

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 to validate the codes needed to assess and certify the stockpile. The demonstration of ignition is a major goal for the NNSA and DOE. The Ignition subprogram supports research activities that optimize prospects for achieving ICF ignition on the NIF and the development and applications of robust ignition, advanced ignition, and burning plasma platforms once ignition is achieved. Experiments on NNSA's HED facilities are supported by detailed theoretical designs and simulations (in 2- and 3-dimensions) of the performance of ignition targets. Ignition target design is closely coupled with the Advanced Simulation and Computing (ASC) and the Science Campaigns. The near-term emphasis is on those activities required to develop a detailed physics understanding to improve ignition designs and to demonstrate ignition on the NIF. In the longer-term, this program will develop advanced ignition concepts that may provide advantages over the current indirect-drive ignition platform, such as higher yield and/or gain.

Sequence



Benefits

- Focuses the research effort to demonstrate thermonuclear ignition in the laboratory and to develop ignition as a tool to address key weapons issues. Achieving ignition and understanding any limitations to the simulation tools are essential parts of meeting DOE's security goals. The demonstration and use of ignition will provide important information to support assessment and certification of the stockpile and will help answer key stockpile questions within the PCF.
- Develops the advanced experimental capabilities that can create and study matter under extreme conditions that approach the high-energy densities found in nuclear explosions. It provides access to ignition conditions that are otherwise unavailable, allowing understanding and validation of an important part of the evolution of a nuclear weapon explosion and provides critical information to validate codes. The Science Campaigns, Directed Stockpile Work (DSW) and other stockpile program elements rely on the capabilities developed in this subprogram to successfully execute their programs.

Funding and Activity Schedule

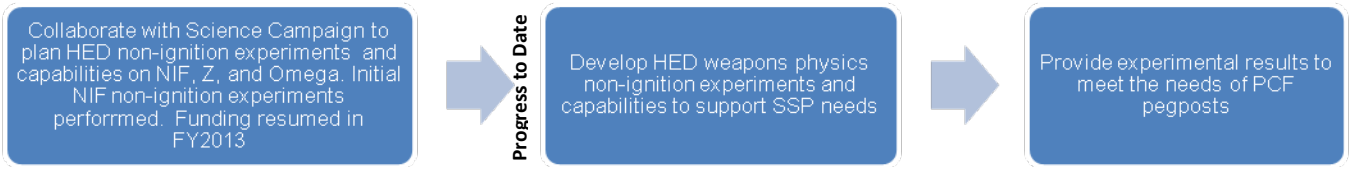
Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• Progressed towards ignition on the NIF with increases in neutron yield and hot spot pressure. Physics issues identified including symmetry, laser-target coupling, and mix. • Experiments performed on Omega and Z to support the development of ignition and its uses including 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. Cryogenic target implosions on Omega produced significant increases in implosion velocity and neutron yield. • Planned vital HED (non-ignition) weapons physics experiments on the NIF and Omega with the Science Campaigns for FY 2013.	**109,888**

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2013	• For all fusion approaches, define the plan and specific goals for scientific and technological activities to be performed in preparation for the FY 2015 review. • Conduct experiments designed to examine scientific and implosion performance issues identified during the National Ignition Campaign (NIC). • Perform experiments on Omega and Z to support the development of ignition and its uses including platform and diagnostic development. Funding for NRL research resumes in this subprogram in FY 2013. • Advanced Ignition Concepts provide the possibility of higher gains or other experimental advantages that provide improved data to meet SSP needs. • 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	• Conduct physics and integrated Deuterium-Tritium (DT) implosion experiments to examine experimental and computational understanding of capsule drive, symmetry, and mix. • Perform experiments on Omega and Z to support the development of ignition and its uses, including platform and diagnostic development. • Perform integrated Polar Drive implosions on the NIF to investigate symmetry control and Laser Plasma Instability (LPI) mitigation. • Conduct integrated cryogenic DT implosions on Omega to establish the predictive basis for NIF-equivalent hydro performance. Validate Polar Drive Advanced Ignition Concept on Omega.	**80,245**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Conduct Progress Review in FY 2015 of all fusion approaches with respect to the program plan defined in FY 2013 and out-year plans for ICF and high yield platforms needs defined in the PCF. • Development of the first ignition platform to support SSP needs. The ignition platform must be repeatable and sufficiently robust such that the effects of minor changes in design can be clearly identified. • Use the first ignition platform to support SSP needs, in particular critical experiments requiring igniting and burning plasmas, in support of the PCF. • Demonstrate one or more Advanced Ignition concepts on the NIF to meet requirements of SSP physics applications of ignition.	**73,638** **75,282** **76,762** **78,199**

Support of Other Stockpile Programs
Overview

Non-ignition experiments using the ICF Campaign's suite of HED facilities are essential to assessing and certifying the stockpile and to meeting DOE's security goals. This subprogram leverages the experience of the ICF-funded researchers to support NNSA's SSP 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, and radiation transport. It includes platform and diagnostic development on NIF, 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 on the capabilities developed in this subprogram to successfully execute their programs.

Sequence



Benefits

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

Funding and Activity Schedule

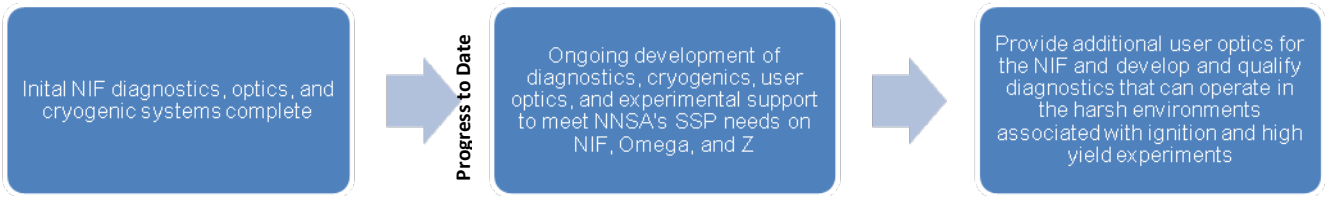
Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• ICF Campaign collaborated with the Science Campaign to develop vital HED (non-ignition) weapons physics experiments on the NIF, Z, and Omega for FY 2013. • Non-ignition HED experiments performed on NIF, Omega, and Z, including Pleiades, DIME, and Materials Strength on NIF. • Activities performed using prior year balances.	**0**
FY 2013	• Research resources previously under Ignition 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, Omega, and Z to provide HED data to support NNSA's SSP needs.	**14,817**
FY 2014	• Continue to provide non-ignition HED data using NIF, Omega, Z, and other facilities to support NNSA's SSP needs. • Develop the experimental and analytical capability to acquire high-pressure material data and develop platforms to validate models of secondary performance and to validate opacity models. • Develop a predictive capability for complex hydrodynamics and to determine aspects of a predictive mix model. • Provide platform and diagnostic capabilities for validating the impact of surety technologies in the future stockpile.	**15,001**

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2015	• Continue to develop platforms for initial experiments to support validation of opacity models; demonstrate platform that can acquire high pressure materials data that supports the PCF. Provide data in support of PCF pegposts.	**17,358**
FY 2016		**17,677**
FY 2017		**17,991**
FY 2018	• Validate models relevant to thermonuclear burn.	**18,501**

Diagnostics, Cryogenics and Experimental Support
(formerly NIF 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, including advanced diagnostics that operate in the harsh ignition environment, and the associated information technology subsystems needed for data acquisition, storage, retrieval, visualization, and analysis. The data generated by these diagnostics provides key information required for ignition and non-ignition SSP experiments. This subprogram 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

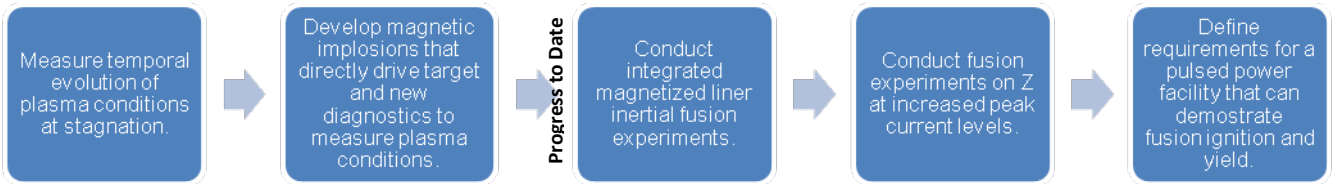
Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• Completed the initial suite of diagnostics required for the NIF ignition campaigns. • The advanced diagnostic effort focused on incorporating new techniques as they were developed and adding new capabilities as required. Pre-conceptual designs proposed in FY 2011 were evaluated and down-selected. • Experimental concepts were tested on Omega. • Developed and activated the optical systems required to produce the spatial beam smoothing needed in ignition experiments and subsequent weapons physics campaigns and the integration and experimental commissioning of the NIF target area. Provided 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. • Continue development and testing of advanced diagnostics on NIF, Omega, and Z, including deployment of x-ray Thomson scattering on Z, and the fourth harmonic probe beam for the OMEGA Extended Performance (EP) Laser and the fast backlighting target positioner on the 60-beam OMEGA Laser. • Development and installation of advanced cryogenic target systems. • Ongoing development and procurement of optical systems and user optics required for supporting user experiments.	**81,942**

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2014	• Continue efforts from FY 2013 to develop and support diagnostic capabilities, cryogenic systems, and user optics at NIF, at a reduced pace commensurate with facility operations. • Continue development and testing of advanced diagnostics on NIF, Omega, and Z, including: prototyping a Compton gamma spectrometer and deploying ultrahigh resolution x-ray spectrometer on the 60-beam OMEGA Laser, deploying a time-resolved krypton spectrometer on Z, and installing scattered light calorimeters, an enhanced collection efficiency x-ray microscope, and a low-energy neutron spectrometer on NIF.	**59,897**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Continue efforts from FY 2014 to develop and support diagnostic capabilities, cryogenic systems, and user optics at NIF, at a reduced pace commensurate with facility operations. • Continue efforts to demonstrate operation of Advanced Radiographic Capability (ARC) at NIF, and to engineer a polar-drive target insertion cryostat for the NIF. • Continue efforts on the NIF advanced diagnostic suite as defined in the FY 2012 Plan, including installing some diagnostics that can operate in the harsh ignition environment. Examples include a mirrored gated x-ray detector and a high resolution gamma ray diagnostic. • Continue development and testing of advanced diagnostics on NIF, Omega, and Z, including: development of the fourth-harmonic probe beam and the Compton gamma spectrometer on NIF, a dedicated fourth-harmonic probe beam on 60-beam OMEGA Laser, and the magnetic recoil spectrometer, gamma reaction and neutron burn history diagnostics for Z.	**56,835** **54,541** **50,569** **47,145**

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 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 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 2012	• New diagnostics (such as neutron and x-ray imaging) used to demonstrate consistent fusion plasma conditions for a variety of applications. • Developed magnetic implosions that directly drive the target.	**4,997**
FY 2013	• Demonstrate initial capability for magnetized and pre-heated fusion experiments. • Conduct first integrated Magnetic Liner Inertial Fusion (MagLIF) experiments. • Develop new and improved diagnostics and techniques to measure the implosion dynamics, magnetic fields, and fuel conditions.	**6,044**
FY 2014	• Conduct initial integrated fusion target experiments and compare results to simulations. Conduct integrated fusion (MagLIF) target experiments with increased laser energy and higher currents and begin scaling study. • Compare accumulated data from magnetically-driven fusion experiments on Z with 3-D radiation magnetohydrodynamic simulations. • Develop an improved experimental and computational understanding of the implosion dynamics and fuel behavior of magnetically-driven implosion.	**5,024**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Review progress of all fusion approaches with respect to the program plan defined at end of FY 2013 and out-year plans for ICF and high yield platforms. • Evaluate fusion performance and stagnation plasma parameters at enhanced drive conditions using cryogenic fuel and compare results with simulations. • Continue to define requirements for a pulsed power facility that can demonstrate robust ignition and high fusion yield.	**5,676** **5,844** **5,919** **6,007**

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 HEDP research that strengthens the Science, Technology, and Engineering base. This subprogram provides support for external users at the Omega Laser Facility through the National Laser Users' Facility (NLUF) Program and a joint solicitation with the Office of Science for HEDLP research to be performed at universities and DOE laboratories. It includes some of the HED-related Stockpile Stewardship Academic Alliances funding and other ICF funded university programs.

Sequence

Benefits

Funds academic programs through a joint solicitation with DOE's Office of Science to steward the study of laboratory HED plasma physics, maintain a cadre of qualified HED researchers, and ongoing development of the next generation of scientists to provide expertise in HED today and qualified stockpile stewards for the future.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• Devoted a portion of experimental time on NIF, Omega, and Z to basic HED science. • Continued support for grants and research centers through JPHEDLP. Eleven university-based research teams performed basic HED science experiments on the Omega Laser Facility through NLUF. • Moved funding for the University of Nevada, Reno to this subprogram. • Conducted Joint NNSA/DOE (OFES) solicitation in support of basic HED research and solicitation for NLUF Program for funding and experimental time on Omega.	**9,100**
FY 2013	• Continue support of High Energy Density Laboratory Plasma research through solicitations to fund individual investigator and research centers activities.	**8,334**
FY 2014	• Continue activities from FY 2013. Omega provides the experimental time for NNSA's pipeline academic programs.	**8,198**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Continue activities from FY 2014 with support for additional research grants in HED plasma physics.	**9,498** **9,498** **9,455** **9,447**

Facility Operations and Target Production
Overview

The operation of NNSA's HED facilities and target production support the goals of the ICF Campaign to meet DOE's National Security needs. This subprogram funds the experimental operations of ICF facilities including NIF, Omega, and Z, to support the research needs of the ICF and Science Campaign's subprograms to meet the stockpile assessment and certification needs. Starting in FY 2014, a portion of facility operations and maintenance funding for the NIF is requested in the Site Stewardship funding line in Enterprise Infrastructure. Now that the NIF is a fully operational facility, the funding in Enterprise Infrastructure will support base operations such as: facilities management; maintenance; utilities; environment, safety, and health; emergency operations; waste management; development and maintenance of the authorization basis; and, National Environmental Policy Act activities. Over half of the ICF Campaign's budget supports experiments and operations at the ICF facilities, all of which must be operated safely and securely. This subprogram supports fabrication of the very sophisticated targets required for related weapons physics experiments, as well as operation of the Trident facility at LANL, the ICF program including external reviews, and users' meetings such as the Omega Laser Facility Users Group and the NIF Users Group.

Sequence

Benefits

Provides infrastructure and operations support for the ICF HED facilities that allows the ICF and Science Campaigns 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 2012	• Ongoing strong demand for ICF and SSP work on the NIF, Omega, and Z facilities. Additional funds for Z requested in the Science Campaign budget. • Provided support for facility improvements requested by users or required for effective operations. Conducted solicitations for target needs. • Supported Campaign external reviews, users' group meetings, and NRL.	**264,845**
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. Additional funds for Z requested in the Science Campaign budget. • Operate NIF, Omega, Z, and Trident in a safe, secure, and efficient manner in accordance with their governance plans. • Conduct annual assessment of infrastructure and mission needs and recommend following fiscal year investments across all HED facilities. • Conduct target development and support for experiments on ICF facilities. • Support for ICF Campaign external reviews and support for facility users group meetings; begin triennial reviews of Omega, NIF, and Z facilities with review of Omega in FY 2013.	**269,691**

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2014	• Continue activities from FY 2013, with reduced facility operations at the NIF. Additional funds for Z are requested in the Science Campaign budget. Starting in FY 2014, $113M in funding for base operations and maintenance for the NIF are requested in the Enterprise Infrastructure Site Stewardship funding line. Eliminate experimental time for external users of NIF and Z. Omega will provide the experimental time for NNSA's pipeline academic programs. • Support the ICF Campaign external reviews and support facility users' group meetings; triennial review of the NIF in FY 2014.	**232,678**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Continue activities from FY 2014. Reduce facility operations at the NIF, with emphasis on highest priority experiments in support of the stockpile and on improving operational efficiencies. Triennial review of the Z Facility in FY 2015.	**204,836** **201,310** **193,245** **186,328**

Supporting Information

Capital Operating Expenses[a]

Capital Operating Expenses Summary

(Dollars in Thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Capital Operating Expenses			
General Plant Projects	0	0	0
Capital Equipment	3,336	3,409	3,484
Total, Capital Operating Expenses	**3,336**	**3,409**	**3,484**

Outyear Capital Operating Expenses Summary

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
Capital Operating Expenses					
General Plant Projects	0	0	0	0	0
Capital Equipment	3,484	3,561	3,639	3,719	3,801
Total, Capital Operating Expenses	**3,484**	**3,561**	**3,639**	**3,719**	**3,801**

[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.

Advanced Simulation and Computing Campaign
Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Advanced Simulation and Computing Campaign [a]			
Integrated Codes	160,945	145,702	157,507
Physics and Engineering Models	69,890	68,932	62,995
Verification and Validation	46,087	56,232	52,728
Computational Systems and Software Environment	181,178	151,121	135,593
Facility Operations and User Support	159,859	173,013	155,506
Total, Advanced Simulation and Computing Campaign	**617,959**	**595,000**	**564,329**

Out-Year Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
Advanced Simulation and Computing Campaign [a]					
Integrated Codes	157,507	167,766	173,338	176,918	180,507
Physics and Engineering Models	62,995	67,098	69,326	70,759	72,194
Verification and Validation	52,728	56,162	58,028	59,226	60,427
Computational Systems and Software Environment	135,593	144,424	149,221	152,304	155,393
Facility Operations and User Support	155,506	165,635	171,135	174,671	178,213
Total, Advanced Simulation and Computing Campaign	**564,329**	**601,085**	**621,048**	**633,878**	**646,734**

[a] This represents the proposed control level.

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
National Defense Authorization Act for FY 2013 (P.L. 112-239)
The Continuing Appropriations Resolution, 2013 (P.L. 112-175)

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 without new underground tests. The ASC Campaign underpins the Annual Assessment of the stockpile and is an integrating element of the Predictive Capability Framework (PCF), as described in the FY 2012 Stockpile Stewardship Management Plan.

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.

The $30.7M decrease between the FY 2013 Annualized CR level and the FY 2014 Request reflects the net effect of a number of increases and decreases. The basic increases are: 1) funding restoration for the Predictive Sciences Academic Alliances Program (PSAAP) following the deferral of the follow-on program in FY 2013; 2) expanded modeling to evaluate pit re-use options, and 3) expanded integrated code development to efficiently use evolving computer architectures. The basic decreases are: 1) a rate adjustment at Lawrence Livermore National Laboratory which was implemented in FY 2013, but is not reflected in the FY 2012 Current and the FY 2013 Annualized CR level, 2) a $24.8M reduction to reflect anticipated management efficiency and workforce restructuring reductions for Weapons Activities. Studies to identify the specific program effects are underway. When these studies are completed, NNSA will work with Congress to make any necessary program or funding level adjustments.

The Lawrence Livermore overhead rate adjustment is a return to a lab wide standard overhead rate.

Program Accomplishments and Milestones

In FY 2012, ASC accomplished four significant milestones in program management and/or program development. These accomplishments include: 1) continued investment in a common computing environment across the weapons laboratories; 2) progress toward initial conditions for boost milestone – a key enabler for re-use; 3) continued investment in activities supportive of joint Department of Energy (DOE) Office of Science/National Nuclear Security Administration (NNSA) collaboration relevant to NNSA's projected computing and simulation requirements and, 4) closer coupling with Directed Stockpile Work (DSW) deliverables and the PCF.

Program Planning and Management

The ASC, in conjunction with the DSW program and other Campaigns, coordinates its work and funding priorities with NNSA and DOE strategic objectives. Clear alignment is attained by developing and adhering to the program's strategy documents and alignment with the PCF. This process enables effective resource allocations to consistently achieve ASC's goal of funding the highest priority work and addressing near-term and out-year challenges using an enterprise solution approach amongst Defense Programs (DP). As a way to reduce program costs, ASC has reduced and stretched future platform procurements and extended by one year the service life of current and future supercomputers.

Strategic Management

Through the ASC program, the Department will implement strategies to deliver integrated codes, physics and engineering models, verification and validation methods and assessments, computational systems and environments, and computing centers to address stockpile commitments. There is a new emphasis on plutonium and re-use that places strong importance on material models and common system models.

External factors present the strongest impact to the overall achievement of the program's 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

Outyear funding levels for the ASC Campaign total $2,502,745,000 for FY 2015 through FY 2018.

Out-year priorities and assumptions are governed by the mission to provide leading-edge, high-end simulation capabilities needed to meet weapons assessment,

certification, and national security requirements. The major assumption is that funding for the ASC program will suffice to support the LEP schedules (as approved by the Nuclear Weapons Council) through 2030. Exactly what constitutes national security requirements will evolve as emerging threats develop and change.

Program Goals and Funding

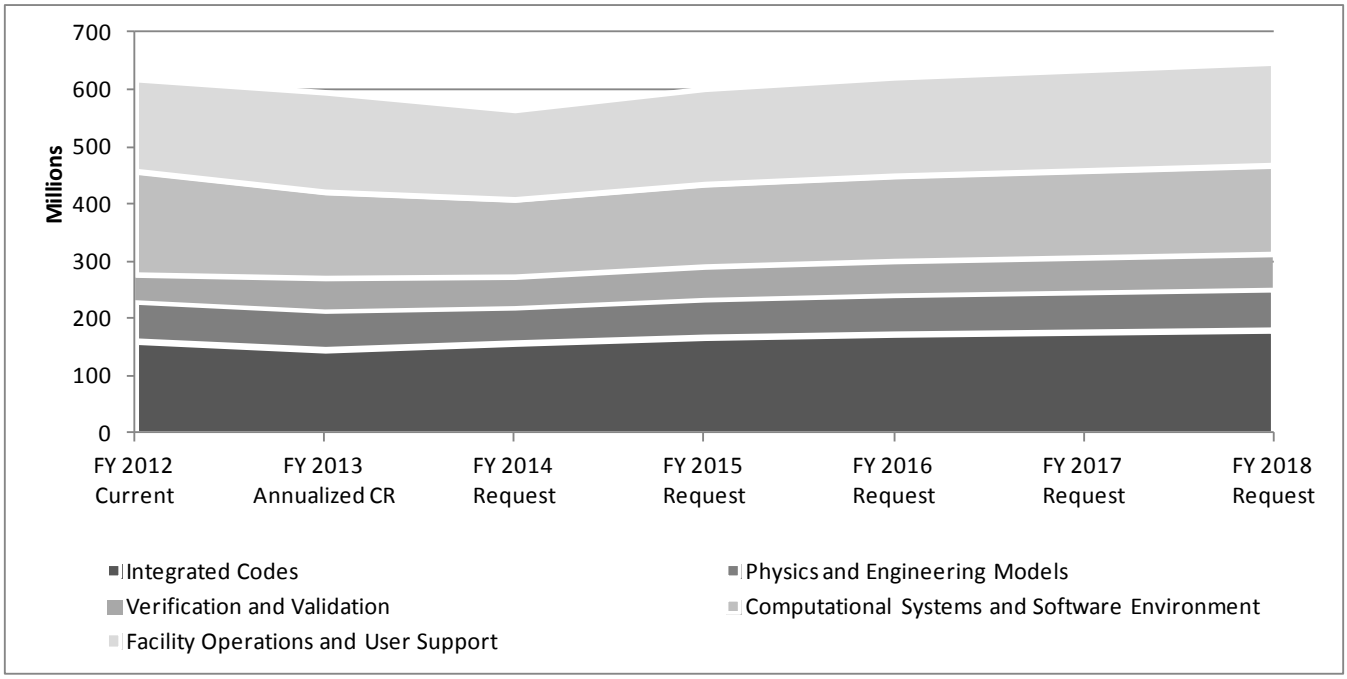
The goal of the ASC program is to deliver accurate simulation and modeling tools, supported by necessary computing resources, to maintain nuclear deterrence.

To achieve this program goal, ASC provides simulation capabilities and computational resources through a balanced program that includes technical staff, hardware, simulation software, and computer science solutions. The products of ASC integrate all aspects of the nuclear security enterprise from weapons design and analysis to the manufacture, deployment, and assessment of proliferant devices and their effects. Funding is expected to increase as needed to support the full national security mission.

Performance Measures

Performance Goal (Measure)	**Reduced Reliance on Calibration** - The cumulative percentage reduction in the use of calibration "knobs" to successfully simulate nuclear weapons performance.		
Fiscal Year	**2012**	**2013**	**2014**
Target	40% cumulative reduction in the use of calibration "knobs"	45% cumulative reduction in the use of calibration "knobs"	50% cumulative reduction in the use of calibration "knobs"
Result	**Not Met** - 38		
Endpoint Target	By the end of FY 2024, 100% of selected calibration knobs (non-science based models) affecting weapons performance simulation have been replaced by science-based, predictive phenomenological models. Reduced reliance on calibration will ensure the development of robust ASC simulation tools. These tools are intended to enable the understanding of the complex behaviors and effect of nuclear weapons, now and into the future, without nuclear testing.		

Figure 1: Relative Out-Year Funding Priorities in Weapons Activities – Advanced Simulation and Computing Campaign



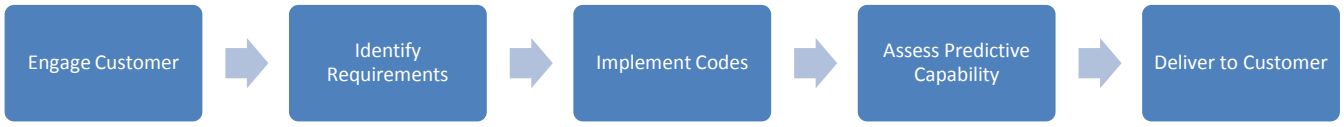
Explanation of Funding and/or Program Changes

	(Dollars in Thousands)		
	FY 2013 Annualized CR	FY 2014 Request	FY 2014 Request vs. FY 2013 Annualized CR
Advanced Simulation and Computing Campaign			
Integrated Codes	**145,702**	**157,507**	**+11,805**
The increase reflects the net effect of a rate adjustment between FY 2013 and FY 2014 at LLNL, restoration of funding for the Predictive Sciences Academic Alliances Program (PSAAP) following the deferral of the follow-on program in FY 2013, expansion of modeling to evaluate re-use options, expansion of integrated code development to efficiently use evolving computer architectures, along with a reduction to reflect anticipated management efficiency and workforce restructuring reductions across program elements.			
Physics and Engineering Models	**68,932**	**62,995**	**-5,937**
The decrease reflects the effect of a rate adjustment at LLNL between FY 2013 and FY 2014 and a reduction to reflect anticipated management efficiency and workforce restructuring reductions across program elements.			
Verification and Validation	**56,232**	**52,728**	**-3,504**
The decrease reflects the effect of a rate adjustment at LLNL between FY 2013 and FY 2014, B61 Life Extension Program simulation-related workload, work associated with the W78/88-1 study, and a reduction to reflect anticipated management efficiency and workforce restructuring reductions across program elements.			
Computational Systems and Software Environment	**151,121**	**135,593**	**-15,528**
The decrease reflects the effect of a rate adjustment at LLNL between FY 2013 and FY 2014, year-to-year computing assessments, and a reduction to reflect anticipated management efficiency and workforce restructuring reductions across program elements.			
Facility Operations and User Support	**173,013**	**155,506**	**-17,507**
The decrease reflects the effect of a rate adjustment at LLNL between FY 2013 and FY 2014, and a reduction to reflect anticipated management efficiency and workforce restructuring reductions across program elements.			
Total Funding Change, Advanced and Simulation and Computing Campaign	**595,000**	**564,329**	**-30,671**

Integrated Codes
Overview

Integrated codes, in concert with input decks created by the design user community, contain the mathematical descriptions of the physical processes relating to nuclear weapon systems and describe what the nation knows about nuclear weapons function. This subprogram funds the critical skills needed to develop, maintain and advance the capabilities of the large-scale integrated simulation codes that are needed for the following Stockpile Stewardship Program (SSP) and Directed Stockpile Work (DSW) activities: annual assessment; Life Extension Program (LEP) design, qualification, and certification; Significant Finding Investigation (SFI) resolution; and safety assessments to support transportation and dismantlement. In addition, these capabilities are necessary for a host of related requirements such as nuclear counter-terrorism efforts (e.g. nuclear forensics, foreign assessments and device disablement techniques).

Sequence (Ongoing for ASC)



Benefits

- The ASC codes and computing infrastructure support DSW work such as design, analysis, qualification, baselining, and SFI resolution. Stockpile work, science, and simulation are bound together through the Predictive Capability Framework (PCF) and the Component Maturation Framework (CMF).
- Historically, simulation capabilities were carefully calibrated to the underground test results. As long as the calculated configurations were close to the as-tested regime, one could be confident in the results. Refurbishment options and aging push the simulations outside of tested regimes and, therefore, require more predictive capabilities.
- Within the Integrated Code subprogram, ASC invests in modeling and integrated code development related to warhead re-use capabilities.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	Ongoing user support • Training. • Direct code usage support. • Bug fixes. Capability development • Delivered initial capability for effects from a low-yield urban nuclear event. • Completed improvements in primary performance assessment code in support of Level 1 milestone for early time initial conditions for boost. This is a key step in enabling re-use. • Began improvements in primary performance assessment code in support of Level 1 milestone for late time initial conditions for boost. Capability extension • Delivered parallel scalability enhancements in support of engineering LEP activities. • Demonstrated scalability of nuclear performance codes to 100,000 processors. • Completed re-factorization of transport code to take advantage of General Purpose Graphics Processing Units. Skills accession	**160,945**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	• Maintained an ongoing mentoring program for early career staff. • Participated in conclusion of Predictive Science Academic Alliance Program (PSAAP). Strategic research • Further refined the study of details of the thermonuclear burn process as it is relevant to simulation of weapon performance. • Investigated improvements in hydrodynamic algorithms and multi-material treatments.	
FY 2013	Ongoing user support and maintenance • Code builds and ports. • User training and assistance. • Regression testing and bug fixes. Capability development • Deliver improvements in primary performance assessment code in support of an FY 2014 Predictive Capability Framework (PCF) planned pegposts for late time initial conditions for boost. • Deliver improvements in nuclear performance assessment codes in support of out-year PCF planned pegposts for boost and secondary performance. • Deliver improvements in safety codes to address multi-point safety issues in support of out-year PCF planned pegposts. • Deliver improvements in engineering assessment codes in support of an FY 2015 PCF planned pegposts for hostile environments and out-year PCF planned pegposts for normal and abnormal environments. Capability extension • Complete initial optimization of threading for homogeneous architectures. • Deliver deterministic pre-conditioners to improve the performance of probabilistic calculations of particle transport. • Deliver improvements to support general domain-decomposed/replication hybrid parallelism. • Deliver the ability to set up analyses (including mesh generation) for machines with more than 1 million processors. • Enhance visualization and data analysis capabilities to model new experimental diagnostics. Strategic research • Investigate the use of higher-order finite element methods for various applications. • Begin to evaluate options for treating physics time evolution. • Release an initial suite of proxy applications used for co-design under a common build system with documentation.	**145,702**
FY 2014	Ongoing user support and maintenance • Code builds and ports. • User training and assistance. • Regression testing and bug fixes. Capability development • Deliver capability in primary performance assessment code in support of a PCF	**157,507**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	planned pegposts for late time initial conditions for boost. • Deliver improvements in nuclear performance assessment codes in support of out-year PCF planned pegposts for boost and secondary performance. • Deliver improvements in safety codes to address multi-point safety issues in support of out-year PCF planned pegposts. • Deliver improvements in engineering assessment codes in support of an FY 2015 PCF planned pegposts for hostile environments and out-year PCF planned pegposts for normal and abnormal environments. Skills accession • Participate in PSAAP II selection process and program start. • Collaborate with PSAAP II centers on technical topics and staff recruitment.	
FY 2015 **FY 2016** **FY 2017** **FY 2018**	Ongoing user support and maintenance • Code builds and ports. • User training and assistance. • Regression testing and bug fixes. Capability development • Deliver improvements in nuclear performance assessment codes in support of out-year PCF planned pegposts for boost and secondary performance. • Deliver improvements in safety codes to address multi-point safety issues in support of out-year PCF planned pegposts. • Deliver capability in engineering assessment codes in support of a PCF planned pegposts for hostile environments. • Deliver improvements in engineering assessment codes in support of out-year PCF planned pegposts for normal and abnormal environments. Skills accession • Maintain an ongoing mentoring program for early career staff. • Collaborate with PSAAP II centers on technical topics and staff recruitment.	**167,766** **173,338** **176,918** **180,507**

Physics and Engineering Models
Overview

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

Sequence (Ongoing for ASC)

Benefits

- Provides high fidelity models used in simulations of nuclear weapon performance to enable maintenance of the U.S. stockpile without nuclear testing.

Funding and Activity Schedule

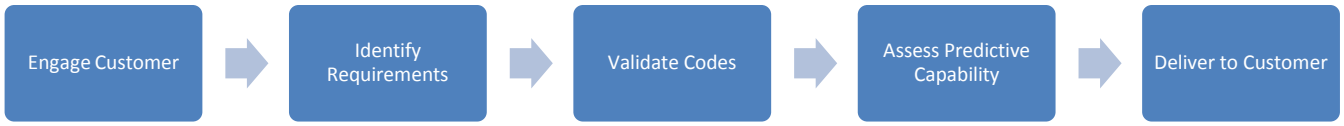
Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	DSW Support • Finished Level 1 Milestone advancing capabilities for annual assessment and resolution of significant finding investigations associated with early phase primary implosion. • Provided advanced high explosives models supporting certification for future LEPs and stockpile modifications. Material Properties • Delivered materials models required for maturation and certification of advanced safety technologies. • Delivered and assessed the impact of new plutonium properties models to be used in annual assessment. Strategic Development • Provided capabilities required for assessing the impact of extreme radiation environments on weapon circuits without the use of the recently decommissioned Sandia Pulsed Reactor.	**69,890**
FY 2013	• Provide multi-phase models for material strength. • Develop and implement improved descriptions of the Plutonium equation of state based on recent experimental data. • Provide physics-based models of transistor response to neutron irradiation in support of the W88 ALT. • Provide fluid/structural response models for B61 delivery environments.	**68,932**

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2014	• Develop and demonstrate predictive capabilities for calculating the onset of primary boosting and the influence of stockpile changes on this onset (joint with Science Campaign). • Develop predictive models of microscopic thermonuclear processes in plasmas, such as ion stopping, and multiple ion interactions during stopping.	**62,995**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Provide reactive flow models for HE detonation and burn that capture grain scale material heterogeneity and are computationally efficient. • Provide models for complex hydrodynamic processes that are sufficiently predictive to enable design and assessment of re-use options. • Provide models needed for certification on new safety options.	**67,098** **69,326** **70,759** **72,194**

Verification and Validation
Overview

Verification and Validation (V&V) provides assurance that the models in the codes produce mathematically correct answers which reflect physical reality. The V&V subprogram funds the critical skills needed to apply systematic measurement, documentation, and demonstration of the ability of the models and codes to predict physical behavior. The V&V subprogram is developing and implementing Uncertainty Quantification (UQ) methodologies as part of the foundation for the Quantification of Margins and Uncertainties (QMU) process of weapons assessment and certification. The V&V subprogram also drives software engineering practices to improve the quality, robustness, reliability, and maintainability of the codes that evaluate and address the unique complexities of the stockpile. As nuclear test data is becoming less relevant with an aging stockpile, and as weapons designers with test experience leave the nuclear security enterprise, it becomes increasingly important that the codes 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.
- Within the V&V subprogram, ASC invests in capabilities related to and used to conduct B61 LEP and W78/88-1 study support.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	On-going user support • Provided training on the use of UQ tools. • Continued implementation of Quality Assurance (QA) controls on codes and models development process. • Ensured material and nuclear databases were correctly updated and maintained. Verification and Validation • Completed verification and validation assessment of improvements in primary performance code in support of Level 1 milestone (initial conditions I for boost). • Began outlining strategy to verify and validate improvements to primary performance code in support of Level I initial conditions for Boost II. • Validated material and Plutonium models required to support certification of safety design options for refurbished weapons. • Provided technical support in validating models used to certify weapon systems under hostile environments in the absence of the Sandia Pulsed reactor. Predictive Capability Assessment • Completed common modeling in support of the boost initiative. • Conducted initial assessment of calibrated predictive capability against system specific baseline models. • Completed validating primary common model against relevant datasets. • Completed validating secondary common model against relevant datasets.	**46,087**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	• Conducted sensitivity and safety studies in support of LEP work. UQ methods • Completed participation with conclusion of PSAAP I activities. • Began providing support to improve UQ methodology for use to support annual stockpile assessment activities.	
FY 2013	On-going user support and training • Provide training on the use of UQ tools. • Implement QA controls on codes and models development process. • Ensure material and nuclear databases are correctly updated and maintained in support of on-going weapon assessment and life extension activities. 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 verify and validate improvements made to physics models and codes used in modeling circuit responses to hostile environments. Predictive Capability Assessment • Conduct assessment of un-calibrated science-based models against system specific models. • Improve the primary common model and validate the model against additional underground datasets. • Improve the secondary common model and validate the model against additional underground datasets. • Validate high explosive common model in support of design/development activities associated with life extension programs. UQ Research • Improve UQ aggregation tool for use in assessing weapon performance. • Work to improve UQ method to address model form uncertainty.	**56,232**
FY 2014	On-going user support and training • Provide training on the use of UQ tools. • Implement QA controls on codes and models development process. • Ensure material and nuclear databases are correctly updated and maintained to support weapon assessment activities. Verification and Validation • Complete verification and validation assessment activities in support of Level I initial conditions for Boost II. • Conduct and complete verification and validation assessment of radiation transport code in support of Level I Energy Balance II. Predictive Capability Assessment • Establish initial benchmarking of science-based models against system specific models and identify recommendations for future investments to model improvements.	**52,728**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	• Improve the primary common model until the model has been validated against all relevant underground data sets. UQ Research • Collaborate with PSAAP II centers on technical topics related to UQ methods and improvements. • Improve UQ aggregation tool for use in assessing weapon performance. • Continue to improve UQ aggregation to include model form uncertainty. • Work to improve UQ method for assessing stockpile and life extension programs.	
FY 2015 **FY2016** **FY 2017** **FY 2018**	On-going user support and training • Provide training on the use of UQ tools. • Implement QA controls to ensure material and nuclear databases are correctly updated and maintained. Verification and Validation • Verify improvements in nuclear performance codes in support of out-year PCF pegposts. • Verify improvement in safety codes to address multi-point safety issues. • Validate improvements to physics and material models to support out-year PCF pegposts. • Verify improvements in engineering codes in support of out-year PCF pegposts for normal/abnormal/hostile environments. Predictive Capability Assessment • Continue to assess predictive capability as improvements to codes and models are made available, including new nuclear material data. • Improve the primary and secondary common models against remaining relevant underground datasets.	**56,162** **58,028** **59,226** **60,427**

Computational Systems and Software Environment (CSSE)
Overview

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

Sequence (Ongoing for ASC)

Benefits

This Computational Systems and Software Environment sub-program delivers the following to the nuclear weapons complex:

- production and advanced/problem-optimized systems;
- the system software infrastructure including the support of an operating system environment;
- integrated tools to enable the development, optimization, and efficient execution of application codes;
- I/O (or data transfer), networking technologies, and storage infra-structure, and
- integrated environments to support end-user post-processing visualization, data analysis, and data management.

This sub-program develops the plans and coordinates the execution of next-generation computing technology research and development. This R&D prepares the ASC applications and computing environment for the paradigm shift in computing technology to extreme, heterogeneous, multi-core on-node parallelism.

Funding and Activity Schedule

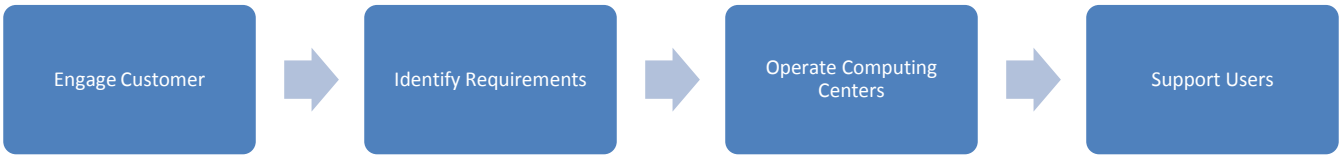
Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	Platform Operations • Continued deployment of Sequoia at LLNL. • Continued operation of Cielo and Roadrunner. • Deployed Tri-Lab Linux Capacity Cluster (TLCC2) systems. • Retired BlueGene/L, Unclassified BlueGene uBGL, and TLCC1 systems. Planning • Developed the mission need statement for ASC's next-generation advanced system as a replacement for Roadrunner. Capability Development • Advanced reliable, available, and secure environment for distance computing. • Furthered development of computing environment consisting of user tools, networks, file system, archival storage, and visualization and data analysis. • Initiated the Hybrid Memory Cube (HMC) technology partnership to explore the optimization of HMC's performance and energy capabilities. • Explored alternative computer technologies on scalability, reliability, packaging, and cost.	**181,178**

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2013	Platform Operations • Operate Sequoia in General Availability (GA) mode. • Continue operation of Cielo in GA mode. • Decommission of Roadrunner. • Operate TLCC2 systems. Planning • Complete CD-1/2/3 phases for ASC Trinity System to be procured by the ACES (SNL/LANL) team and deployed at LANL. • Initiate CD-0 phase for ASC 2017 Advanced Technology System. Capability Development • Provide readiness support to ASC code teams in porting and scaling applications onto Sequoia and Cielo. • Further development of tri-lab computing environment consisting of user tools, networks, file system, archival storage, and visualization and data analysis. • Continue oversight of the jointly funded NNSA and DOE Advanced Scientific Computing Research (ASCR) FastForward projects. • Initiate additional industrial partnerships to address critical Exascale R&D technology barriers via the Design Forward program.	**151,121**
FY 2014	Platform Operations • Operate Sequoia. • Operate Cielo. • Operate ASC Trinity system. • Operate TLCC2 systems. Capability Development • Continue providing readiness support to ASC code teams in porting and scaling applications on to Sequoia and Cielo. • Further development of tri-lab computing environment consisting of user tools, networks, file system, archival storage, and visualization and data analysis. • Continue oversight of the jointly funded NNSA and DOE ASCR FastForward projects.	**135,593**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	Platform Operations • Operate Sequoia. • Decommission Cielo. • Operate TLCC2 systems. • Initiate deployment of CTS1 clusters. Planning • Complete CD-3 phase for ASC 2017 Advanced Technology System. Capability Development • Continue providing readiness support to ASC code teams in porting and scaling applications on to Sequoia. • Further development of tri-lab computing environment consisting of user tools, networks, file system, archival storage, and visualization and data analysis.	**144,424** **149,221** **152,304** **155,393**

Facility Operations and User Support
Overview

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

Sequence (Ongoing for ASC)



Benefits

- The Facility Operations and User Support subprogram deploys the necessary physical facility for computing centers at the national laboratories.
- ASC provides the 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 2012	User Support • Integrated Tri-Lab Linux Capacity Cluster (TLCC2) systems. • Provided analysis and software environment development. • Provided help desk support to ASC computer users. • Coordinated user training across user support sub-teams. • Executed a strategy for a more persistent common computing environment for users to transition seamlessly between current production systems to future architectures. • Supported applications for large runs on Cielo, Dawn, and other ASC platforms. • Utilized Y12 and remote ASC cluster resources for production manufacturing problems. Capability Deployment • Completed Phase 2 planning for contingency response findings identified by the GAO. • Enhanced redundancy and reliability of electrical distribution systems to support future petascale and exascale system. • Continued analysis of future modifications and/or expansion of facilities that will be needed by future ASC systems.	**159,859**
FY 2013	User Support • Provide Web documentation, user manuals, technical bulletins, training, hotline and help desk support for ASC users of Cielo, Sequoia, and TLCC2 systems. • Ensure a more persistent common computing environment for users to transition seamlessly among current production systems. • Develop and initiate action plan to increase overall availability of computer cycles	**173,013**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	to end users. • Provide operational support for reliable and secure production computing environment: system administration and operations, software and hardware maintenance, licenses and contracts, archival storage, computing environment security and infrastructure, production computing services, and tri-lab system integration and support. Capability Deployment • Complete planning and exercise contingency response plans. • Support the utilization of ASC codes and computing resources at the Kansas City Plant to solve production manufacturing problems through modeling and simulation. • Decommission Roadrunner and TLCC1 systems.	
FY 2014	User Support • Provide Web documentation, user manuals, technical bulletins, training, hotline and help desk support for ASC users of Cielo, Sequoia, and TLCC2 systems. • Ensure a more persistent common computing environment for users to transition seamlessly among current production systems. • Develop and initiate action plan to increase overall availability of computer cycles to end users. • Provide operational support for reliable and secure production computing environment: system administration and operations, software and hardware maintenance, licenses and contracts, archival storage, computing environment security and infrastructure, production computing services, and tri-lab system integration and support. Capability Deployment • Complete planning and exercise contingency response plans. • Support the utilization of ASC codes and computing resources at the Kansas City Plant to solve production manufacturing problems through modeling and simulation. • Decommission the remaining TLCC1 systems.	**155,506**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	User Support • Provide Web documentation, user manuals, technical bulletins, training, hotline and help desk support for ASC users of Sequoia and TLCC2 systems. • Ensure a more persistent common computing environment for users to transition seamlessly among current production systems. • Develop and initiate action plan to increase overall availability of computer cycles to end users. • Provide operational support for reliable and secure production computing environment: system administration and operations, software and hardware maintenance, licenses and contracts, archival storage, computing environment security and infrastructure, production computing services, and tri-lab system integration and support. Capability Deployment • Complete planning and exercise contingency response plans. • Deploy newer file system and archival storage technologies to replace aging technologies. • Support the utilization of ASC codes and computing resources at the Kansas City	**165,635** **171,135** **174,671** **178,213**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	Plant to solve production manufacturing problems through modeling and simulation.	

Supporting Information

Capital Operating Expenses [a]

Capital Operating Expenses Summary

(Dollars in Thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Capital Operating Expenses			
General Plant Projects	2,485	2,540	2,596
Capital Equipment	9,091	9,291	9,495
Total, Capital Operating Expenses	**11,576**	**11,831**	**12,091**

Outyear Capital Operating Expenses Summary

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
Capital Operating Expenses					
General Plant Projects	2,596	2,653	2,711	2,771	2,832
Capital Equipment	9,495	9,704	9,917	10,135	10,358
Total, Capital Operating Expenses	**12,091**	**12,357**	**12,628**	**12,906**	**13,190**

[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.

Readiness Campaign
Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Readiness Campaign [a]			
Component Manufacturing Development	0	0	106,085
Nonnuclear Readiness	64,931	64,681	0
Tritium Readiness	63,475	65,414	91,695
Total, Readiness Campaign	**128,406**	**130,095**	**197,780**

Out-Year Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
Readiness Campaign [a]					
Component Manufacturing Development	106,085	155,165	150,169	130,252	101,389
Nonnuclear Readiness	0	0	0	0	0
Tritium Readiness	91,695	115,832	104,474	95,579	123,230
Total, Readiness Campaign	**197,780**	**270,997**	**254,643**	**225,831**	**224,619**

[a] This represents the proposed control level.

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
National Defense Authorization Act for FY 2013 (P.L. 112-239)
The Continuing Appropriations Resolution, 2013 (P.L. 112-175)

Overview

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

In the FY 2013 Annualized CR level, the Readiness Campaign was comprised of two subprograms, Tritium Readiness (TR) and Nonnuclear Readiness (NNR). In the FY 2014 Request, we are proposing to realign all scope and funding from NNR and three other previously funded (prior to FY 2013) Readiness Campaign subprograms – Advanced Design and Production Technologies (ADAPT), High Explosive Weapons Operations (HEWO), and Stockpile Readiness (SR) – to a new Component Manufacturing Development (CMD) subprogram. In FY 2012, funding was redirected from these latter three subprograms to align with other National Nuclear Security Administration (NNSA) priorities to sustain the stockpile and maintain production in the Tritium Readiness subprogram. Across the FYNSP, this subprogram increases funding by about 21 percent annually in order to accommodate a 200 percent increase in the tritium processing rate.

The CMD subprogram name reflects renewed focus on restoring and further developing the manufacturing capability needed to better support the nuclear weapons stockpile. A CMD funding line is needed to enable subassembly and component manufacturing capabilities, which support multiple weapon systems, to attain minimum concurrent technology readiness and manufacturing readiness levels (TRL/MRL) prior to Phase 6.3. This funding supports first user Life Extension Program (LEP) and provides for adaptation to subsequent LEPs, as well as for alternations (Alts) and modifications (Mods) to the enduring stockpile. Returning to a multi-site, multi-system manufacturing development discipline under a single subprogram ensures critical components are ready for first insertion, maintains the capability to support the stockpile, and reduces the potential need for future rework and unnecessary cost.

The budget for the Readiness Campaign reflects technical investment of the assigned federal program participants to ensure effective execution of the Tritium Readiness subprogram and CMD subprogram activities.

The Tritium Readiness subprogram operates the capability for producing tritium for the national inventory needed for the nuclear weapons mission. The CMD subprogram matures production processes and technologies that are required for manufacturing components to meet Directed Stockpile Work (DSW) production requirements.

The Readiness Campaign mission invests in technologies that will be used in multiple weapon system applications with a focus on the first insertion user, which are common across the nuclear security enterprise sites, in order to conserve development resources and reduce production uncertainty. The Readiness Campaign goals for FY 2014 and out years are aligned with the 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 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) provides a construct for nuclear security enterprise integration across programs and campaigns for maturing technologies and providing manufacturing capabilities for planned insertion of components into LEPs, Limited Life Component Exchanges (LLCEs), Alts, and Mods. Readiness Campaign planning also considers Site Stewardship and Nuclear Programs acquisition schedules to coordinate selection and insertion of production capabilities to reduce facility lifecycle costs.

The Tritium Readiness mission produces tritium for the stockpile and builds up the required production rate to meet national security needs. The Readiness Campaign coordinates with the 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 (TPBARs) 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 CMD mission develops capabilities to manufacture components that will be used for DSW qualification, integration, and production. The goal of CMD is to have critical manufacturing technologies ready for insertion with the first user, developing the first user foundational process and having the ability to modify it for the subsequent user eliminating the need to develop an entirely new process for the next in line weapon system in the Planning and Production Directive (P&PD) schedule. Work scope funded by CMD is not accomplished for a specific weapon system; the emphasis is on a core manufacturing capability that all weapons can make use of. The first user Alt, LEP, or Mod is the initial beneficiary, but the capability enabled by CMD is intended to apply to multiple weapon systems.

The Readiness Campaign relies upon the Office of Stockpile Materials to establish 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.

The significant increase in Readiness Campaign funding reflects increases for both CMD and Tritium Readiness. The CMD increase includes provision for development of manufacturing processes to support multi-system stockpile and current and future insertion requirements, including the B61-12 LEP, W88 Alt 370, and the W78/88-1 LEP. The Tritium Readiness increase is driven by costs for unobligated reactor fuel and other costs at TVA that are tied to 18-month nuclear reactor cycles, infrastructure projects for control system updates at the Tritium Extraction Facility (TEF), and preparations to ramp up production to meet stockpile requirements.

The requested amount for this program for FY 2014 reflects a reduction of $8.7M to account for anticipated management efficiency and workforce restructuring reductions for Weapons Activities. Studies to identify the specific program effects are underway. When these studies are completed, NNSA will work with Congress to make any necessary program or funding level adjustments.

Program Accomplishments and Milestones

In the prior appropriation year, FY 2012, the Readiness Campaign accomplished the following significant milestones in support of the nuclear weapons stockpile:

(1) supported the DSW customer's nuclear weapon refurbishment needs derived from the Integrated Priority List (IPL) by successfully completing the associated Level 2 milestones relating to advancement of the manufacturing capability to produce radio frequency integrated circuits, reduce in the number of high and very high critical elements for manufacturing by 50%, and advance the manufacturing capability to produce the firing set to a MRL-3 position, and

(2) a cumulative total of 1,872 TPBARs were irradiated in TVA reactors to provide the capability of collecting new tritium to contribute to the inventory.

Program Planning and Management

The Readiness Campaign, in conjunction with DSW, validates its work and funding priorities by engaging in semi-annual, bottom-up reviews across the Future Years Nuclear Security Program (FYNSP). Facilitating clear alignment with NNSA and Department of Energy (DOE) strategic objectives, the Readiness Campaign utilizes a process for allocating resources by consistently achieving its goal of funding the highest priority work and addressing near-term and out-year challenges using an IPL analysis approach within Defense Programs.

Strategic Management

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

The Production Readiness subprogram provides a wide range of component development activities that facilitate the readiness of future manufacturing processes and technologies for the next insertion point based on priority analysis for program requirements. All DSW component requirements 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 CMD subprogram offers resources for

the pacing elements for nonnuclear and secondary component production.

One major objective of the Tritium Readiness subprogram is to support the tritium supply chain by managing a combination of commercial suppliers, subcontract component vendors, and in-house infrastructure. The combination of commercial and in-house resources provides best value to the government, whereas utilizing strictly in-house resources would present 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, including deployed systems, pipeline transfers, and returns. 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 support 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 for dependencies and variances, in both schedules and resources, associated with managing various subcontract suppliers and prevailing market conditions. Thus, strategic program management needs to remain forward looking, identifying 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 loaded 544 TPBARs in TVA's Watts Bar Unit 1 reactor beginning in May 2011, up from 240 TPBARs in the previous reactor cycle, and began its second cycle at 544 TPBARs in October 2012. 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. This material is currently experiencing world-wide shortages and 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. The TEF will participate in helium-3 harvesting during FY 2013.

Major Outyear Priorities and Assumptions

Outyear funding levels for the Readiness Campaign total $976,090,000 for FY 2015 through FY 2018. The outyear funding for the Tritium Readiness subprogram totals $439,115,000 for FY 2015 through FY 2018. The priority for the Tritium Readiness subprogram continues to be to provide an assured supply of tritium to meet national defense needs. This involves demonstrating successful production at increasing rates. It is assumed that the irradiation of TPBARs in TVA's power reactors will continue to be the most reliable, safe, and economical way to meet the national demand for tritium.

The outyear funding for the CMD subprogram totals 536,975,000 for FY 2015 through FY 2018. The CMD subprogram priority is to: establish the base manufacturing capability that can not only support the first user, but also support subsequent users through minor modifications when compared with establishing a new capability; and develop component manufacturing capabilities that directly support the B61 LEP, the W78/88-1 Study, the W78/88-1 LEP, and the W88 ALT 370. This involves having the ability to mature a wide range of component manufacturing production processes and technologies for multi-system use and to meet DSW production requirements, while also addressing select system requirements.

Program Goals and Funding

The primary Tritium Readiness subprogram goal is to gradually increase tritium production to the rate required to maintain the national inventory. This requires increasing the number of TPBARs in each cycle at TVA, while minimizing risks in the nuclear reactor operating environment. This requires the completion of the Supplemental Environmental Impact Statement, completion of a reactor safety analysis at TVA, and the approval of TVA's license amendment request to the Nuclear Regulatory Commission to increase production to at least 1700 TPBARs per cycle. The program goals also include providing a safe and reliable operating environment in TVA's nuclear reactors by investing in prudent risk reduction efforts to better understand the behavior of TPBARs during irradiation and to ensure compatibility with TVA's reactor operating conditions. All other Tritium Readiness procurements, development support, technical management, and infrastructure costs are directed towards achieving these mission goals.

The primary CMD goal is to develop and deploy multi-system weapon component manufacturing capabilities needed to replace sunset technologies, upgrade existing technologies, and/or introduce future technologies that support the nuclear weapons stockpile. This subprogram deploys the product development and production capabilities required to support high explosive and other energetic materials production, development of nonnuclear and special materials product requirements, and development of manufacturing processes that improve safe, reliable, and secure functionality for use in multiple weapon system applications that are common across the nuclear security enterprise.

CMD funds will enable the maturation of manufacturing technologies to support the manufacture of limited life components (e.g. Gas Transfer Systems and Neutron Generators) for the stockpile as well as future LLCEs, Alts, Mods, and LEPs, which is consistent with the 2010 NPR Report. CMD also enables the maturation of component manufacturing capabilities for nonnuclear and secondary components required for the nuclear stockpile and future weapon systems.

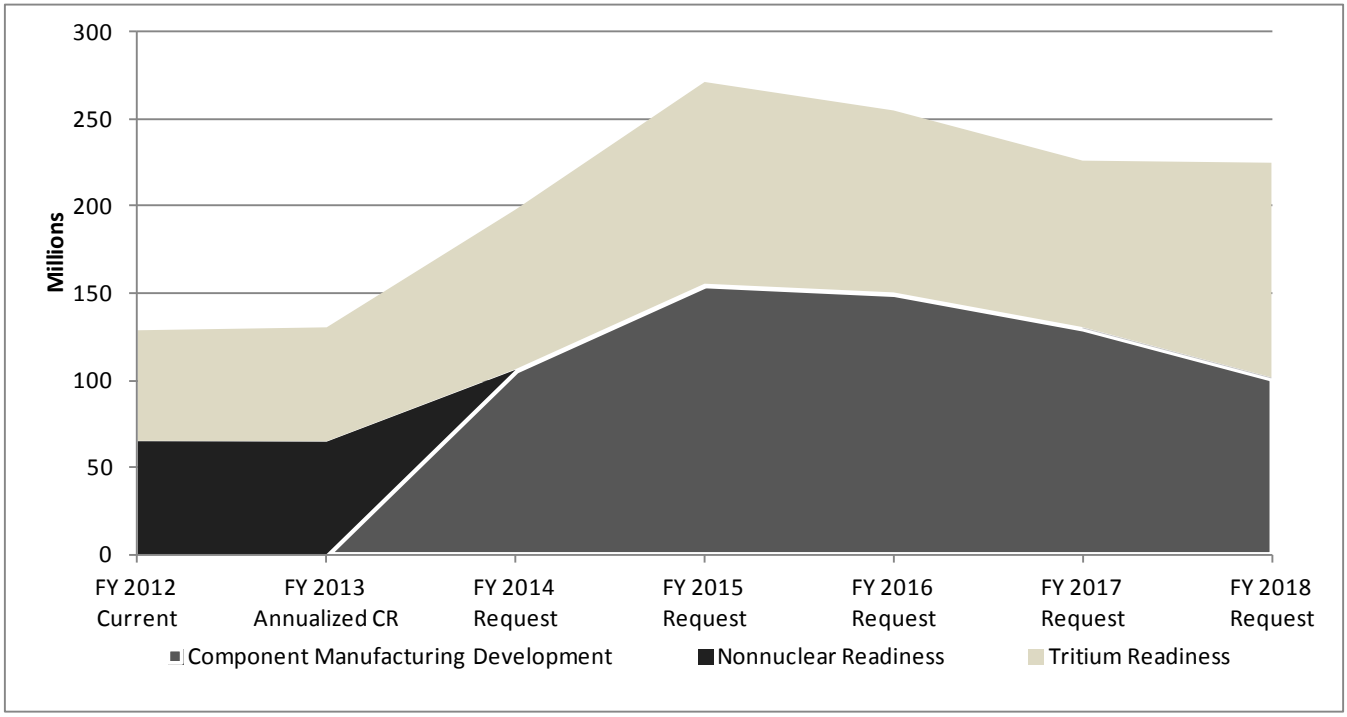
Performance Measures

Performance Goal (Measure)	**Critical Capabilities Deployed** - Cumulative number of critical capabilities deployed to support our Directed Stockpile Work (DSW) customer's immediate and urgent nuclear weapon refurbishment needs derived from the Nonnuclear Readiness Assessment Plan.		
Fiscal Year	**2012**	**2013**	**2014**
Target	27 capabilities	28 capabilities	N/A
Result	**Met** - 27		
Endpoint Target	By the end of FY 2013, deploy 28 critical immediate and urgent capabilities to support Directed Stockpile Work nuclear weapon refurbishment deliverables.		

Performance Goal (Measure)	**Component Manufacturing Development -** The annual progress towards the maturation of production technologies and manufacturing capabilities as measured by the number of deliverables completed.		
Fiscal Year	**2012**	**2013**	**2014**
Target	N/A	5 deliverables	6 deliverables
Result			
Endpoint Target	Until the last nuclear weapon system in the stockpile is dismantled, NNSA will continue to mature production technologies and manufacturing capabilities to support Directed Stockpile Work nuclear weapon refurbishment and assessment activities.		

Performance Goal (Measure)	**Tritium Production** - Cumulative number of Tritium-Producing Burnable Absorber Rods irradiated in Tennessee Valley Authority reactors to provide the capability of producing new tritium to support national security requirements.		
Fiscal Year	**2012**	**2013**	**2014**
Target	1,872 TPBARs	1,872 TPBARs	2,416 TPBARs
Result	**Met** – 1,872		
Endpoint Target	By the end of FY 2017, complete irradiation of 2,896 Tritium-Producing Burnable Rods (TPBARs) to provide tritium for nuclear weapons. Note: Irradiation of TPBARs is completed every 18 months, or 1.5 years, in approximately October or March. For FY 2013, the irradiation cycle started in October of 2012 and will be complete in March of 2014. Thus, there is no increase to the number of TPBARs irradiated in FY 2013 and, for the same reason, no increase in FY 2016.		

Figure 1: Relative Out-Year Funding Priorities in Weapons Activities – Readiness Campaign



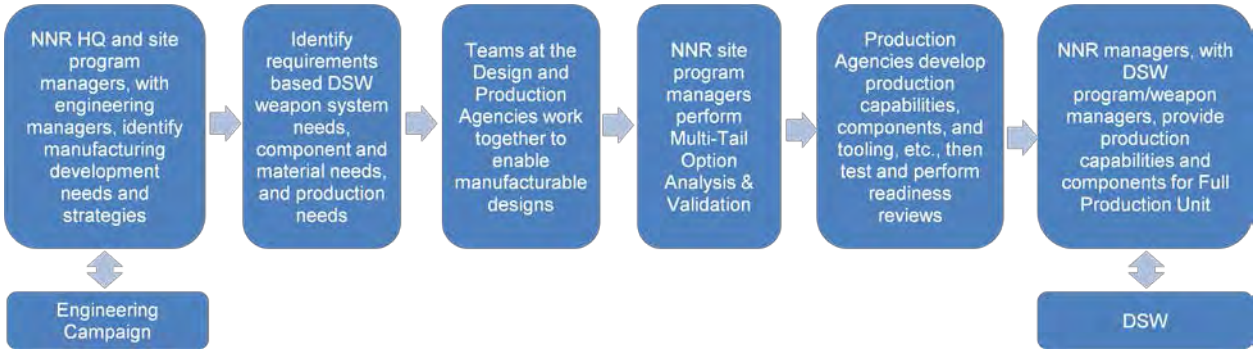
Explanation of Funding and/or Program Changes

	(Dollars in Thousands)		
	FY 2013 Annualized CR	FY 2014 Request	FY 2014 Request vs. FY 2013 Annualized CR
Readiness Campaign			
Nonnuclear Readiness	**64,681**	**0**	**-64,681**
The decrease represents a realignment of funding from Nonnuclear Readiness (NNR) to Component Manufacturing Development (CMD) to restore full capability to mature component manufacturing production processes and technologies. In addition, the decrease also accounts for a reduction for anticipated management efficiency and workforce restructuring reductions for Weapons Activities.			
Tritium Readiness	**65,414**	**91,695**	**+26,281**
The Tritium Readiness subprogram increase is a function of cost premiums for enrichment of unobligated reactor fuel at TVA (limited suppliers) and infrastructure projects for TEF controls system upgrades, as well as preparations for continued increases in production to meet mission requirements. The increase is also a net of a reduction for anticipated management efficiency and workforce restructuring reductions for Weapons Activities.			
Component Manufacturing Development	**0**	**106,085**	**+106,085**
The increase represents realignment of funds from Nonnuclear Readiness (NNR) to restore the full capability to mature production processes and technologies that are required for manufacturing components to meet DSW production requirements in support of the stockpile, and future multi-system insertions. Advanced Design and Production Technologies (ADAPT), High Explosive Weapons Operations (HEWO), and Stockpile Readiness (SR) activities also will be consolidated and accomplished by the CMD subprogram. The increase is also a net including a reduction for anticipated management efficiency and workforce restructuring reductions for Weapons Activities.			
Total Funding Change, Readiness Campaign	**130,095**	**197,780**	**+67,685**

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. These capabilities include weapon command and control, performance examination during deployment simulations, and 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 2012	• Addressed 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. • Radar Component Maturation KCP – Fabricated the baseline design for the Transmitter Low Temperature Co-Fired Ceramic substrates, B61 and W88 receivers and W88 transmitters fabricated and tested (functional, characterization of multiple substrates and Multi-Chip Modules processes). • Firing Set Maturation KCP – Developed a schedule for process development, firing set was produced and tested, electronic modules were assembled and housings designs were machined and inspected. • Technology Maturation Development KCP – reduced the number of high and very high risk manufacturing critical elements. • SNL Neutron Generator Tester Activities – Matured manufacturing technologies for both Ferro-Electric Neutron Generators and Electronic Neutron Generators for multiple weapon systems. For example, production testers were relocated, new software updates increased production throughput, product realization teams achieved Quality Engineering Releases for various testers, a conceptual design review was completed and tester training for operators continues. • Continued to improve data quality, program integration and mature the functionality of the Component Maturation Framework management tool for	**64,931**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	identifying technology and funding gaps.	
FY 2013	• Continue to address production readiness requirements and scope associated with down-select of technologies for the B61-12 as first user and other systems. • Address production readiness requirements associated with batteries and electrical components for the W88 ALT as first user and other systems. • Continue maturation of manufacturing technologies to support the manufacture of limited life components (e.g. Gas Transfer Systems) for the stockpile as well as future LLCEs, Alts, Mods, and LEPs. • 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	• Activities move under the Component Manufacturing Development subprogram.	**0**
FY 2015	• Activities move under the Component Manufacturing Development subprogram.	**0**
FY 2016		**0**
FY 2017		**0**
FY 2018		**0**

Tritium Readiness
Overview

The Tritium Readiness subprogram operates the Departmental capability for producing tritium to augment 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 supports 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 2012	• Provided engineering and management services and irradiation fees at TVA to complete irradiation of 544 TPBARs in Cycle 11 at WBN1. • Awarded design-build contract for 500,000 gallon holdup tank to assist with timing of reactor coolant system water releases to the Tennessee River. • Purchased reactor fuel for Cycle 12 at WBN1 and paid enrichment price differentials for unobligated reactor fuel for three reactors in the DOE-TVA Interagency Agreement. • Provided technical production support to the TVA tritium reactor operations by the design authority to ensure sufficient technical oversight and prepared calculations for a reactor safety analysis for upcoming license amendment requests to the NRC. • Conducted hardware and knowledge preservation for in-reactor pellet performance testing postponed due to fiscal constraints. • Maintained the TEF in Responsive Operations mode and conducted one TPBAR extraction. • Completed capital projects at the TEF including control room connection to the Tritium Loading Facility, design for the continuous air monitor, conceptual design for the direct stacking project, National Security Agency approval for the secure wireless sensor project, and procurements for developmental classified control system upgrade. • Continued conducting Supplemental Environmental Impact Statement to support TVA licensing for increasing TPBAR irradiation quantities that must be approved by the NRC before irradiation increases. • Fabricated 544 TPBARs for delivery to WBN1 for Cycle 12 irradiation, including four limited use assemblies to evaluate design refinements. • Provided transportation for two batches of irradiated TPBARs from TVA to the TEF, supported by prior year funds on a multi-year contract.	**63,475**

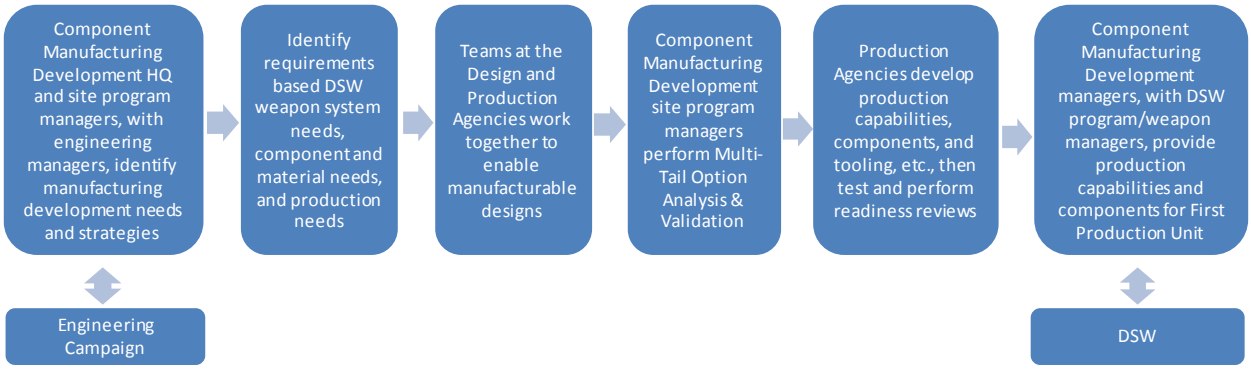
Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2013	• Pay irradiation fees and excess uranium fuel costs for 544 TPBARs in Watts Bar Unit 1 (WBN1) in Cycle 12. • Reimburse TVA for enrichment price differentials for providing unobligated enrichment for the three reactors covered in the DOE-TVA Tritium Production interagency agreement. • Complete construction of the 500,000 gallon effluent water management tank at WBN1 and begin operational status. • Provide technical production support and surveillance for tritium production operations at TVA by the TPBAR design authority to ensure technical oversight in support of TVA and NRC requirements. • Provide extensive calculations, modeling, and reactor core designs to support the reactor safety analysis required for a license amendment request to the NRC for increased production. • Implement an improved safety nuclear reactor core design to expedite obtaining a license amendment request for increased production. • Maintain the TEF in Responsive Operations mode, conduct one TPBAR extraction activity, and begin capital project upgrades to the TEF control systems nearing end of life. • 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. • Provide commercial transportation for the irradiated TPBARs from TVA to the TEF for post irradiation examinations and to transport base plate waste for disposal. • Begin fabricating TPBARs for Cycle 13 at WBN1 and sustain the TPBAR component supply chain.	**65,414**
FY 2014	• Provide reimbursement to TVA under the Economy Act for TPBAR irradiation services, excess uranium requirements, premiums for unobligated enrichment of reactor fuel, and management and engineering support for tritium production. • Provide technical production support and surveillance for tritium production operations at TVA by the TPBAR design authority to ensure technical oversight in support of TVA and NRC requirements. • Purchase nuclear reactor fuel to support irradiation of 704 TPBARs in Cycle 13. • Develop a TPBAR peak cladding temperature computational model to support an improved reactor safety analysis to reduce reactor fuel requirements in the future. • Maintain the TEF in Responsive Operations mode, conduct one extraction, and perform capital improvement projects for control systems and facilities to begin to prepare TEF for Full Operations in the future. • Maintain the TPBAR fabrication contractor and related component supply chain and deliver 704 TPBARs for irradiation in Cycle 13 to TVA's Watts Bar Unit 1 reactor. • Provide transportation for irradiated TPBARs from WBN1 cycle 12 to the TEF and for post irradiation examinations.	**91,695**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Provide reimbursement to TVA under the Economy Act for TPBAR irradiation services, excess uranium requirements, premiums for unobligated enrichment of reactor fuel, and management and engineering support for tritium production. • Ramp up production incrementally in each succeeding reactor cycle until reaches production required to meet mission needs. • Utilize unobligated reactor fuel obtained by TVA from Energy Northwest under the Depleted Uranium Enrichment Project.	**115,832** **104,474** **95,579** **123,230**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	• Provide technical production support and surveillance for tritium production operations at TVA by the TPBAR design authority to ensure technical oversight in support of TVA and NRC requirements. • Continue performance tests on tritium-producing lithium-aluminate pellets in the Advanced Test Reactor at Idaho National Laboratory and conduct post irradiation examinations and data analysis. • Continue to improve understanding of in-reactor TPBAR performance to reduce program risks and improve the safety and reliability of the tritium production process. • Obtain NRC approval for an improved reactor safety analysis to reduce on-going reactor fuel requirements. • Maintain the TEF in Responsive Operations mode, conduct one extraction, and perform capital improvement projects for control systems and facilities to begin to prepare TEF for Full Operations in the future. • In FY 2018, transition the TEF from Responsive Operations to Full Operations mode conducting multiple extractions annually. • Fabricate TPBARs to meet 18-month reactor cycles, initiate contracts to restart production of major TPBAR components, and maintain the related component supply chain. • Provide transportation for irradiated TPBARs from WBN1 cycle 12 to the TEF and for post irradiation examinations. • Provide transportation for disposal of tritium program radioactive waste from base plates and thimble plugs from TVA.	

Component Manufacturing Development
Overview

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

Sequence and Integration Points



Benefits

Component Manufacturing Development modernizes manufacturing processes and facilities and develops technologies necessary to deploy new or reproduced neutron generators, tritium reservoirs, detonators, component testers, secondaries, and other special materials product components required to maintain the stockpile consistent with the current Nuclear Posture Review and support the first insertion use by a tail number as well as future Alts, Mods, LLCEs, and LEPs. CMD supports many Defense Program customers and matures technologies from a design concept to a manufactured state that replaces sunset technologies, creates production efficiencies, reduces costs and improves weapon safety and reliability.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• This activity goes into effect in FY 2014.	**0**
FY 2013	• This activity goes into effect in FY 2014.	**0**
FY 2014	• Savannah River National Laboratory (SRNL) Gas Transfer System, limited life component, development for W87 ALT 360 and subsequent user insertion as identified in the CMF. • Implement Pantex technology and process improvements to meet W76 and subsequent user non-intrusive pit reuse requirements as identified in the CMF. • Startup Kansas City Plant (KCP) mechanisms technology maturation needs for W78 and subsequent user insertion as identified in the CMF. • Support KCP manufacturing process development for W78 and subsequent user insertion including welding processes, machining for multiple components, electrical/electronic fabrication processes, etc. • Support Sandia National Laboratories (SNL) neutron generator testers and production readiness to include electronic neutron generator development as	**106,085**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	identified by the CMF. • Support Lawrence Livermore National Laboratory (LLNL) design, qualification and certification of Canned Sub-Assembly and pit reuse options, initial systems development and deployment, and nondestructive evaluation for W78 first user and subsequent user insertion as identified by the CMF. • SRNL Gas Transfer System, limited life component, development for B61-12. • Implement Pantex technology and process improvements to meet B61-12 non-intrusive pit reuse requirements. • Support Y-12 modernizations in radiography, dimensional inspection, and machine tool as well as metal component certification for B61-12. • Support SNL external production for the W88 ALT 370. • Support radar component maturation at KCP for the W88 ALT 370.	
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Continue maturation of SRNL Gas Transfer System, limited life component, development for first user and subsequent user insertion as identified in the CMF. • Continue maturation of Pantex technology and process improvements to meet W76 and subsequent user non-intrusive pit reuse requirements as identified in the CMF. • Continue KCP mechanisms technology maturation needs for W78/88-1 and subsequent user insertion as identified in the CMF. • Continue to support KCP manufacturing process development for W78/88-1 and subsequent user insertion including welding processes, machining for multiple components, electrical/electronic fabrication processes, etc. • Continue to support SNL neutron generator testers and production readiness to include electronic neutron generator as identified by the CMF. • Continue LLNL Canned Sub-Assembly and pit design, qualification and certification, initial systems development and deployment, and nondestructive evaluation for W78 first user and subsequent user insertion as identified by the CMF. • Continue Y-12 modernizations in radiography, dimensional inspection, and machine tool as well as metal component certification for B61-12. • Continue SNL external production for the W88 ALT 370. • Continue supporting radar component maturation for the W88 ALT 370.	**155,165** **150,169** **130,252** **101,389**

Supporting Information

Capital Operating Expenses [a]

Capital Operating Expenses Summary

(Dollars in Thousands)

	FY 2012 Enacted	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Capital Operating Expenses				
General Plant Projects	0	0	0	0
Capital Equipment	800	800	818	836
Total, Capital Operating Expenses	**800**	**800**	**818**	**836**

Outyear Capital Operating Expenses Summary

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
Capital Operating Expenses					
General Plant Projects	0	0	0	0	0
Capital Equipment	836	854	873	892	912
Total, Capital Operating Expenses	**836**	**854**	**873**	**892**	**912**

[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.

Other Supporting Information

Major Items of Equipment (MIEs)

(Dollars in Thousands)

	Total	Prior Years	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Microwave Deployment, Y-12 National Security Complex					
TEC	18,004	15,613	2,391	0	0
OPC	3,779	3,294	421	64	0
TPC, Microwave Deployment, Y-12 National Security Complex	**21,783**	**18,907**	**2,812**	**64**	**0**
Total All MIEs					
Total, TEC	18,004	15,613	2,391	0	0
Total, OPC	3,779	3,294	421	64	0
TPC, All MIEs	**21,783**	**18,907**	**2,812**	**64**	**0**

Nuclear Programs
Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Nuclear Programs			
Nuclear Operations Capability [a]			
Material Recycle and Recovery	0	0	127,731
Storage	0	0	37,500
Pu Metal Processing	0	0	33,447
Program Readiness	0	0	67,259
Total, Nuclear Operations Capability	**0**	**0**	**265,937**
Capabilities Based Invements [a]	0	0	39,558
Construction [a]	0	0	438,955
Total, Nuclear Programs	**0**	**0**	**744,450**

Out-Year Funding Schedule by Subprogram and Activity

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
Nuclear Programs [a]					
Nuclear Operations Capability [a]					
Material Recycle and Recovery	127,731	132,122	132,380	133,580	133,226
Storage	37,500	38,742	38,906	39,164	38,120
Pu Metal Processing	33,447	49,737	64,597	75,454	77,830
Program Readiness	67,259	67,582	68,722	70,038	70,505
Total, Nuclear Operations Capability	**265,937**	**288,183**	**304,605**	**318,236**	**319,681**
Capabilities Based Invements [a]	39,558	98,171	114,877	136,647	145,827
Construction [a]	438,955	607,742	772,083	753,639	867,673
Total, Nuclear Programs	**744,450**	**994,096**	**1,191,565**	**1,208,522**	**1,333,181**

[a] This represents the proposed control level.

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
National Defense Authorization Act for FY 2013 (P.L. 112-239)
The Continuing Appropriations Resolution, 2013 (P.L. 112-175)

Overview

Nuclear Programs, a new Government Performance and Results Act (GPRA) unit for FY 2014, supports the Weapons Activities of the National Nuclear Security Administration (NNSA) by performing mission-essential functions with a focus on Special Nuclear Material (SNM) processing, inventory management, and capability investments. The Nuclear Programs portfolio is comprised of individual subprograms, most of which were formerly part of Readiness in Technical Base and Facilities (RTBF). This new GPRA unit aligns supervision of DP programmatic missions for SNM and capabilities management; consolidates strategy development and budget controls; and coordinates investments in weapons activity sustainment and modernization.

Nuclear Programs accomplishes its mission by achieving the following goals: supply required quantities of program nuclear materials for immediate production use and reserve use in strategic inventories; recycle, recover, and store nuclear and select non-nuclear program materials; develop and execute SNM strategies for Defense Programs (DP) operations; sustain program skills through personnel training and development; develop and operate SNM processing technology improvements and functionality; and manage capability investments and line-item construction projects.

In order to more closely align the NNSA's organization with broadening mission requirements, other subprograms previously part of RTBF were transferred to Site Stewardship, managed by the newly formed Office of Infrastructure and Operations. Transferred functions include operations of facilities, maintenance, Containers, a portion of Program Readiness activities, specifically Nuclear Criticality Safety Program and Nuclear Safety R&D, and safety, regulatory, and compliance functions. The RTBF scope that remains in Nuclear Programs is uniquely focused on SNM and capability investments to support DP's mission areas.

Beginning in FY 2014, Nuclear Programs consists of three subprogram elements: (1) Nuclear Operations Capability (NOC), containing the Program Readiness, Material Recycle and Recovery (MRR), and Storage activities transferred from RTBF, and Plutonium Metal Processing, a new funding line to receive pits from Pantex and process plutonium to establish an inventory of purified metal alloy that will support manufacturing 30 pits per year and help mitigate the risk of the decision to defer the construction of Chemistry and Metallurgy Research Replacement-Nuclear Facility (CMRR-NF); (2) Capabilities Based Investments (CBI), which provides targeted investments to sustain capabilities supporting DP weapons activities; and (3) Construction, which manages the existing line-item construction projects previously within RTBF, to re-vitalize programmatic infrastructure.

The requested amount for this program for FY 2014 reflects anticipated management efficiency and workforce restructuring reductions of $32.7M for Weapons Activities. Studies to identify the specific program effects are underway. When these studies are completed, NNSA will work with Congress to make any necessary program or funding level adjustments.

Program Accomplishments and Milestones

This program is new for FY 2014. However, activities previously funded in RTBF accomplished the following in FY 2012: 1) Completed the DNFSB 00-1 commitments for weapons grade material re-containerization at Los Alamos National Laboratory (LANL); 2) Established the Nuclear Accident Dosimetry Lab at Nevada National Security Site (NNSS); 3) Opened and operated the National Criticality Experiments Research Center at NNSS; 4) Processed and disposed approximately 185 kg (Pu equivalent) material from LANL's PF-4 vault; 5) Accelerated shipment of U-233 to safe staging at NNSS; 6) Initiated B83 laser gas sampling at Pantex; 7) Received approval to operate the Radiological Laboratory Utility Office Building at LANL; 8) Completed seismic upgrade project scope at LANL's PF-4, and 9) Commissioned a new fast-framing, X-ray pinhole camera at SNL.

Program Planning and Management

Defense Programs retains the programmatic aspects of nuclear operations previously within RTBF, but distinct from the facilities and infrastructure focus. Vital to the accomplishment of DP missions, Nuclear Programs will include funding for the integration of material supply, inventory, storage, and processing to allow future planning for capabilities involving special processes, unique materials, program skills, and capital investments.

Strategic Management

Nuclear Programs will supply special materials for both current production requirements and future strategic

reserve inventories. In support of the DP's mission, Nuclear Programs will strategically manage capabilities and plan material supply during challenging transitions in SNM facilities and processes. The planning horizon includes the transition of uranium recycle and recovery from non-enduring facilities to a new Uranium Processing Facility (UPF), and the sustainment of plutonium capabilities during the closure of CMR and the deferral of CMRR-NF.

Nuclear Programs executes nuclear material strategies through the NOC. NOC will include an activity entitled "Plutonium Metal Processing" to execute the necessary activities in plutonium strategy priorities that include equipment modifications and room configuration changes in PF-4 that are needed to process plutonium metal well before it is needed for pit production. Program Readiness develops new strategies, enhances program skills, and sustains programmatic functionality including technology development, whereas MRR and Storage execute material management activities in support of these strategies. This Program Readiness scope is re-focused toward nuclear operations and strategy execution, instead of its previous emphasis on facilities and operations.

Major Out-year Priorities and Assumptions

Outyear funding levels for the Nuclear Programs total $4,727,364,000 for FY 2015 through FY 2018.

The out-year funding allows Nuclear Programs to meet DP material management capability and supply requirements. Key priorities include purification, sampling, and storage of program materials, the associated risk management during Uranium Capabilities Replacement Project (formerly Uranium Processing Facility) transition and CMRR-NF deferral, and the continued investment in DP capabilities. Significant outyear increases in Construction are required to support continued design and construction of UCRP.

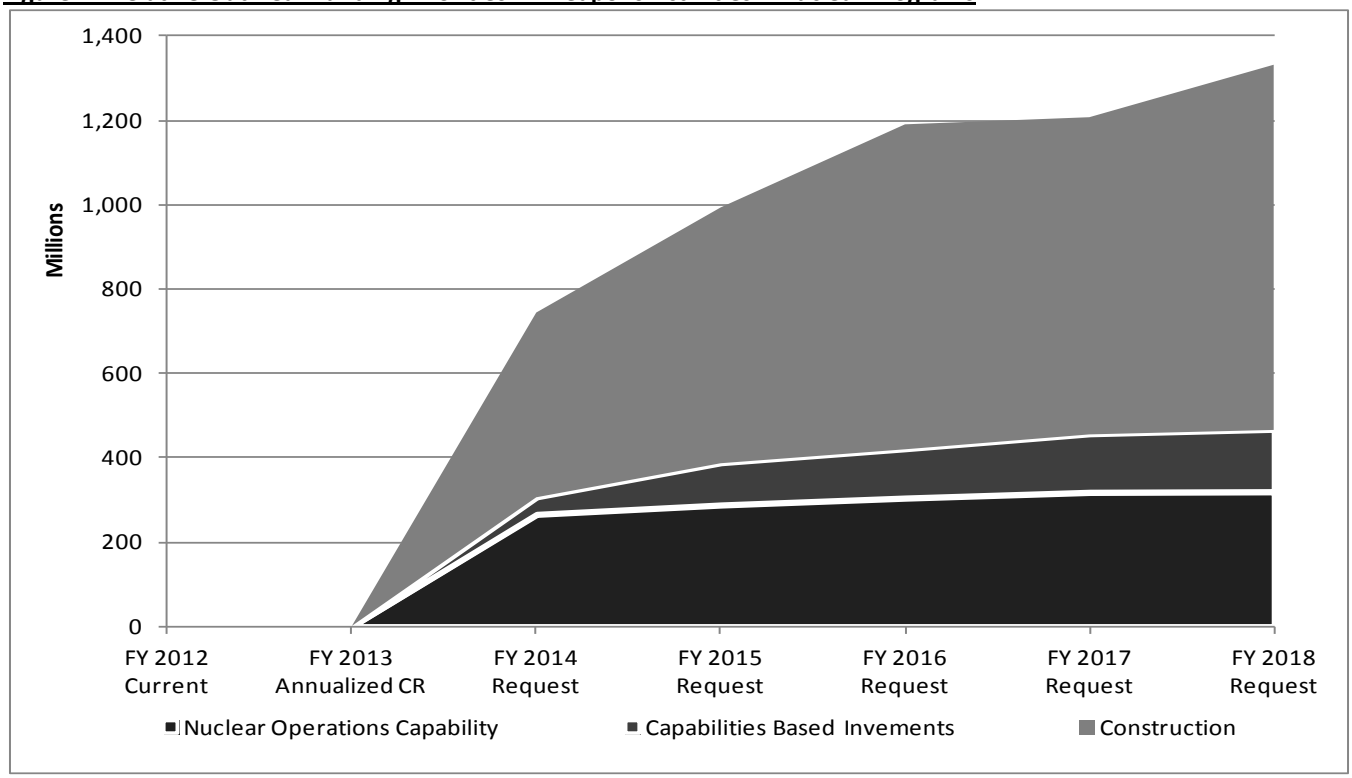
Program Goals and Funding

The goals of Nuclear Programs are to meet weapon program requirements with special nuclear materials in the correct forms, quantities, and timeframes, and ensure DP capabilities support production needs. To accomplish these goals, steady streams of funding are necessary to maintain existing processes, to develop replacement technologies, to provide for adequate material stockpiling, and to make investments to sustain capabilities.

Performance Measures

Performance Goal (Measure)	**Construction Projects (formerly Major Construction Projects)** - Execute construction projects within approved costs and schedules, as measured by the total percentage of projects with total estimated cost (TEC) greater than $20 million with a schedule performance index (ratio of budgeted cost of work performed to budgeted cost of work scheduled) and a cost performance index (ratio of budgeted cost of work performed to actual cost of work performed) between 0.9-1.15.		
Fiscal Year	**2012**	**2013**	**2014**
Target	N/A	N/A	90% of projects
Result			
Endpoint Target	Annually achieve 90% of baselined construction projects with TEC greater than $20M with actual SPI and CPI of 0.9-1.15 as measured against approved baseline definitions. Note: This performance measure was reported by the Readiness and Technical Base Facilities GPRA unit until FY 2014.		

Figure 1: Relative Out-Year Funding Priorities in Weapons Activities – Nuclear Programs



Current Budget Structure	FY 2012 Current	FY 2013 Annualized CR	Proposed Budget Structure	FY 2014 Request
Readiness in Technical Base and Facilities			**Nuclear Programs**	
Operating			**Nuclear Operations Capability**	
Program Readiness	73,962	93,500	Program Readiness	67,259
Material Recycle and Recovery	77,780	135,937	Material Recycle and Recovery	127,731
Containers	28,892	27,500	Containers	0
Storage	31,196	39,909	Storage	37,500
			Plutonium Metal Processing	33,447
Subtotal, Operating	211,830	296,846	Subtotal, Nuclear Operations Capability	265,937
	0	0	Capabilities Based Investments	39,558
Construction			Construction	
12-D-301, TRU Waste Facilities, LANL	9,881	24,204	12-D-301, TRU Waste Facilities, LANL	26,722
11-D-801, TA-55 Reinvestment Project, Phase 2, LANL	10,000	8,889	11-D-801, TA-55 Reinvestment Project, Phase 2, LANL	30,679
10-D-501, Nuclear Facility Risk Reduction, Y-12	35,387	17,909		
09-D-404, Test Capabilities Revitilization - II, SNL	25,168	11,332		
08-D-802, High Explosive Pressing Facility, PX	66,960	24,800		
07-D-140, Project Engineering & Design, VL	3,518	0		
07-D-220, Radioactive Liquid Waste Treatment Facility Upgrade Project, LANL	0	0	07-D-220, Radioactive Liquid Waste Treatment Facility Upgrade Project, LANL	55,719
06-D-141, PED, Uranium Processing Facility, Y-12	160,194	340,000	06-D-141, PED/Construction, Uranium Capabilities Replacement Project, Y-12	325,835
04-D-125, CMRR Project, LANL	200,000	0		0
Subtotal, RTBF: Construction	511,108	427,134	Subtotal, NP: Construction	438,955
Subtotal, Readiness in Technical Base and Facilities	**722,938**	**723,980**	**Total, Nuclear Programs**	**744,450**

Explanation of Funding and/or Program Changes

	(Dollars in Thousands)		
	FY 2013 Annualized CR	FY 2014 Request	FY 2014 Request vs. FY 2013 Annualized CR
Nuclear Operations Capability	**0**	**265,937**	**+265,937**

This subprogram includes Program Readiness, Material Recycle and Recovery, Storage, and the newly created Plutonium Metal Processing.

Increases reflect a transfer of Program Readiness to the Nuclear Operations Capability and support re-defined program scope within this activity. Program Readiness will develop and execute nuclear material strategies; sustain and enhance program skills; and conduct technology research, development, and deployment across the enterprise.

The MRR increases at Los Alamos National Laboratory (LANL) are for the accelerated PF-4 vault de-inventory which started in FY 2013, and the consolidation of nuclear materials from the Chemistry and Metallurgy Research (CMR) facility. Increases at Y-12 National Security Complex (Y-12) will support full requirements for Highly Enriched Uranium (HEU) metal purification, including deployment of new processing equipment such as Electro-refining Cells, equipment upgrades at the Oxide Conversion Facility, and implementation of risk reduction activities that support both HEU and Lithium production.

The Storage Program increases at Pantex Plant will support non-nuclear material disposition activities and increased capabilities to perform characterization on legacy components in storage. Increased capacity will be gained through investments in additional pit surveillance equipment (CoLOSSIS High Resolution Computed Tomography). Y-12 Area 5 de-inventory scope has also increased to support transition of Building 9212 operations to the Uranium Processing Facility (UPF).

Plutonium Metal Processing includes equipment modification and re-configuration activities in PF-4 to support delivery of pits from Pantex and receipt at LANL; optimization of containers and Office of Secure Transportation (OST) resources; and pit disassembly, size reduction and metal purification activities.

The requested amount for Nuclear Operations Capability reflects anticipated management efficiencies and workforce restructuring reductions of $11.7M.

	(Dollars in Thousands)		
	FY 2013 Annualized CR	FY 2014 Request	FY 2014 Request vs. FY 2013 Annualized CR
Capabilities Based Investments	**0**	**39,558**	**+39,558**
Increases provide targeted, strategic investments for life-extension and modernization of enduring capabilities needed to sustain Defense Programs weapons activities and reduce risk to the mission. CBI funds projects across the enterprise that sustain, replace or enhance capabilities needed for Defense Programs mission execution and future weapons activities. CBI serves as a corollary to the Line Items Construction to fund projects not appropriate for execution as line items.			
The requested amount for Capabilities Based Investments reflects anticipated management efficiencies and workforce restructuring reductions of $1.7M.			
Construction	**0**	**438,955**	**+438,955**
Funding in FY 2014 will support several key Construction projects at the identified sites.			
At Y-12, requested funding will continue design activities for the Uranium Capabilities Replacement Project (UCRP), and will set remaining performance baselines and execute some construction activities for non-nuclear subprojects. The performance baseline for the Nuclear Facility subproject will be approved in FY 2014.			
At LANL, requested funding will continue design and begin construction of the Radioactive Liquid Waste Treatment Facility (Low Level Liquid Waste Treatment Facility) and Transuranic Liquid Waste Treatment Facility. Funding for the TA-55 Reinvestment Project, Phase 2 will be completed in FY 2014.			
The requested amount for Nuclear Programs Construction reflects anticipated management efficiencies and workforce restructuring reductions of $19.3M.			
Total Funding Change, Nuclear Programs	**0**	**744,450**	**+744,450**

Nuclear Operations Capability
Overview

Nuclear Operations Capability provides the critical support for the safe, secure and effective processing and storage of nuclear materials. The scope includes Material Recycle and Recovery (MRR), Storage activities, new scope for Plutonium Metal Processing, and Program Readiness. The Containers subprogram has been transferred to Site Stewardship starting in FY 2014.

The Nuclear Operations Capability subprogram, through MRR, 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. MRR also provides for an increased pace of activities in the PF-4 vault to consolidate and disposition excess materials to free up space for program needs.

Through Storage activities, the subprogram provides effective storage and management of pits, plutonium, enriched and depleted uranium, lithium, tritium, heavy water, weapons components and other materials.

In the FY 2013 Annualized CR level, the NNSA deferred construction of CMRR-NF for at least five years. This decision was made in consultation with the Department of Defense and allows NNSA to focus on successful execution of other high-priority activities such as the Uranium Capabilities Replacement Project (UCRP, formerly known as the Uranium Processing Facility project) project and the B61 Life Extension Program (LEP). As a result of deferral, NNSA staff members continue to work with colleagues across the enterprise to develop a plutonium strategy to maintain continuity in DP's plutonium capabilities. Initial steps to implement the plutonium strategy will be executed through a combination of Program Readiness and the new Plutonium Metal Processing subprogram.

Program Readiness will continue to implement multi-year strategies to provide capabilities (skilled worker expertise, advanced technologies, and innovative approaches) that support the programmatic needs of DP. The program is defined to focus more on developing nuclear program strategies, expanding program skill development to more sites, and enhancing programmatic functionality with technology development. This improved focus will provide decreased emphasis on facility, infrastructure, and cross-cutting objectives.

The Plutonium Metal Processing subprogram will provide an inventory of purified plutonium alloy required to meet future pit manufacturing deliverables. This increased scope helps ease constraints on Analytical Chemistry (AC) capacity and reduce out-year risk to achieve capacity targets. This risk is elevated as a result of the deferral of the CMRR-NF construction project and the planned cessation of program operations in the original CMR in approximately 2019. The scope also provides for the selective removal of pits out of Pantex stores for processing at LANL. By processing an inventory of plutonium metal ahead of time, the expected gap in AC capacity can be minimized by having pre-characterized metal available to support production. The initial year (FY 2014) will use available resources to develop detailed plans to transfer stored pits from Pantex to LANL, re-establish capabilities and increase capacities in processing lines, re-configure PF-4, characterize product, procure expendable hardware and begin staffing up. Storage options for the program will also be examined. The intent is to add people and equipment resources in a balanced approach to achieve full capacity in three years, as we ramp up to support a capacity of up to 30 newly manufactured pits per year by 2021.

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.
- Supports LEPs and limited life programs for Directed Stockpile Work through material stabilization, decontamination, repackaging, and recycling.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
Nuclear Operations Capability		
FY 2012	• A portion of these activities were performed under the Readiness in Technical Base and Facilities in FY 2012.	**0**
FY 2013	• A portion of these activities were performed under the Readiness in Technical Base and Facilities in FY 2013.	**0**
FY 2014	• Nuclear Operations Capability provides the critical support for the safe, secure and effective processing and storage of nuclear materials. The scope includes Material Recycle and Recovery (MRR), Storage activities, new scope for Plutonium Metal Processing, and Program Readiness.	**265,937**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Nuclear Operations Capability provides the critical support for the safe, secure and effective processing and storage of nuclear materials. The scope includes Material Recycle and Recovery (MRR), Storage activities, new scope for Plutonium Metal Processing, and Program Readiness.	**288,183** **304,605** **318,236** **319,681**
Material Recycle and Recovery		
FY 2012	• These activities were performed under the Readiness in Technical Base and Facilities in FY 2012.	**0**
FY 2013	• These activities were performed under the Readiness in Technical Base and Facilities in FY 2013.	**0**
FY 2014	• Provides for recycling and recovery of Plutonium, enriched Uranium, Lithium and Tritium from fabrication and assembly operations, limited life components, and dismantlement of weapons and nuclear components. • Implements new or improved processes for fabrication and recovery operations, material stabilization, conversion, and in-process storage. • Recycles and purifies materials to meet specifications for safe, secure, and environmentally acceptable storage, and to meet the directive schedule for tritium reservoir refills, and to support the increased workload associated with LEP production rates, additional weapon surveillance activities, increased piece part disassemblies and increases in Campaign and Sustainment work in the nuclear facilities. o At LANL, activities include accelerated material stabilization, repackaging, and excess materials management to de-inventory PF-4 vault, nuclear materials information management, the Special Recovery Line, Confinement Vessel Disposition, CMR de-inventory, and nuclear materials planning and reporting. Accelerated vault de-inventory reduces nuclear safety risks and supports current and future needs for material storage associated with the Advanced Recovery and Integrated Extraction System (ARIES), Pu^{238} operations, DSW, Campaign and other defense program missions in PF-4. Vault activities include assay, storage, packaging, transportation and waste disposal, as well as alternatives for processing and storage of LANL materials at Y-12, SRS, and NNSS will also be evaluated and optimized. 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, and processing enriched	**127,731**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	uranium chips and scraps, as well as chemical conversion of lithium, and lithium salvage operations. MRR also funds the Central Scrap Management Office that manages the receipt, storage, and shipment of enriched uranium scrap and the Precious Metals Business Center that provides a cost-effective service to many users within the DOE complex.	
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Provides base capability and capacity across production plants and national laboratories for recycling and recovery of plutonium, uranium, lithium, tritium and other materials consistent with SSMP and P&PD. LANL vault de-inventory scope increases from FY14 levels. Y-12 scope decreases as MIE projects are executed.	**132,122** **132,380** **133,580** **133,226**
Storage		
FY 2012	• These activities were performed under the Readiness in Technical Base and Facilities in FY 2012.	**0**
FY 2013	• These activities were performed under the Readiness in Technical Base and Facilities in FY 2013.	**0**
FY 2014	• Provides for effective storage and management of 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. • Identifies plutonium storage and pit disposition alternatives supporting future LEPs. • At Pantex, activities include long-term storage of special nuclear materials, which involved planning, engineering, design, and start-up activities; processing and repackaging materials for safe storage; storage activities for the strategic reserve; national security inventory thermal monitoring and characterizations; disposition of legacy materials; and nuclear materials management, including planning, assessment, and forecasting nuclear material requirements. Funding includes pit surveillance and provides for the procurement and installation of the second High Resolution Computed Tomography capability. • At Y-12, activities include the management and storage of uranium, lithium, and other nuclear and weapons materials, including the nation's strategic reserve of HEU. The Storage program supports the loading, operating, and maintaining of HEU Materials Facility. This program also provides the long-term planning and analysis of materials required for the Y-12 manufacturing strategy in support of the nuclear weapons stockpile. • Continues to support the emphasis on nuclear material consolidation and de-inventory activities across the nuclear enterprise.	**37,500**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Provides base capability and capacity across production plants and national laboratories for storage of plutonium, uranium, lithium, tritium and other materials consistent with SSMP and P&PD. Provides additional funding to Y-12 to support Area 5 de-inventory and transition to UCRP.	**38,742** **38,906** **39,164** **38,120**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Plutonium Metal Processing		
FY 2012	• This activity is a new funding line in FY 2014.	**N/A**
FY 2013	• This activity is a new funding line in FY 2014.	**N/A**
FY 2014	• Provide mission-critical capabilities and capacities to minimize risks in meeting future pit manufacturing deliverables. Key scope includes: o Detailed project planning across Pantex, NNSS and LANL sites and with Office of Secure Transportation. o Prepare pits in storage at Pantex for shipment to LANL. o Disassemble, size reduce, purify, and characterize plutonium metal. o Produce, characterize and containerize plutonium alloy. o Re-configuring floor space and glove box lines in PF-4. o Process equipment and container procurements. o Process equipment qualification, operational readiness and turnover. o Authorization Basis changes at NNSS and LANL. o Increase throughput in the Special Recovery Line.	**33,447**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Provides for ramping up the number of pits transferred from Pantex to LANL and the processing of the plutonium to prepare it for future pit manufacturing use, consistent with the P&PD. Out year funding also supports a logical re-configuration of PF-4 processing to increase capacity for the plutonium handling and the characterization of the metal product prior to storage. Pit shipments and metal processing, including the metal characterization and qualification, continues during the period in support of future LEP pit production requirements.	**49,737** **64,597** **75,454** **77,830**
Program Readiness		
FY 2012	• These activities were performed under the Readiness in Technical Base and Facilities in FY 2012.	**0**
FY 2013	• These activities were performed under the Readiness in Technical Base and Facilities in FY 2013.	**0**
FY 2014	• Develop programmatic strategies and execute technology investments for SNM and DP capabilities, including: o Material characterization and analytical chemistry capabilities at LANL due to the transition out of CMR and the deferral of construction of CMRR-NF. o Managing the continuity of uranium processing capabilities during the transition out of building 9212 at Y-12. o Establishment and execution of a long-range implementation plan for Tritium investments and an architecture for consolidating the GTS/Tritium enterprise. o Deployment of new technologies including: uranium purification, oxide conversion, and casting technologies at Y-12; and tritium recycling at SRS. o Nuclear material planning requirements, including analysis, forecasting and reporting functions and emergent analyses of stockpile materials. • Invest in human capital to sustain skills for essential program capabilities, for example: o At SRS, essential skills related to research and development at the tritium Research Laboratory, focusing on advanced technology for tritium extraction, handling, and storage. o At SNL, Qualification Alternatives to the Sandia Pulsed Reactor (QASPR) applications consistent with developing and maturing technology, and the	**67,259**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	Weapon Intern Program for nuclear weapon program skills. o At NNSS, test readiness, enhanced radiography, diagnostic development and other program related skills. o At LLNL, High Explosive handling and firing, and Radiological Hazards Controls. o At KCP, advance manufacturing equipment training and related essential program skills. • At Pantex, High Explosives (HE) including new techniques for synthesis and charge formation of both conventional and insensitive HE.	
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Out year funding supports continued investments in strategies, personnel, and/or equipment to modernize DP science and manufacturing capabilities. Focus will be on the transition of uranium processing and handling during facility transition at Y-12, and the continuity of plutonium chemistry and metallurgy during the transition out of CMR at LANL. Out year funding also focuses on reducing the risks in Tritium and High Explosive capabilities, and unique technologies at Sandia and NNSS in support of stockpile stewardship activities. Continued support of vital program skills across the complex will be provided.	**67,582** **68,772** **70,038** **70,505**

Capabilities Based Investments
Overview

This program implements a multi-year strategy to sustain, enhance or replace Defense Programs capabilities through focused investments supporting the core programmatic requirements of Defense Programs across the enterprise. These investments address needs beyond any single facility, Campaign, or weapon system and are essential to achieving program mission objectives. Over the years, some Defense Programs science and manufacturing capabilities have been lost or degraded due to aging, broken or outdated equipment and supporting systems. To support ongoing and future Defense Programs weapons activities, CBI will invest in projects to reduce risk to the mission and ensure that needed capabilities are available for LEPs and other mission work. The Capabilities Based Investments program provides a corollary to NNSA's Line Items by funding smaller projects to enhance or sustain critical DP capabilities across the enterprise.

CBI is an investment strategy that provides targeted, strategic investments for life-extension and modernization of enduring requirements needed to sustain Defense Programs capabilities. CBI will execute improvements needed to support validated DSW and Campaigns program requirements through a targeted and prioritized approach by leveraging management practices learned through previous successful programs.

Sequence
This is not applicable for this section.

Benefits
- Provides prioritized and "projectized" investments to modernize and extend the life of core nuclear weapons capabilities.
- Allows for nimble deployment of new technology early through responsive investments.
- Provides for the execution of projects that are not appropriate for execution as Line Items.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• This activity starts in FY 2014.	**0**
FY 2013	• This activity starts in FY 2014.	**0**
FY 2014	• Provides targeted, strategic investments for life-extension and modernization of enduring requirements needed to sustain Defense Program capabilities. CBI will provide funding to implement projects across the nuclear security enterprise, such as: o At LANL, critical Wet Vacuum System upgrades in TA-55 to support plutonium operations and upgrades in TA-11 to support environmental testing needs associated with the B61 LEP. o At LLNL, investments to support annual stockpile assessments and the W78/88 LEP. o At NNSS, DAF x-ray equipment replacement upgrades, and modernization of U1a infrastructure to support subcritical experiments. 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 SRS, revitalization of systems and equipment in H-Area New Manufacturing (HANM). o At Y-12, mission critical infrastructure needed to support continuity of	**39,558**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	enriched uranium capability and Direct Electrolytic Reduction (DER) deployment to support Uranium Oxide conversion to metal for use in CSA re-manufacturing.	
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Provides targeted, strategic investments for life-extension and modernization of enduring requirements needed to sustain Defense Programs' capabilities. CBI will provide funding to implement projects across the nuclear security enterprise including continued investments to: support the W78/88 LEP at LLNL, deploy DER investments at Y-12, revitalize the HANM at SRS, support B61 LEP environmental testing needs at LANL, and enable Defense Programs' mission across the enterprise. • The objective of FY 2014 is to establish CBI and acquaint field representatives with this focused program. Discussions with field representatives during FY 2013 indicate an increased demand for capability investments across the enterprise to support DP weapons activities in FY 2015 and beyond. Increases in CBI funding from FY 2015 to FY 2018 reflect this increase in demand.	**98,171** **114,877** **136,647** **145,827**

Construction
Overview

The Nuclear Programs 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 Defense Programs, and (2) development and execution of these projects within approved cost and schedule baselines.

The funding request for FY 2014 reflects the continued design and preparatory construction for the UCRP. Following construction of the UCRP 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. With the construction of CMRR-NF deferred for at least five years, design for CMRR Nuclear Facility was concluded at the end of Calendar Year 2012.

Sequence
This is not applicable for this section.

Benefits
- Supports sustainment and modernization of the nuclear security enterprise.
- Improves the responsiveness and/or functionality of the infrastructure and its technology base.
- Revitalizes the infrastructure of the nuclear security enterprise.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• These activities were performed under the Readiness in Technical Base and Facilities in FY 2012.	**0**
FY 2013	• These activities were performed under the Readiness in Technical Base and Facilities in FY 2013.	**0**
FY 2014	• Approve total project baseline for the UCRP at Y-12 and begin construction of UCRP nuclear facility. • Continue construction activities of the Radioactive Liquid Waste Treatment Facility Upgrade Project (Low Level Liquid Waste Treatment facility subproject). • Start design of the Radioactive Liquid Waste Treatment Facility Upgrade Project's Transuranic Liquid Waste Treatment facility subproject. • Start construction of TRU Waste Facility Phase B subproject.	**438,955**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• In FY 2015, start design of the High Explosive (HE) Science, Technology and Engineering, PX. • In FY 2015, start design of the PF-4/Radiological Laboratory/Utility/Office Building (RLUOB) Tunnel, LANL. • In FY 2015, start the TA-55 Reinvestment Project Phase III. • In FY 2015, complete construction of Nuclear Facility Risk Reduction, Y-12. • In FY 2016, complete construction of HE Pressing Facility, PX. • In FY 2016, for the TRU Waste Facility project, complete construction and close out the project in FY 2018. • In FY 2016, start design of the Lithium Production Facility, Y-12. • In FY 2016, start design of the Weapons Engineering Facility, SNL.	**607,742** **772,083** **753,639** **867,673**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	• In FY 2017, start design and construction of the following: o Energetic Materials Characterization, LANL. o Tritium Responsive Infrastructure Modifications (TRIM), SRS. o HE Component Fabrication & Qualification Facility, PX.	

Supporting Information

Capital Operating Expenses [a]

Capital Operating Expenses Summary

(Dollars in Thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Capital Operating Expenses			
General Plant Projects	0	0	13,200
Capital Equipment	0	0	13,216
Total, Capital Operating Expenses	**0**	**0**	**26,416**

Outyear Capital Operating Expenses Summary

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
Capital Operating Expenses					
General Plant Projects	13,200	13,490	13,787	14,091	14,400
Capital Equipment	13,216	13,507	13,804	14,108	14,418
Total, Capital Operating Expenses	**26,416**	**26,997**	**27,591**	**28,199**	**28,818**

[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.

Supporting Information

Construction Projects Summary

Construction Projects

(Dollars in Thousands)

	Total	Prior Years [a]	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
12-D-301, TRU Waste Facilities, LANL					
TEC	83,990	14,665	0	0	26,722
OPC	22,911	7,378	0	0	3,593
TPC, 12-D-301, TRU Waste Facilities, LANL	**106,901**	**22,043**	**0**	**0**	**30,315**
11-D-801, TA-55 Reinvestment Project, Phase 2, LANL					
TEC	84,273	34,705	0	0	30,679
OPC	15,627	7,367	0	0	1,783
TPC, 11-D-801, TA-55 Reinvestment Project, Phase 2, LANL	**99,900**	**42,072**	**0**	**0**	**32,462**
07-D-220, Radioactive Liquid Waste Treatment Facility Upgrade, LANL [b]					
TEC	184,992	44,992	0	0	55,719
OPC	29,078	10,733	0	0	2,179
TPC, 07-D-220, Radioactive Liquid Waste Treatment Facility Upgrade, LANL [b]	**214,070**	**55,725**	**0**	**0**	**57,898**
06-D-141, PED/Construction, Uranium Capabilities Replacement Project, Y-12					
TEC	TBD	347,991	0	0	325,835
OPC	TBD	95,128	0	0	3,000
TPC, 06-D-141, PED/Construction, Uranium Capabilities Replacement Project, Y-12	**TBD**	**443,119**	**0**	**0**	**328,835**
Total All Construction Projects					
Total, TEC	353,255	94,362	0	0	438,955
Total, OPC	67,616	373,469	0	0	10,555
TPC, All Construction Projects	**420,871**	**467,831**	**0**	**0**	**449,510**

[a] Funding was appropriated under RTBF, not Nuclear Programs.

[b] $30,332,282 in prior year appropriations were rescinded in FY 2011. Future funding requirements for RLWTF are yet to be determined.

Outyear Construction Projects

(Dollars in Thousands)

	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request	Outyears to Completion
17-D-XXX, HE Component Fabrication and Qualification Facility, PX					
TEC	0	0	19,174	27,469	0
OPC	0	0	TBD	TBD	0
TPC, 17-D-XXX, HE Component Fabrication and Qualification Facility, PX	**0**	**0**	**19,174**	**27,469**	**0**
17-D-XXX, Tritium Responsive Infrastructure, SRS					
TEC	0	0	8,367	32,048	0
OPC	0	0	TBD	TBD	0
TPC, 17-D-XXX, Tritium Responsive Infrastructure, SRS	**0**	**0**	**8,367**	**32,048**	**0**
17-D-XXX, Energentic Materials Characterization, LANL					
TEC	0	0	6,741	0	0
OPC	0	0	TBD	TBD	0
TPC, 17-D-XXX, Energentic Materials Characterization, LANL	**0**	**0**	**6,741**	**0**	**0**
16-D-XXX, Weapons Engineering Facility, SNL					
TEC	0	32,860	65,543	58,143	0
OPC	0	TBD	TBD	TBD	0
TPC, 16-D-XXX, Weapons Engineering Facility, SNL	**0**	**32,860**	**65,543**	**58,143**	**0**
16-D-XXX, Lithium Production Facility, Y-12					
TEC	0	28,166	0	50,361	0
OPC	0	TBD	0	TBD	0
TPC, 16-D-XXX, Lithium Production Facility, Y-12	**0**	**28,166**	**0**	**50,361**	**0**
15-D-XXX, PF4/RLUOB Tunnel, LANL					
TEC	51,535	32,614	0	0	0
OPC	TBD	TBD	0	0	0
TPC, 15-D-XXX, PF4/RLUOB Tunnel, LANL	**51,535**	**32,614**	**0**	**0**	**0**
15-D-XXX, TA-55 Reinvestment Project Phase III, LANL					
TEC	26,609	35,677	30,920	28,385	0
OPC	TBD	TBD	TBD	TBD	0
TPC, 15-D-XXX, TA-55 Reinvestment Project Phase III, LANL	**26,609**	**35,677**	**30,920**	**28,385**	**0**

	(Dollars in Thousands)				
	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request	Outyears to Completion
15-D-XXX, HE Science & Engineering Facility, PX					
TEC	11,256	0	18,594	30,315	0
OPC	TBD	0	TBD	TBD	0
TPC, 15-D-XXX, HE Science & Engineering Facility, PX	**11,256**	**0**	**18,594**	**30,315**	**0**
12-D-301, TRU Waste Facilities, LANL					
TEC	5,000	0	0	0	0
OPC	3,580	3,322	702	0	0
TPC, 12-D-301, TRU Waste Facilities, LANL	**8,580**	**3,322**	**702**	**0**	**0**
11-D-801, TA-55 Reinvestment Project, Phase 2, LANL					
TEC	0	0	0	0	0
OPC	2,125	1,000	551	0	0
TPC, 11-D-801, TA-55 Reinvestment Project, Phase 2, LANL	**2,125**	**1,000**	**551**	**0**	**0**
07-D-220, Radioactive Liquid Waste Treatment Facility Upgrade, LANL					
TEC	14,171	55,977	0	0	0
OPC	3,000	2,402	1,500	1,500	5,426
TPC, 07-D-220, Radioactive Liquid Waste Treatment Facility Upgrade, LANL	**17,171**	**58,379**	**1,500**	**1,500**	**5,426**
06-D-141, PED/Construction, Uranium Capabilities Replacement Project, Y-12					
TEC	486,171	573,604	587,300	616,952	TBD
OPC	13,000	13,185	17,000	24,000	TBD
TPC, 06-D-141, PED/Construction, Uranium Capabilities Replacement Project, Y-12	**499,171**	**586,789**	**604,300**	**640,952**	**0**
Total All Construction Projects					
Total, TEC	594,742	758,898	736,639	843,673	0
Total, OPC	21,705	19,909	19,753	25,500	5,426
TPC, All Construction Projects	**616,447**	**778,807**	**756,392**	**869,173**	**5,426**

Other Supporting Information

Major Items of Equipment (MIEs)

(Dollars in Thousands)

	Total	Prior Years	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Colossis, PX					
TEC	6,100	0	620	0	4,200
OPC	1,800	0	0	0	900
TPC, Colossis, PX	**7,900**	**0**	**620**	**0**	**5,100**
Electrorefiners, Y-12					
TEC	15,000	0	0	1,000	7,000
OPC	5,000	0	0	1,500	1,500
TPC, Electrorefiners, Y-12	**20,000**	**0**	**0**	**2,500**	**8,500**
Direct Electrolytic Reduction, Y-12					
TEC	15,000	0	0	0	200
OPC	5,000	0	0	0	800
TPC, Direct Electrolytic Reduction, Y-12	**20,000**	**0**	**0**	**0**	**1,000**
LINAC, Device Assembly Facility					
TEC	2,000	0	0	575	1,425
OPC	100	0	0	25	75
TPC, LINAC, Device Assembly Facility	**2,100**	**0**	**0**	**600**	**1,500**
Total All MIEs					
Total, TEC	38,100	0	620	1,575	12,825
Total, OPC	11,900	0	0	1,525	3,275
TPC, All MIEs	**50,000**	**0**	**620**	**3,100**	**16,100**

*Note: FY 2012 and FY 2013 amounts were previously funded by RTBF. OPCs are funded under Site Stewardship for FY 2014.

Outyear Major Items of Equipment (MIEs)

(Dollars in Thousands)

	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request	Outyears to Completion
Colossis, PX					
TEC	1,000	100	180	0	0
OPC	400	250	250	0	0
TPC, Colossis, PX	**1,400**	**350**	**430**	**0**	**0**
Electrorefiners, Y-12					
TEC	6,000	1,000	0	0	0
OPC	1,000	1,000	0	0	0
TPC, Electrorefiners, Y-12	**7,000**	**2,000**	**0**	**0**	**0**
Direct Electrolytic Reduction, Y-12					
TEC	800	7,000	6,000	1,000	0
OPC	1,200	1,000	1,000	1,000	0
TPC, Direct Electrolytic Reduction, Y-12	**2,000**	**8,000**	**7,000**	**2,000**	**0**
Total All MIEs					
Total, TEC	7,800	8,100	6,180	1,000	0
Total, OPC	2,600	2,250	1,250	1,000	0
TPC, All MIEs	**10,400**	**10,350**	**7,430**	**2,000**	**0**

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

1. Significant Changes

The most recent DOE O 413.3B approved Critical Decision (CD) for the overall project is CD-1, which was approved on August 10, 2010 with a preliminary cost range of $71,000 to $124,000 and a preliminary CD-4 range of FY 2015 to FY 2018.

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

12-D-301-02: Phase B, Staging and Characterization Facilities
The most recent DOE O 413.3B approved CD for Phase B, Staging and Characterization Facilities, is CD-2, Approve Performance Baseline, which was approved on February 28, 2013, to allow time for the project to address comments from the Defense Nuclear Facilities Safety Board received in June 2012, with TPC of $99,166 and CD-4 date of January 31, 2018. Additional engineered controls were found to be necessary to mitigate the potential impact of vehicles heavier than 10,000 pounds traveling along the major road next to the facility.

The Other Project Costs (OPCs) from CD-0 in February 2006 through FY 2012 have been updated to reflect actual costs. This is an update from the FY 2013 budget submittal. In addition, the OPCs for the out years have been updated to reflect the estimated cost for starting up the Hazard Category 2 nuclear facilities based on lessons learned from other sites. The cost and schedule were reviewed and accepted by an Independent Project Review Team, which conducted the review in September 2012.

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 1st quarter of 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 is an update of the FY 2013 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	02/07/2006	08/10/2010	TBD	TBD	TBD	TBD	N/A	N/A
FY 2013	02/07/2006	08/10/2010	6/15/2013	8/22/2012	08/23/2013	08/22/2017	N/A	N/A
FY 2014	02/07/2006	08/10/2010	08/15/2014	02/28/2013	08/15/2014	01/31/2018	N/A	N/A

12-D-301-01: 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	02/07/2006	08/10/2010	07/06/2011	03/09/2011	01/09/2012	02/01/2013	N/A	N/A
FY 2013	02/07/2006	08/10/2010	09/30/2011	07/18/2011	02/24/2012	07/09/2013	N/A	N/A
FY 2014	02/07/2006	08/10/2010	09/30/2011	07/18/2011	02/13/2012	12/20/2012	N/A	N/A

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

(fiscal quarter or date)

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

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

	(Fiscal Quarter or Date)
	CD-3A
FY 2014:	4/30/2013

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

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
FY 2014	18,183	65,807	83,990	22,911	N/A	22,911	106,901

12-D-301-01: 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
FY 2014	2,272	5,312	7,584	151	N/A	151	7,735

12-D-301-02: 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
FY 2014	15,911	60,495	76,406	22,760	N/A	22,760	99,166

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.

12-D-301-01: 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. Phase A was completed ahead of the baseline schedule and under the baseline budget.

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

The scope involves the construction and installation of facilities to store and infrastructure to support characterization of 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 continuing design activities funded under 07-D-140 for Phase B. FY 2014 activities include completing design activities and starting construction activities for Phase B.

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 in 1Q FY 2014. 3. Construction may begin on a Class 3 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 required by DOE Order 413.3B.

No construction, excluding for approved long lead procurement, will be performed for Phase B until the project CD-3 has been approved.

5. Financial Schedule

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

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED (07-D-140-02)			
FY 2008	2,272	2,272	0
FY 2009	0	0	0
FY 2010	0	0	0
FY 2011	0	0	2,272
Total, PED (07-D-140-02)	2,272	2,272	2,272
Construction			
FY 2012	5,312	5,312	3,818
FY 2013	0	0	1,494
Total, Construction	5,312	5,312	5,312
TEC			
FY 2008	2,272	2,272	0
FY 2009	0	0	0
FY 2010	0	0	0
FY 2011	0	0	2,272
FY 2012	5,312	5,312	3,818
FY 2013	0	0	1,494
Total, TEC	7,584	7,584	7,584
Other Project Cost (OPC)			
OPC except D&D			
FY 2012	50	50	50
FY 2013	101	101	101
Total, OPC except D&D	151	151	151
Total Project Cost (TPC)			
FY 2008	2,272	2,272	0
FY 2009	0	0	0
FY 2010	0	0	0
FY 2011	0	0	2,272
FY 2012	5,362	5,362	3,868
FY 2013	101	101	1,595
Total, TPC	7,735	7,735	7,735

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

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED (07-D-140-02)			
FY 2008	180	180	0
FY 2009	7,223	7,223	0
FY 2010	0	0	349
FY 2011	4,990	4,990	3,898
FY 2012	3,518	3,518	7,261
FY 2013	0	0	4,210
FY 2014	0	0	193
Total, PED (07-D-140-02)	15,911	15,911	15,911
Construction			
FY 2012	4,569	4,569	0
FY 2013	24,204	24,204	2,574
FY 2014	26,722	26,722	40,736
FY 2015	5,000	5,000	17,185
Total, Construction	60,495	60,495	60,495
TEC			
FY 2008	180	180	0
FY 2009	7223	7223	0
FY 2010	0	0	349
FY 2011	4990	4990	3898
FY 2012	8,087	8,087	7,261
FY 2013	24,204	24,204	6,784
FY 2014	26,722	26,722	40,929
FY 2015	5,000	5,000	17,185
Total, TEC	76,406	76,406	76,406
Other Project Cost (OPC)			
OPC except D&D			
FY 2006	806	806	806
FY 2007	1,883	1,883	1,883
FY 2008	993	993	993
FY 2009	357	357	357
FY 2010	1,829	1,829	1,829
FY 2011	1,510	1,510	1,510
FY 2012	1,289	1,289	1,289
FY 2013	2,896	2,896	2,896
FY 2014	3,593	3,593	3,593
FY 2015	3,580	3,580	3,580
FY 2016	3,322	3,322	3,322
FY 2017	702	702	702
Total, OPC except D&D	22,760	22,760	22,760

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Total Project Cost (TPC)			
FY 2006	806	806	806
FY 2007	1,883	1,883	1,883
FY 2008	1,173	1,173	993
FY 2009	7,580	7,580	357
FY 2010	1,829	1,829	2,178
FY 2011	6,500	6,500	5,408
FY 2012	9,376	9,376	8,550
FY 2013	27,100	27,100	9,680
FY 2014	30,315	30,315	44,522
FY 2015	8,580	8,580	20,765
FY 2016	3,322	3,322	3,322
FY 2017	702	702	702
Total, TPC	99,166	99,166	99,166

Total Project

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED (07-D-140-02)			
FY 2008	2,452	2,452	0
FY 2009	7,223	7,223	0
FY 2010	0	0	349
FY 2011	4,990	4,990	6,170
FY 2012	3,518	3,518	7,261
FY 2013	0	0	4,210
FY 2014	0	0	193
Total, PED (07-D-140-02)	18,183	18,183	18,183
Construction			
FY 2012	9,881	9,881	3,818
FY 2013	24,204	24,204	4,068
FY 2014	26,722	26,722	40,736
FY 2015	5,000	5,000	17,185
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	11,079
FY 2013	24,204	24,204	8,278
FY 2014	26,722	26,722	40,929
FY 2015	5,000	5,000	17,185
Total, TEC	83,990	83,990	83,990

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Other Project Cost (OPC)			
OPC except D&D			
FY 2006	806	806	806
FY 2007	1,883	1,883	1,883
FY 2008	993	993	993
FY 2009	357	357	357
FY 2010	1,829	1,829	1,829
FY 2011	1,510	1,510	1,510
FY 2012	1,339	1,339	1,339
FY 2013	2,997	2,997	2,997
FY 2014	3,593	3,593	3,593
FY 2015	3,580	3,580	3,580
FY 2016	3,322	3,322	3,322
FY 2017	702	702	702
Total, OPC except D&D	22,911	22,911	22,911
Total Project Cost (TPC)			
FY 2006	806	806	806
FY 2007	1883	1883	1883
FY 2008	3,445	3,445	993
FY 2009	7,580	7,580	357
FY 2010	1,829	1,829	2,178
FY 2011	6,500	6,500	7,680
FY 2012	14,738	14,738	12,418
FY 2013	27,201	27,201	11,275
FY 2014	30,315	30,315	44,522
FY 2015	8,580	8,580	20,765
FY 2016	3,322	3,322	3,322
FY 2017	702	702	702
Total, TPC	106,901	106,901	106,901

6. Details of Cost Estimate

12-D-301-01 Phase A, Infrastructure

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED) (07-D-140-02)			
Design	2,272	2,967	2,967
Contingency	0	169	169
Total, PED	2,272	3,136	3,136
Construction			
Site Preparation	5,312	4,392	4,392
Other Construction	0	0	0
Contingency	0	1,245	1,245
Total, Construction	5,312	5,637	5,637
Total, TEC	7,584	8,773	8,773
Contingency, TEC	0	1,414	1,414
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Design[a]	0	0	0
Project Support	50	66	66
Start-up	101	119	119
Contingency	0	255	255
Total, OPC except D&D	151	440	440
D&D			
D&D	N/A	N/A	N/A
Contingency	N/A	N/A	N/A
Total, D&D	N/A	N/A	N/A
Total, OPC	151	440	440
Contingency, OPC	0	255	255
Total, TPC	7,735	9,213	9,213
Total, Contingency	0	1,669	1,669

[a] Conceptual Design is funded under Phase B.

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

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED) (07-D-140-02)			
Design	14,699	11,708	14,699
Contingency	1,212	3,339	1,212
Total, PED	15,911	15,047	15,911
Construction			
Site Preparation	0	2,381	0
Equipment	4,337	6,000	4,337
Other Construction	34,758	37,140	34,758
Federal Project Support[a]	2,000	0	2,000
Contingency	19,401	14,651	19,904
Total, Construction	60,496	60,171	60,496
Total, TEC	76,406	75,218	76,406
Contingency, TEC	20,613	17,990	20,613
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	3,005	1,500	3,005
Conceptual Design	2,857	2,700	2,857
Project Support	5, 494	0	5,594
Start-up	8,194	3,815	8,194
Contingency	3,210	1,545	3,210
Total, OPC except D&D	22,760	9,560	22,760
D&D			
D&D	N/A	N/A	N/A
Contingency	N/A	N/A	N/A
Total, D&D	N/A	N/A	N/A
Total, OPC	22,760	9,560	22,760
Contingency, OPC	3,210	1,545	3,210
Total, TPC	99,166	84,778	99,166
Total, Contingency	23,823	19,535	23,823

[a] Needed for federal technical support through Independent Project Reviews required by DOE Order 413.3B, and to conduct technical reviews of design and construction documents in support of the Federal Project Director.

Total Project

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED) (07-D-140-02)			
Design	16,971	14,675	16,971
Contingency	1,212	3,508	1,212
Total, PED	18,183	18,183	18,183
Construction			
Site Preparation	5,311	6,772	5,311
Equipment	4,337	6,000	4,337
Other Construction	34,758	37,140	34,758
Federal Project Support[a]	2,000	0	2,000
Contingency	19,401	15,895	19,401
Total, Construction	65,807	65,807	65,807
Total, TEC	83,990	83,990	83,990
Contingency, TEC	20,613	19,403	20,613
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	3,005	1,500	3,005
Conceptual Design	2,857	2,700	2,857
Project Support	5,544	0	5,544
Start-up	8,295	4,000	8,295
Contingency	3,211	1,800	3,211
Total, OPC except D&D	22,911	10,000	22,911
D&D			
D&D	N/A	N/A	N/A
Contingency	N/A	N/A	N/A
Total, D&D	N/A	N/A	N/A
Total, OPC	22,911	10,000	22,911
Contingency, OPC	3,211	1,800	3,211
Total, TPC	106,901	93,990	106,901
Total, Contingency	23,824	21,203	23,824

[a] Needed for federal technical support through Independent Project Reviews required by DOE Order 413.3B, and to conduct technical reviews of design and construction documents in support of the Federal Project Director.

7. Schedule of Appropriation Requests

(dollars in thousands)

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

8. Related Operations and Maintenance Funding Requirements

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

(Related Funding Requirements)

(dollars in thousands)

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

9. Required D&D Information

Area	Square Feet
Area of new construction	29,500
Area of existing facility(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 the D&D of TA-54 is not the responsibility of the National Nuclear Security Administration and will be paid by the Office of Environmental Management (EM) Program. Area G cost will be part of the EM budget and responsibility.

10. Acquisition Approach

The project will be executed in two phases. Phase A will provide Site Development for Phase B Facilities. Both Phases 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. Phase B will provide the Facilities for the new TRU waste operations.

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

1. Significant Changes

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

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

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

The most recent DOE O 413.3B approved CD is CD-3 for Phase A, Approve Start of Construction, which was approved on November 22, 2011 with a Total Project Cost (TPC) of $13,654 and a CD-4 date of September 30, 2013, consistent with the latest approved baseline change on November 18, 2011. The revised scope includes seismic upgrade of one glovebox stand, installation of three Air Dryers and demolition of the fourth.

11-D-801-02 Phase B: Glovebox #2 and Confinement Doors
The most recent DOE O 413.3B approved CD is CD-3 for Phase B, Approve Start of Construction, which was approved on February 13, 2012, with TPC of $11,238 and CD-4 date of December 16, 2013, consistent with the latest approved baseline change on November 18, 2011. The revised scope includes seismic upgrade of one glovebox stand and the installation of six confinement doors.

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

The most recent DOE O 413.3B approved CD is CD-1, Approve Alternative Selection and Cost Range, which was approved on July 15, 2008 with a TPC not to exceed the overall project's preliminary cost range of $99,900. A performance baseline/approve start of construction (CD-2/3) is in planned for the second quarter of FY 2014. The Phase C project plan is being updated to reflect the revised funding profile for FY 2012 – FY 2015.

In September 2012, the Acquisition Executive approved a change in Phase C execution. This change consists of completing the final design and consolidating CD- 2 and 3. This approach aligns Phase C with the National Nuclear Security Administration Administrator's commitment to Congress to establish nuclear facility projects baseline when the design is at least 90 percent complete.

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 2013 PDS.

2. Design, Construction, and D&D Schedule

(fiscal quarter or date)

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

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

(fiscal quarter or date)

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

11-D-801-02 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
FY 2014	03/23/2005	07/15/2008	02/13/2012	06/03/2010	02/13/2012	1QFY2014	N/A	N/A

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

(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
FY 2014	03/23/2005	7/15/2008	2QFY2014	2Q FY 2014	2Q FY 2014	4Q FY 2017	1Q FY 2017	4Q FY 2017

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

[a] PED funds are used only for the preliminary design. Final design is performed with construction funds.
[b] The schedule for Phase C is only an estimate and consistent with the high end of the schedule ranges.

3. Baseline and Validation Status

(dollars in thousands)

	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
FY 2014	14,745	9,142	60,386	84,273	15,199	428	15,627	99,900

11-D-801-01 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
FY 2014	2,890	568	9,701	13,159	495	N/A	495	13,654

11-D-801-02 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
FY 2014	3,348	167	7,019	10,534	704	N/A	704	11,238

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

(dollars in thousands)

	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
FY 2014	8,507	8,407	43,666	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

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

current condition of the equipment, risk of failure to the worker, the environment, and the public, and risk of failure to programmatic and facility operations. To meet mission need objectives within an operating nuclear facility, the TRP project is being executed as three separate, distinct capital line item projects, TRP I, TRP II, and TRP III.

TRP II Overall Scope: Consists of seven (7) subprojects to be completed in three phases:

1. Replacement of Uninterruptible Power Supply
2. Refurbishment of Air Dryers
3. Replacement of Confinement Doors
4. Replacement of Criticality Alarms
5. Vault Water Tank Cooling System Upgrades
6. Replacement/Refurbishment of Glovebox Stands (Seismic)
7. Upgrade Exhaust Stack Sampling System

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

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

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

Risks

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

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

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

5. Financial Schedule

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

(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED (06-D-140-02)			
FY 2008	1,500	1,500	24
FY 2009	1,390	1,390	500
FY 2010	0	0	1,366
FY 2011	0	0	1,000
Total, PED (06-D-140-02)	2,890	2,890	2,890
Final Design (11-D-801)			
FY 2011	568	568	171
FY 2012	0	0	397
Total, Final Design	568	568	568
Total, Design	3,458	3,458	3,458
Construction			
FY 2011	9,701	9,701	0
FY 2012	0	0	6,835
FY 2013	0	0	2,516
FY 2014	0	0	350
Total, Construction	9,701	9,701	9,701
TEC			
FY 2008	1,500	1,500	24
FY 2009	1,390	1,390	500
FY 2010	0	0	1,366
FY 2011	10,269	10,269	1,171
FY 2012	0	0	7,232
FY 2013	0	0	2,516
FY 2014	0	0	350
Total, TEC	13,159	13,159	13,159

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Other Project Cost (OPC)			
OPC except D&D			
FY 2008	10	10	10
FY 2009	40	40	40
FY 2010	50	50	50
FY 2011	50	50	50
FY 2012	45	45	45
FY 2013	300	300	300
Total, OPC except D&D	495	495	495
Total Project Cost (TPC)			
FY 2005	0	0	0
FY 2006	0	0	0
FY 2007	0	0	0
FY 2008	1,510	1,510	34
FY 2009	1,430	1,430	540
FY 2010	50	50	1,416
FY 2011	10,319	10,319	1,221
FY 2012	45	45	7,277
FY 2013	300	300	2,816
FY 2014	0	0	350
FY 2015	0	0	0
FY 2016	0	0	0
FY 2017	0	0	0
Total, TPC	13,654	13,654	13,654

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

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED (06-D-140-02)			
FY 2009	3,348	3,348	500
FY 2010	0	0	500
FY 2011	0	0	2,348
Total, PED (06-D-140-02)	3,348	3,348	3,348
Final Design (11-D-801)			
FY 2011	167	167	0
FY 2012	0	0	167
Total, Final Design	167	167	167
Total, Design	3,515	3,515	3,515

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Construction			
FY 2011	7,019	7,019	0
FY 2012	0	0	1,299
FY 2013	0	0	3,498
FY 2014	0	0	2,222
Total, Construction	7,019	7,019	7,019
TEC			
FY 2009	3,348	3,348	500
FY 2010	0	0	500
FY 2011	7,186	7,186	2,348
FY 2012	0	0	1,466
FY 2013	0	0	3,498
FY 2014	0	0	2,222
Total, TEC	10,534	10,534	10,534
Other Project Cost (OPC)			
OPC except D&D			
FY 2008	10	10	10
FY 2009	40	40	40
FY 2010	50	50	50
FY 2011	50	50	50
FY 2012	50	50	50
FY 2013	300	300	300
FY 2014	204	204	204
Total, OPC except D&D	704	704	704
Total Project Cost (TPC)			
FY 2008	10	10	10
FY 2009	3,388	3,388	540
FY 2010	50	50	550
FY 2011	7,236	7,236	2,398
FY 2012	50	50	1,516
FY 2013	300	300	3,798
FY 2014	204	204	2,426
Total, TPC	11,238	11,238	11,238

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

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED) (06-D-140-02)	7,828	7,828	NA
Federal Project Support	142		NA
Contingency	537	679	NA
Final Design (11-D-801)	6,597	4,508	NA
Federal Project Support	358		NA
Final Design Contingency	1,452	913	NA
Total Design	16,914	13,928	NA
Construction			
Site Preparation			NA
Equipment			NA
Other Construction	37,305	37,305	NA
Federal Project Support	1,500	0	NA
Contingency	4,861	9,347	NA
Total, Construction	43,666	46,652	NA
Total, TEC	60,580	60,580	NA
Contingency, TEC	6,850	10,939	NA
Other Project Cost (OPC)			
OPC except D&D			NA
Conceptual Planning			NA
Conceptual Design	5,071	5,071	NA
Start-up	6,621	6,621	NA
Contingency	2,308	2,308	NA
Total, OPC except D&D	14,000	14,000	NA
D&D			
D&D	300	300	NA
Contingency	128	128	NA
Total, D&D	428	428	NA
Total, OPC	14,428	14,428	NA
Contingency, OPC	2,436	2,436	NA
Total, TPC	75,008	75,008	NA
Total, Contingency	9,286	13,375	NA

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Other Project Cost (OPC)			
OPC except D&D			
FY 2005	854	854	854
FY 2006	1,919	1,919	1,919
FY 2007	980	980	980
FY 2008	1,323	1,323	1,323
FY 2009	10	10	10
FY 2010	219	219	219
FY 2011	1,762	1,762	1,762
FY 2012	1,178	1,178	1,178
FY 2013	500	500	500
FY 2014	1,579	1,579	1,579
FY 2015	2,125	2,125	2,125
FY 2016	1,000	1,000	1,000
FY 2017	551	551	551
Total, OPC except D&D	14,000	14,000	14,000
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	1,323	1,323	1,323
FY 2009	10	10	10
FY 2010	219	219	219
FY 2011	1,762	1,762	1,762
FY 2012	1,178	1,178	1,178
FY 2013	500	500	500
FY 2014	1,579	1,579	1,579
FY 2015	2,125	2,125	2,125
FY 2016	1,000	1,000	1,000
FY 2017	979	979	979
Total, OPC	14,428	14,428	14,428

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Total Project Cost (TPC)			
FY 2005	854	854	854
FY 2006	1,919	1,919	1,919
FY 2007	980	980	980
FY 2008	1,323	1,323	1,323
FY 2009	3,517	3,517	2,478
FY 2010	5,219	5,219	4,337
FY 2011	4,267	4,267	3,392
FY 2012	11,178	11,178	1,722
FY 2013	9,389	9,389	8,654
FY 2014	32,258	32,258	12,670
FY 2015	2,125	2,125	34,700
FY 2016	1,000	1,000	1,000
FY 2017	979	979	979
Total, TPC	75,008	75,008	75,008

Total Project

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED (06-D-140-02)			
FY 2008	1,500	1,500	24
FY 2009	8,245	8,245	3,468
FY 2010	5,000	5,000	5,984
FY 2011	0	0	4,978
FY 2012	0	0	149
FY 2013	0	0	142
Total, PED (06-D-140-02)	14,745	14,745	14,745
Final Design (11-D-801)			
FY 2011	3,240	3,240	171
FY 2012	5,902	5,902	959
FY 2013	0	0	8,012
FY 2014	0	0	0
Total, Final Design	9,142	9,142	9,142
Total, Design	23,887	23,887	23,887

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Construction			
FY 2011	16,720	16,720	0
FY 2012	4,098	4,098	8,134
FY 2013	8,889	8,889	6,014
FY 2014	30,679	30,679	13,663
FY 2015	0	0	32,575
FY 2016	0	0	
FY 2017	0	0	
Total, Construction	60,386	60,386	60,386
TEC			
FY 2008	1,500	1,500	24
FY 2009	8,245	8,245	3,468
FY 2010	5,000	5,000	5,984
FY 2011	19,960	19,960	5,149
FY 2012	10,000	10,000	9,242
FY 2013	8,889	8,889	14,168
FY 2014	30,679	30,679	13,663
FY 2015	0	0	32,575
FY 2016	0	0	0
FY 2017	0	0	0
Total, TEC	84,273	84,273	84,273
Other Project Cost (OPC)			
OPC except D&D			
FY 2005	854	854	854
FY 2006	1,919	1,919	1,919
FY 2007	980	980	980
FY 2008	1,343	1,343	1,343
FY 2009	90	90	90
FY 2010	319	319	319
FY 2011	1,862	1,862	1,862
FY 2012	1,273	1,273	1,273
FY 2013	1,100	1,100	1,100
FY 2014	1,783	1,783	1,783
FY 2015	2,125	2,125	2,125
FY 2016	1,000	1,000	1,000
FY 2017	551	551	551
Total, OPC except D&D	15,199	15,199	15,199
D&D			
FY 2017	428	428	428
Total, D&D	428	428	428

(dollars in thousands)

	Appropriations	Obligations	Costs
OPC			
FY 2005	854	854	854
FY 2006	1,919	1,919	1,919
FY 2007	980	980	980
FY 2008	1,343	1,343	1,343
FY 2009	90	90	90
FY 2010	319	319	319
FY 2011	1,862	1,862	1,862
FY 2012	1,273	1,273	1,273
FY 2013	1,100	1,100	1,100
FY 2014	1,783	1,783	1,783
FY 2015	2,125	2,125	2,125
FY 2016	1,000	1,000	1,000
FY 2017	979	979	979
Total, OPC	15,627	15,627	15,627
Total Project Cost (TPC)			
FY 2005	854	854	854
FY 2006	1,919	1,919	1,919
FY 2007	980	980	980
FY 2008	2,843	2,843	1,367
FY 2009	8,335	8,335	3,558
FY 2010	5,319	5,319	6,303
FY 2011	21,822	21,822	7,011
FY 2012	11,273	11,273	10,515
FY 2013	9,989	9,989	15,268
FY 2014	32,462	32,462	15,446
FY 2015	2,125	2,125	34,700
FY 2016	1,000	1,000	1,000
FY 2017	979	979	979
Total, TPC	99,900	99,900	99,900

6. Details of Cost Estimate

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

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED) (06-D-140-02)	2,784	2,784	3,330
Contingency (06-D-140-02)	106	106	370
Final Design (11-D-801)	568	568	1,200
Final Design Contingency (11-D-801)			300
Total Design	3,458	3,458	5,200
Construction			
Other Construction	7,860	7,779	10,680
Contingency	1,841	1,922	3,150
Total, Construction	9,701	9,701	13,830
Total, TEC	13,159	13,159	19,030
Contingency, TEC	1,947	2,028	3,820
Other Project Cost (OPC)			
OPC except D&D			
Start-up	482	472	410
Contingency	13	23	30
Total, OPC except D&D	495	495	440
Total, OPC	495	495	440
Contingency, OPC	13	23	30
Total, TPC	13,654	13,654	19,470
Total, Contingency	1,960	2,051	3,850

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

	(dollars in thousands)		
	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED) (06-D-140-02)	3,001	3,001	3,542
Contingency (06-D-140-02)	347	347	400
Final Design (11-D-801)	167	167	1,600
Final Design Contingency (11-D-801)			350
Total Design	3,515	3,515	5,892
Construction			
Other Construction	5,646	5,360	8,266
Contingency	1,373	1,659	3,424
Total, Construction	7,019	7,019	11,690
Total, TEC	10,534	10,534	17,582
Contingency, TEC	1,720	2,006	4,174
Other Project Cost (OPC)			
OPC except D&D			
Start-up	642	681	574
Contingency	62	23	47
Total, OPC except D&D	704	704	621
Total, OPC	704	704	621
Contingency, OPC	62	23	47
Total, TPC	11,238	11,238	18,203
Total, Contingency	1,782	2,029	4,221

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

	(dollars in thousands)		
	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED) (06-D-140-02)	7,828	7,828	N/A
Federal Project Support [a] (06-D-140-02)	142		N/A
Contingency (06-D-140-02)	537	679	N/A
Final Design (11-D-801)	6,597	4,508	N/A
Federal Project Support [a] (11-D-801)	358		N/A
Final Design Contingency (11-D-801)	1,452	1,421	N/A
Total Design	16,914	14,436	N/A
Construction			
Other Construction	37,305	37,305	N/A
Federal Project Support	1,500	0	N/A
Contingency	4,861	8,839	N/A
Total, Construction	43,666	46,144	N/A
Total, TEC	60,580	60,580	N/A
Contingency, TEC	6,850	10,939	N/A
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Design	5,071	5,071	N/A
Start-up	6,621	6,621	N/A
Contingency	2,308	2,308	N/A
Total, OPC except D&D	14,000	14,000	N/A
D&D			
D&D	300	300	N/A
Contingency	128	128	N/A
Total, D&D	428	428	N/A
Total, OPC	14,428	14,428	N/A
Contingency, OPC	2,436	2,436	N/A
Total, TPC	75,008	75,008	N/A
Total, Contingency	9,286	13,375	N/A

Total Project

[a] Needed for federal technical support through Independent Project Reviews required by DOE Order 413.3B and to conduct technical reviews of design and construction documents in support of the Federal Project Director.

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED) (06-D-140-02)	13,613	13,613	6,872
Federal Project Support [a] (06-D-140-02)	142	0	0
Contingency (06-D-140-02)	990	1,132	770
Final Design (11-D-801)	7,332	5,243	2,800
Federal Project Support [a] (11-D-801)	358	0	0
Final Design Contingency (11-D-801)	1,452	1,421	650
Total Design	23,887	21,409	11,092
Construction			
Other Construction	50,811	50,444	18,946
Federal Project Support	1,500	0	0
Contingency	8,075	12,420	6,574
Total, Construction	60,386	62,864	25,520
Total, TEC	84,273	84,273	36,612
Contingency, TEC	10,517	14,973	7,994
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Design	5,071	5,071	0
Start-up	7,745	7,774	984
Contingency	2,383	2,354	77
Total, OPC except D&D	15,199	15,199	1,061
D&D			
D&D	300	300	0
Contingency	128	128	0
Total, D&D	428	428	0
Total, OPC	15,627	15,627	1,061
Contingency, OPC	2,511	2,482	77
Total, TPC	99,900	99,900	37,673
Total, Contingency	13,028	17,455	8,071

[a] Needed for federal technical support through Independent Project Reviews required by DOE Order 413.3B and to conduct technical reviews of design and construction documents in support of the Federal Project Director.

7. Schedule of Appropriation Requests

(dollars in thousands)

		Prior Years	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	Outyears	Total
FY 2011	TEC	53,324	20,221	20,468	42,480	TBD	TBD	TBD	TBD	TBD
	OPC	12,188	2,600	TBD	TBD	TBD	TBD	TBD	TBD	TBD
	TPC	65,512	22,821	20,468	42,480	TBD	TBD	TBD	TBD	TBD
FY 2012	TEC	54,086	8,889	8,624	12,500	0	0	0	0	84,099
	OPC	8,290	1,500	2,577	2,200	910	0	0	0	15,477
	TPC	62,376	10,389	11,201	14,700	910	0	0	0	99,576
FY 2013	TEC	44,705	8,889	30,679	0	0	0	0	0	84,273
	OPC	8,773	1,133	1,783	2,125	806	1,007	0	0	15,627
	TPC	53,478	10,022	32,462	2,125	806	1,007	0	0	99,900
FY 2014 Phase A	TEC	13,159	0	0	0	0	0	0	0	13,159
	OPC	195	300	0	0	0	0	0	0	495
	TEC	13,354	300	0	0	0	0	0	0	13,654
FY 2014 Phase B	TEC	10,534	0	0	0	0	0	0	0	10,534
	OPC	200	300	204	0	0	0	0	0	704
	TEC	10,734	300	204	0	0	0	0	0	11,238
FY 2014 Phase C	TEC	21,012	8,889	30,679	0	0	0	0	0	60,580
	OPC	8,245	500	1,579	2,125	1,000	979	0	0	14,428
	TEC	29,257	9,389	32,258	2,125	1,000	979	0	0	75,008
FY 2014 Total Project	TEC	44,705	8,889	30,679	0	0	0	0	0	84,273
	OPC	8,640	1,100	1,783	2,125	1,000	979	0	0	15,627
	TEC	53,345	9,989	32,462	2,125	1,000	979	0	0	99,900

8. Related Operations and Maintenance Funding Requirements

Start of Operation of Beneficial Occupancy (fiscal quarter or date)	4Q FY 2017
Expected Useful Life (number of years)	25
Expected Future Start of D&D of this capital asset (fiscal quarter)	4Q FY 2040

(Related Funding Requirements)

(dollars in thousands)

	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	N/A	N/A	N/A	N/A
Maintenance	N/A	N/A	N/A	N/A
Total, Operations and Maintenance	N/A	N/A	N/A	N/A

9. Required D&D Information

Area	Square Feet
Area of new construction	1,200
Area of existing facility(s) being replaced	1,200
Area of 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.

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

1. Significant Changes

The Uranium Capabilities Replacement (UCR) Project's Critical Decision-1 (CD-1), Approve Alternative Selection and Cost Range, was originally approved on July 25, 2007. As part of the DOE Order 413.3B process for post CD-1 cost increases, the CD-1 decision was reaffirmed on June 8, 2012. The selected alternative is to construct a facility that is sized to fit all Y-12 Enriched Uranium (EU) operations, to transition the critical capabilities from Building 9212 into this facility, and to significantly decrease the size of the Y-12 Protected Area. A cost review by the United States Army Corps of Engineers (USACE) was completed in February 2011 and updated in April 2012. The National Nuclear Security Administration (NNSA) used this review and other independent cost review data in support of developing the cost range for the CD-1 reaffirmation. Consistent with NNSA's increased emphasis on project management rigor, the total project baseline cost and schedule will not be approved until the design is sufficiently mature to support a credible cost and schedule estimate.

This funding request for FY 2014 reflects a continuation of the Uranium Capabilities Replacement Project design, with the completion of Title II design in FY 2015. The project design costs have increased due to the additional engineering redesign activities to resolve the Building Space/Fit issues. In addition, due to these additional design activities and corresponding delays in the Approval of the Performance Baseline critical decision (CD-2), project costs previously included as part of construction have been transferred into design. These changes have resulted in an increase in projected design costs from $566,192 as shown in the FY 2013 request, to $1,164,000. The transfer of design scope from the project's construction Work Breakdown Structure (WBS) to the design WBS accounts for about a third of the increase. This scope includes the development of safety basis documentation, Design Deliverable Maintenance (DDM) scope, Glovebox Fabrication Design, vendor procured design and temporary facilities for project personnel and associated contingency.

In FY 2013, NNSA will continue its collaboration with the Department of Defense's (DOD's) Cost Assessment and Program Evaluation (CAPE) team and the Offices of the Under Secretary of Defense for Acquisition, Technology, and Logistics to assess when the 9212 process capabilities are operational in UPF (now planned for around 2025) and how the near term costs can be accommodated within the current Future Year Nuclear Security Program (FYNSP). This joint study effort will assess the effect on Total Project Cost (TPC), which is still to be fully determined when the project baseline is established. An additional $647 million has been provided in the FY 2014-2018 FYNSP compared to the FY 2013-2017 FYNSP.

The construction execution plan has been refined and divided into several subprojects. The funding request for FY 2014 reflects continuation of construction in support of site preparation for nuclear facility construction. Following completion of site preparation and construction of the Nuclear Facility and support systems, the installation of uranium processing equipment will be phased and prioritized to transition critical capabilities from Building 9212 as soon as practicable. This data sheet separately presents the budget, costs, baselines and activities for four subprojects. Additional subprojects may be identified as design and acquisition plans complete in FY 2014. For FY 2014 and the outyears, the numbers presented are estimates and will be finalized once the project has an approved CD-2 baseline.

Site Readiness Subproject (06-D-141-01): Site Readiness received CD-2/3 approval in January 2013. The Total Project Cost for the subproject is $65,000 and CD-4 is expected the second quarter of FY 2015.

Site Preparation Subproject (06-D-141-02): The Site Preparation subproject is planning to achieve CD-2/3 in FY 2014. The preliminary cost range for the subproject is $158,000 to $250,000.

West End Protected Area Reduction (WEPAR) Subproject (06-D-141-03): The WEPAR subproject is planning to achieve CD-2/3 in FY 2014. The preliminary cost range for the subproject is $41,000 to $63,000.

Nuclear Facility, Process Equipment, and Balance of Facilities Subproject (06-D-141-04): The nuclear facility subproject is planning to achieve CD-2 in FY 2014 and CD-3 in FY 2015. The preliminary cost range of this subproject is to be determined (TBD) with a projected CD-4 date TBD. Prior to CD-2, NNSA will determine the feasibility of further subdividing this subproject.

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

A Level 4 PMCDP qualified Federal Project Director has been assigned to this project.

This PDS is an update of the FY2013 PDS.

As represented in the FY 2014 request, design, construction and Other Project Costs (OPC) will continue to be executed through the line item funding. Funds will be obligated and recorded in the appropriate object classes (object class 32.0 and 25.4) as defined in Office of Management and Budget Circular A-11.

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

(fiscal quarter or date)

	CD-0	CD-1	Design Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2011	12/17/2004	07/25/2007	2QFY2014	TBD	TBD	TBD	TBD	TBD
FY 2012	12/17/2004	07/25/2007	2QFY2014	4QFY2013	4QFY2013	TBD	TBD	TBD
FY 2013	12/17/2004	07/25/2007	2QFY2014	4QFY2013	4QFY2013	4QFY2022	N/A	N/A
FY 2014	12/17/2004	06/08/2012	4QFY2015	3QFY2014	3QFY2015	TBD	N/A	N/A

Site Readiness Subproject (06-D-141-01)

(fiscal quarter or date)

	CD-0	CD-1	Design Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2014	12/17/2004	06/08/2012	01/29/2013	01/29/2013	01/29/2013	2QFY2015	N/A	N/A

Site Preparation Subproject (06-D-141-02)

(fiscal quarter or date)

	CD-0	CD-1	Design Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2014	12/17/2004	06/08/2012	2QFY2014	2QFY2014	2QFY2014	4QFY2016	N/A	N/A

West End Protected Area Reduction Subproject (06-D-141-03)

(fiscal quarter or date)

	CD-0	CD-1	Design Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2014	12/17/2004	06/08/2012	2QFY2014	2QFY2014	2QFY2014	2QFY2016	N/A	N/A

Nuclear Facility, Process Equipment, and Balance of Facilities Subproject (06-D-141-04)

(fiscal quarter or date)

	CD-0	CD-1	Design Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2014	12/17/2004	07/25/2007	4QFY2015	3QFY2014	3QFY2015	TBD	N/A	N/A

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 2011	351,149	935,000-1,604,000	1,124,000-1,928,000	276,000-472,000	TBD	TBD	1,400,000-3,500,000
FY 2012	528,690	3,174,779-5,320,310	3,703,000-5,849,000	497,000-651,000	N/A	497,000-651,000	4,200,000-6,500,000
FY 2013	566,192	3,136,808-5,150,808	3,703,000-5,717,000	497,000-783,000	N/A	497,000-783,000	4,200,000-6,500,000
FY 2014	1,164,000	TBD	TBD	TBD	N/A	TBD	TBD[a]

4. Project Description, Scope, and Justification

Mission Need

The UCR Project is needed to ensure the long-term viability, safety, and security of the EU capability in the United States. The UCR Project will support the Nation's nuclear weapons stockpile, down blending of EU in support of nonproliferation, and provide uranium as feedstock for fuel for naval reactors. Currently these capabilities reside in aged and "genuinely decrepit" facilities as noted by the Perry Commission. There is substantial risk that the existing facilities will continue to deteriorate to the point of significant impact to Defense Programs, Defense Nuclear Nonproliferation, and Naval Reactors programs. The impacts could result in loss of the U.S. capability to maintain the nuclear weapons stockpile through life extension programs, shutdown of the U.S. Navy nuclear powered fleet due to lack of EU fuel feedstock materials, and impact to the Defense Nuclear Nonproliferation program's ability to reduce the enrichment level of foreign research reactors through supply of 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 UCR Project.

Scope and Justification

The UCR Project, which consists of the Uranium Processing Facility (UPF) and its support infrastructure, is a major system acquisition that was selected in the Record of Decision for the Complex Transformation Supplemental Programmatic Environmental Impact Statement to ensure the long-term viability, safety, and security of the EU capability at the Y-12 National Security Complex. Phase I of the project completes the facility to the point of including the Building 9212 capabilities. Building 9212 capabilities consist of Highly Enriched Uranium (HEU) purification, casting, metal and special oxide production, and product certification.

The balance of the EU processing capabilities will be installed in the new Nuclear Facility in two subsequent phases. When the balance of these EU processes are installed, the UCR Project 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 UCR Project are to support the following modernization strategy:

[a] Since CD-1 reaffirmation, the UCR budget profile has been adjusted to reflect early analysis by the DoD/CAPE team. Further adjustments to the UCR budget profile and/or total cost range will be informed by the ongoing multi-year, iterative analysis process between NNSA and DoD.

- 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 reduction in its high-security footprint.

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.

When all processes are installed, 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 reinforced concrete building. The nuclear facility will be designed to current seismic standards as required by the applicable safety analysis.

FY 2014 activities include ongoing design activities for the nuclear facility and associated support facilities, procurements, and construction. Project activities include awarding the balance 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 authorized until the subproject performance baselines have been validated and the CD-2/3 milestones have been approved in accordance with DOE O 413.3B.

The project is being conducted in accordance with the project management requirements in DOE O 413.3B, Program and Project Management for the Acquisition of Capital Assets, and all appropriate project management requirements have been met. Funds appropriated under this data sheet may be used for independent assessments and oversight of the planning and execution of this project.

The UPF project consists of the following subprojects:

Site Readiness Subproject (06-D-141-01) - The scope for Site Readiness is Bear Creek Road (BCR) relocation, including a bridge overpass of a haul road; installation of potable water lines paralleling the new road; electrical line demolition to make way for the road and clear the construction site; electrical line and communication cable installation; preparation of the West Borrow area to receive excess-soil and preparation and maintenance of a spoil area for wet soil; extension of an existing haul road for access to the construction site; excavation of Portal 10 and installation of a retaining wall; and jack-and-bore installation of utility casings.

Site Preparation Subproject (06-D-141-02) - The scope for Site Preparation is demolition of the Building 9107 (office) and adjacent structures; excavation of the Building 9107 hill; installation of sediment basin 4; demolition of water lines, storm drains, and site structures; removal of parking lots and former roads; site grading; installation of storm water and sewer lines; plug and abandon two monitoring wells; upgrade of Rubb tents for warehousing w/installation of staging areas and laydown yards; procurement/installation of a portal and a Vehicle Arrest System (VAS) gate on the haul road..

West End Protected Area Reduction (WEPAR) Subproject (06-D-141-03) – The scope of WEPAR is to construct a physical barrier north to south along the Y-12 Site's H-Road that functions as an explosive stand-off barrier for structures protecting the legacy production facilities. The project will install multiple sensors on the physical barrier that tie into the existing Perimeter Intrusion Detection and Assessment System (PIDAS) alarms on both the north and south ends of the fence and install video assessment and video capture at all necessary locations. A portal will be included capable of managing pedestrian and vehicle access while performing the required access control functions, including verification of identity and access authorization, and inspection for contraband, explosives, hidden humans, and special nuclear material. This interim PIDAS, when combined with other non-UPF decertification activities, reduces the Protected Area from 150 acres to 80 acres and moves project parking and staging in close proximity to the UPF building site, to gain efficiencies in construction.

Nuclear Facility, Process Equipment, and Balance of Facilities Subproject (06-D-141-04) - The scope of the Nuclear Facility Subproject includes the balance of the project scope: the nuclear facility, utility systems, and installation of process equipment replacing Building 9212 capabilities, and support facilities. Space and facility support for the balance of the EU processes to be installed later will be included. Prior to CD-2, NNSA will determine the feasibility of further subdividing this subproject.

5. Financial Schedule

Site Readiness Subproject (06-D-141-01)

(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
Design	N/A	N/A	N/A
Construction			
FY 2013	49,000	49,000	22,000
FY 2014	15,000	15,000	42,000
Total, Construction	64,000	64,000	64,000
TEC			
FY 2013	49,000	49,000	22,000
FY 2014	15,000	15,000	42,000
Total, TEC	64,000	64,000	64,000
Other Project Cost (OPC) [a]			
OPC except D&D			
FY 2015	1,000	1,000	1,000
Total, OPC except D&D	1,000	1,000	1,000
D&D			
FY 2014	N/A	N/A	N/A
Total, D&D	N/A	N/A	N/A
Total Project Cost (TPC)			
FY 2013	49,000	49,000	22,000
FY 2014	15,000	15,000	42,000
FY 2015	1,000	1,000	1,000
Total, TPC	65,000	65,000	65,000

[a] OPC will be executed through the line item funding.

Site Preparation Subproject (06-D-141-02)

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
Design	N/A	N/A	N/A
Construction			
FY 2014	46,835	46,835	16,835
FY 2015	TBD	TBD	TBD
FY 2016	TBD	TBD	TBD
Total, Construction [a]	TBD	TBD	TBD
TEC			
FY 2014	46,835	46,835	16,835
FY 2015	TBD	TBD	TBD
FY 2016	TBD	TBD	TBD
Total, TEC	TBD	TBD	TBD
Other Project Cost (OPC) [b]			
OPC except D&D			
FY 2015	TBD	TBD	TBD
FY 2016	TBD	TBD	TBD
Total, OPC except D&D	TBD	TBD	TBD
D&D			
FY 2014	N/A	N/A	N/A
Total, D&D	N/A	N/A	N/A
Total Project Cost (TPC)			
FY 2014	46,835	46,835	16,835
FY 2015	TBD	TBD	TBD
FY 2016	TBD	TBD	TBD
Total, TPC	TBD	TBD	TBD

[a] Financial data for subprojects is based on pre-baseline estimates that will be finalized at Critical Decision 2.
[b] OPC will be executed through the line item funding.

West End Protected Area Reduction Subproject (06-D-141-03)

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
Design	N/A	N/A	N/A
Construction			
FY 2014	24,000	24,000	24,000
FY 2015	TBD	TBD	TBD
FY 2016	TBD	TBD	TBD
Total, Construction [a]	TBD	TBD	TBD
TEC			
FY 2014	24,000	24,000	24,000
FY 2015	TBD	TBD	TBD
FY 2016	TBD	TBD	TBD
Total, TEC	TBD	TBD	TBD
Other Project Cost (OPC) [b]			
OPC except D&D			
FY 2015	TBD	TBD	TBD
FY 2016	TBD	TBD	TBD
Total, OPC except D&D	TBD	TBD	TBD
D&D			
FY 2014	N/A	N/A	N/A
Total, D&D	N/A	N/A	N/A
Total Project Cost (TPC)			
FY 2014	TBD	TBD	TBD
FY 2015	TBD	TBD	TBD
FY 2016	TBD	TBD	TBD
Total, TPC	TBD	TBD	TBD

[a] Financial data for subprojects is based on pre-baseline estimates that will be finalized at CD- 2.
[b] OPC will be executed through the line item funding.

Nuclear Facility, Process Equipment, and Balance of Facilities Subproject (06-D-141-04)

(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
Design	N/A	N/A	N/A
Construction			
FY 2014	TBD	TBD	TBD
FY 2015	TBD	TBD	TBD
FY 2016	TBD	TBD	TBD
FY 2017	TBD	TBD	TBD
FY 2018	TBD	TBD	TBD
Total, Construction [a]	TBD	TBD	TBD
TEC			
FY 2014	TBD	TBD	TBD
FY 2015	TBD	TBD	TBD
FY 2016	TBD	TBD	TBD
FY 2017	TBD	TBD	TBD
FY 2018	TBD	TBD	TBD
Total, TEC	TBD	TBD	TBD
Other Project Cost (OPC) [b]			
OPC except D&D			
FY 2014	TBD	TBD	TBD
FY 2015	TBD	TBD	TBD
FY 2016	TBD	TBD	TBD
FY 2017	TBD	TBD	TBD
FY 2018	TBD	TBD	TBD
Total, OPC except D&D	TBD	TBD	TBD
D&D			
FY 2014	N/A	N/A	N/A
Total, D&D	N/A	N/A	N/A
Total Project Cost (TPC)			
FY 2014	TBD	TBD	TBD
FY 2015	TBD	TBD	TBD
FY 2016	TBD	TBD	TBD
FY 2017	TBD	TBD	TBD
FY 2018	TBD	TBD	TBD
Total, TPC	TBD	TBD	TBD

[a] Financial data for subprojects is pre-baseline estimates that will be finalized at Critical Decision 2. [b] OPC will be executed through the line item funding.

Overall Project[a]

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
Design [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	80,899
FY 2011	114,786	114,786	109,855
FY 2012	160,194	160,109	170,512
FY 2013	268,000	268,000	278,000
FY 2014	228,000	228,000	212,000
FY 2015	119,000	119,000	119,000
FY 2016	40,815	40,900	79,923
Total, Design	1,164,000	1,164,000	1,164,000
Construction			
FY 2013	72,000	72,000	42,000
FY 2014	85,835	85,835	85,835
FY 2015	367,171	367,171	367,171
FY 2016	532,789	532,704	493,681
FY 2017	587,300	587,300	587,300
FY 2018	616,952	616,952	616,952
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	80,899
FY 2011	114,786	114,786	109,855
FY 2012	160,194	160,109	170,512
FY 2013	340,000	340,000	320,000
FY 2014	313,835	313,835	297,835
FY 2015	486,171	486,171	486,171
FY 2016	573,604	573,604	573,604
FY 2017	587,300	587,300	587,300
FY 2018	616,952	616,952	616,952
Total, TEC	TBD	TBD	TBD

[a] Since CD-1 reaffirmation, the UCR budget profile has been adjusted to reflect early analysis by the DoD CAPE team. Further adjustments to the UPF budget profile and/or total cost range will be informed by the ongoing multi-year, iterative analysis process between NNSA and DoD.

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

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

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Other Project Cost (OPC) [a]			
OPC except D&D			
FY 2005	12,113	12,113	12,113
FY 2006	7,809	7,809	7,809
FY 2007	10,082	10,082	10,082
FY 2008	11,730	11,730	11,730
FY 2009	14,000	14,000	14,000
FY 2010	20,500	20,500	20,500
FY 2011	18,894	18,894	18,894
FY 2012	0	0	0
FY 2013	0	0	0
FY 2014	12,000	12,000	12,000
FY 2015	13,000	13,000	13,000
FY 2016	13,185	13,185	13,185
FY 2017	17,000	17,000	17,000
FY 2018	24,000	24,000	24,000
Total, OPC except D&D	TBD	TBD	TBD
D&D			
FY 2009	N/A	N/A	N/A
Total, D&D	N/A	N/A	N/A
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	101,399
FY 2011	133,680	133,680	128,749
FY 2012	160,194	160,109	170,512
FY 2013	340,000	340,000	320,000
FY 2014	325,835	325,835	309,835
FY 2015	499,171	499,171	499,171
FY 2016	586,789	586,789	586,789
FY 2017	604,300	604,300	604,300
FY 2018	640,952	640,952	640,952
Total, TPC	TBD	TBD	TBD

[a] OPC will be executed through the line item funding.

6. Details of Project Cost Estimate

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	1,020,053	515,870	N/A
Contingency	143,947	50,322	N/A
Total, PED	1,164,000	566,192	N/A
Construction[a]			
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)[b]			
OPC except D&D			
Conceptual Planning	TBD	TBD	N/A
Conceptual Design	TBD	TBD	N/A
Start-up	TBD	TBD	N/A
Other Direct Costs	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

[a] Financial data for subproject is pre-baseline estimate that will be finalized at Critical Decision 2.
[b] OPC will be executed through the line item funding.

7. Schedule of Appropriation Requests

Overall Project

(dollars in thousands)

		Prior Years	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	Outyears	Total
FY 2011	TEC	453,621	189,987	270,012	320,000	TBD	TBD	TBD	TBD	TBD
	OPC	99,209	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
	TPC	552,830	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	609,649	190,000	350,000	350,000	350,000	TBD	TBD	TBD	TBD
FY 2013	TEC	508,185	340,000	397,000	493,000	493,000	258,000	TBD	TBD	TBD
	OPC	95,128	0	3,000	7,000	7,000	12,000	TBD	TBD	TBD
	TPC	603,313	340,000	400,000	500,000	500,000	270,000	TBD	3,886,687	6,500,000
FY 2014[a]	TEC	508,185	340,000	313,835	486,171	573,604	587,300	616,952	TBD	TBD
	OPC	95,128	0	12,000	13,000	13,185	17,000	24,000	TBD	TBD
	TPC	603,313	340,000	325,835	499,171	586,789	604,300	640,952	TBD	TBD

Site Readiness Subproject (6-D-141-01)

(dollars in thousands)

		Prior Years	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	Outyears	Total
	TEC	0	49,000	15,000	0	0	0	0	0	64,000
	OPC	0	0	0	1,000	0	0	0	0	1,000
FY 2014	TPC	0	49,000	15,000	1,000	0	0	0	0	65,000

Site Preparation Subproject [b] (06-D-141-02)

(dollars in thousands)

		Prior Years	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	Outyears	Total
	TEC	0	0	46,835	TBD	TBD	TBD	TBD	TBD	TBD
	OPC	0	0	0	TBD	TBD	TBD	TBD	TBD	TBD
FY 2014	TPC	0	0	46,835	TBD	TBD	TBD	TBD	TBD	TBD

West End Protected Area Reduction Subproject [c] (06-D-141-03)

(dollars in thousands)

		Prior Years	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	Outyears	Total
	TEC	0	0	24,000	TBD	TBD	TBD	TBD	TBD	TBD
	OPC	0	0	0	TBD	TBD	TBD	TBD	TBD	TBD
FY 2014	TPC	0	0	24,000	TBD	TBD	TBD	TBD	TBD	TBD

[a] Since CD-1 reaffirmation, the UCR budget profile has been adjusted to reflect early analysis by the DoD CAPE team. Further adjustments to the UCR budget profile and/or total cost range will be informed by the ongoing multi-year, iterative analysis process between NNSA and DoD.

[b] Financial data for subproject is pre-baseline estimate that will be finalized at Critical Decision 2.

[c] Financial data for subproject is pre-baseline estimate that will be finalized at Critical Decision 2.

Nuclear Facility, Process Equipment, and Balance of Facilities Subproject [a] (06-D-141-04)

(dollars in thousands)

		Prior Years	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	Outyears	Total
	TEC	508,185	291,000	228,000	TBD	TBD	TBD	TBD	TBD	TBD
	OPC	95,128	0	12,000	TBD	TBD	TBD	TBD	TBD	TBD
FY 2014	TPC	603,313	291,000	240,000	TBD	TBD	TBD	TBD	TBD	TBD

8. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy	2025
Expected Useful Life (number of years)	50 Years
Expected Future Start of D&D of this capital asset	N/A

(Related Funding requirements)

(dollars in thousands)

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

9. Required D&D Information

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

The construction of UCR Project will add approximately 400,000 square feet of new facilities to the Y-12 footprint and will allow eventual replacement of 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 D&D and demolition of these areas are not considered part of the UCR project.

[a] Financial data for subproject is pre-baseline estimate that will be finalized at Critical Decision 2.

10. Acquisition Approach

The NNSA Federal Project Director and the Integrated Project Team will be responsible for the execution of the project. The Management and Operating (M&O) contractor for Y-12 is the designated design authority. The Office of Defense Programs (NA-10) is responsible for defining program requirements, selecting the preferred alternatives, and the final decision authority for any project scope changes. The Office of Acquisition and Project Management (NA-APM) is responsible for providing support for alternative studies, and the lead NNSA office during design and construction of the project. The UCR Project will be executed through several acquisition strategies, to include firm fixed price, design bid build, design build and cost plus design build contracts.

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.

The acquisition strategies for the UPF Site Readiness and Site Preparation subprojects will be performed as firm fixed price construction projects for the major civil construction scope. The WEPAR and Nuclear Facility subprojects are currently being assessed for best value acquisition strategies.

Under the direction of the FPD, the M&O contractor will administer certain Architect-Engineers (A-E) and Construction Contract (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. USACE will have acquisition and project management responsibility for certain non-nuclear, civil portions of the UCR Subprojects.

07-D-220, Radioactive Liquid Waste Treatment Facility Upgrade Project,
Los Alamos National Laboratory (LANL), Los Alamos, New Mexico
Project Data Sheet (PDS) is for Construction

1. Significant Changes

The most recent DOE O 413.3B approved Critical Decision (CD) for the overall project is CD-1, which was approved on June 5, 2006, with a preliminary cost range of $82,000 to $104,000 and a completion date of 4th Quarter (4Q) FY 2012. The revised estimate at completion is $176 million to $214 million as discussed below. This estimate will be refined as the scope of the Transuranic Liquid Waste Facility is reviewed and revised. Approval of the CD-1 Reaffirmation is pending.

07-D-220-01: Single Nuclear Facility
This subproject has not been officially cancelled, but will be, concurrent with the CD-2 approval for the LLW Subproject.

07-D-220-02: Zero Liquid Discharge (ZLD)
The most recent DOE O 413.3B approved CD for the ZLD Phase is CD-4, Approve Project Closeout, which was approved on October 19, 2012.

07-D-220-03: Low Level Waste (LLW) Facility
Approval of CD-1 Reaffirmation and of CD-2 is pending availability of funds to finalize the design and request CD-3, which could happen concurrently with the CD-2 approval. The IPR team validated that the project is ready to receive CD-2.

07-D-220-04: Transuranic Liquid Waste (TLW) Facility
As required by DOE Order 413.3B, an Independent Cost Review (ICR) was conducted by the Department of Energy Office of Acquisition and Project Management in May 2012 to reassess the alternative selection for the entire project. Subsequent to this review, the IPR that validated the baseline for the LLW in November 2012 also validated that all ICR comments have been closed out and results have been incorporated into the TLW CD-1 cost range.

The project cost increased significantly since the original CD-1 approval in June 2006. Reasons include the LANL Site Wide Environmental Impact Statement Record of Decision delay, new DOE safety in design Standard (STD 1189) that required extensive rewrite of the safety basis documents, delay in addressing safety concerns raised by the Defense Nuclear Safety Board, and compliance with extensive inspection requirements in the new revision of the International Building Code imposed by the DOE safety standards.

As a result, in July 2010, after the project had completed 100% final design on a single 22,000 gsf hazard category 2 nuclear facility (Single Nuclear Facility) and the estimated cost had increased to $350 million, the project team was instructed by the Acquisition Executive to evaluate all requirements to reduce the project costs. As result of this evaluation, it was found that through effective pollution prevention the measured volume of low-level radioactive liquid waste to be treated had decreased from 9.5 million liters a year to 5 million liters a year, and transuranic liquid waste had decreased from 84,000 liters a year to 29,000 liters a year since CD-1 approval. In addition, the facility availability requirements were further clarified. Therefore, the reduction in treating less waste volume and clarifying facility availability resulted in the facility overall footprint reduction, and reduced cost. Further cost savings were achieve by treating the low level liquid and the transuranic liquid wastes in separate buildings since the transuranic liquid waste (TLW) represented less than 1 percent of the total waste volume, but the majority of the material at risk. Treating the low level liquid waste (LLW) separate from the TLW resulted in designing the LLW facility as a radiological facility rather than the high hazard nuclear facility. The TLW building will be treated in a Hazard Category 3 facility that is only approximately 2,000 square feet.

In September 2011, the Acquisition Executive approved the above approach. As a result, consistent with the DOE Order 413.3B, in May 2012, a CD-1 reaffirmation ICR was conducted by the DOE Office of Acquisition and Project Management staff. The reaffirmation agreed with the project scope and execution approach and recommended an estimate to complete cost range of $120 million to $240 million (excluding the historical costs for the Single Nuclear Facility and the ZLD) and an estimate at completion of $160 million to $280 million. Since the ICR, further cost saving ideas, such as accelerating the

LLW design by utilizing the uncosted balance from the ZLD were incorporated in the project schedule. The revised estimate to complete project cost range is now $131 million to $168 million and the revised estimate at completion is $176 million to $214 million. This amount will be further reduced to reflect anticipated management efficiency and workforce restructuring reductions. To be consistent with the NNSA Future-Years Nuclear Security Program (FYNSP) profile, the LLW and TLW capabilities will be executed in two phases. The first Phase will be the design and construction of the LLW capability and the second Phase will be the design and construction of the TLW capability. The LLW has achieved 60 percent design maturity, which was validated by an IPR team in November 2012 that also validated closures of all findings from the ICR. LLW waste will be ready to receive CD-2 approval, provided funds are available to reach 100 percent design maturity.

NNSA may defer the TLW scope as a result of the ongoing programmatic reviews at the Los Alamos National Laboratory.

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

This does not include a new start for the budget year.
This PDS is an update to the FY 2009 PDS.

2. Design, Construction, and D&D Schedule

(fiscal quarter or date[a])

	CD-0	CD-1	Design Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2007		1QFY2006	4QFY2007		1QFY2008	1QFY2010	2QFY2011	2QFY2012
FY 2008		3QFY2006	2QFY2008		3QFY2008	3QFY2010	3QFY2011	4QFY2012
FY 2009	10/04/2004	06/05/2006	3QFY2008	2QFY2008	3QFY2008	3QFY2010	3QFY2011	4QFY2012
FY 2014	10/04/2004	09/16/2011	1QFY 2017	4QFY 2016	1Q FY 2017	4Q FY 2020	N/A	N/A

07-D-220-01: Single Nuclear Facility[b]

(fiscal quarter or date)

	CD-0	CD-1	Design Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2014	10/04/2004	06/05/2006	10/30/2011	N/A	N/A	N/A	N/A	N/A

07-D-220-02: Zero Liquid Discharge

(fiscal quarter or date[c])

	CD-0	CD-1	Design Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2014	10/04/2004	06/05/2006	04/21/2011	11/22/2006	04/21/2011	10/19/2012	N/A	N/A

07-D-220-03: Low Level Waste

(fiscal quarter or date)

	CD-0	CD-1	Design Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2014	10/04/2004	09/16/2011	2QFY 2014	2QFY 2014	2Q FY 2014	1Q FY 2017	N/A	N/A

07-D-220-04: Transuranic Liquid Waste

(fiscal quarter or date)

[a] The schedules for the LLW and TLW are only estimates and consistent with the high end of the schedule ranges.
[b] This subproject has not been officially cancelled, but will be, concurrent with the CD-2 approval for the LLW Subproject.

	CD-0	CD-1	Final Design Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2014	10/04/2004	09/16/2011	1QFY 2017	4QFY 2016	1Q FY 2017	4Q FY 2020	N/A	N/A

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[a]

	TEC Prelim Design	TEC Final Design	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2007	NA	NA	NA	61,100	6,200	8,700		76,000
FY 2008	NA	NA	NA	72,600	15,000	9,000		96,600
FY 2009	11,100	NA	61,410	72,510	15,000	0	15,000	87,510
FY 2010	24,100	NA	TBD	TBD	TBD	0	TBD	TBD
FY 2014	37,492	20,546	124,384	182,422	29,078	0	29,078	211,500

07-D-220-01: Single Nuclear Facility

	TEC Prelim Design	TEC Final Design	TEC Construction, Total	TEC Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2014	23,339	0	0	23,339	5,377	0	5,377	28,716

07-D-220-02: Zero Liquid Discharge

	TEC Prelim Design	TEC Final Design	TEC Construction, Total	TEC Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2014	684	0	6,944	7,628	347	0	347	7,975

07-D-220-03: Low Level Liquid Waste (LLW)[b]

	TEC Prelim Design	TEC Final Design	TEC Construction, Total	TEC Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2014	13,469	0	43,170	56,639	10,574	0	10,574	67,213

07-D-220-04: Transuranic Liquid Waste (TLW)

	TEC Prelim Design	TEC Final Design	TEC Construction, Total	TEC Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2014	0	20,546	74,270	94,816	12,780	0	12,780	107,596

[a] The numbers for the LLW and TLW are only estimates and consistent with the high end of the cost ranges.
[b] No construction will be performed until the subproject performance baseline has been validated and CD-3 has been approved.

4. Project Description, Justification, and Scope

Project Description

The radioactive liquid waste treatment and disposal capability at LANL supports 15 technical areas, 63 buildings, and 1,800 sources of radioactive liquid waste (RLW). This capability must be continuously available to receive and treat liquid waste generated from Stockpile Stewardship and other activities. This project will renovate and construct new facilities and systems to satisfy the long-term RLW mission requirements.

Project Justification

Significant portions of the RLW system are almost 50 years old and their reliability is significantly diminished. The recent transuranic storage tank failure demonstrated the inability of RLW components to remain in service beyond their design life and exemplified the high cost of repair. The existing treatment facility is in need of significant upgrades in order to comply with current codes and standards including International Building Code, seismic design/construction codes and the National Electric Code (NEC). Recent operations and safety reviews have highlighted the need for enhanced seismic conformance for the existing facility. Continuous workarounds are required to keep systems running and excessive corrosion threatens system availability. Degraded and outdated facility systems pose elevated risk to workers.

Project Scope

This project will replace at a minimum the following RLW treatment capabilities at LANL and reduce the liquid discharge to Mortandad Canyon:

1) Transuranic (TRU) waste treatment;
2) LLW treatment;
3) Secondary waste treatment;
4) RLW discharge system/Zero Liquid Discharge (ZLD) system; and
5) TRU influent storage.

The replacement is needed to remediate significant deficiencies associated with the existing RLW treatment capabilities that pose a threat to the long-term availability of this function. The replacement is ultimately aimed at providing an RLW treatment capability that is safe, reliable, and effective for the next 50 years in support of primary missions at LANL.

07-D-220-01: Single Facility Nuclear Subproject

Initial planning and design was based on a combined single hazard category 2 nuclear facility to treat both the low level and transuranic liquid wastes. The scope included a two-story high reinforced concrete building approximately 20,000 gross square feet in area. As explained above, due to a number of reasons beyond the controls of the project team, the design was abandoned for a cheaper alternative that would meet the mission need. This subproject has not been officially cancelled, but will be, concurrent with the CD-2 approval for the LLW Subproject.

07-D-220-02: Zero Liquid Discharge Subproject

The scope included construction of large, ground-level concrete evaporation tank that can store up to 5 million liters of liquid that will be discharged from the treatment facilities. In addition, the scope included a transfer line to transport treated liquid from the processing facility to the evaporation tank and a small pump house to transfer back water from the evaporation tank to the facility for further treatment before it could be discharged to the nearby canyon, if needed to meet ground water discharge permit requirements.

07-D-220-03: Low Level Liquid Waste Subproject

The scope includes constructing a single-story reinforced concrete building, approximately 8,000 square feet in area, to house both the processing equipment for treating up to 5 million liters of low level liquid waste, a small control room, laboratory and other necessary functioning, and two 10,000 gallon effluent tanks. This project is a "like-for-like" replacement of the capability currently provided in the existing RLWTF. A separate utility building will be provided to house mechanical and electrical equipment.

07-D-220-04: Transuranic Liquid Waste Subproject

The scope includes building a single story reinforced concrete structure to house the processing equipment, capable of treating up to 30,000 liters of liquid waste each year, a control room, lab, and separate utility building.

If the project does not receive construction funds in FY 2014, the project will be further delayed. This delay will create significant risks to NNSA mission at LANL if the existing facility is shut-down for a significant amount of time for repair of aging equipment.

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

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

Construction funds will not be used until approval of Critical Decision 3, Approve Start of Construction, except procuring long-lead equipment if necessary.

5. Financial Schedule

07-D-220-01: Single Nuclear Facility Subproject

(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED			
FY 2006	5,379	3,000	362
FY 2007	10,077	8,100	6,020
FY 2008	990	5,346	3,341
FY 2009	6,893	6,893	8,937
FY 2010	0	0	4,679
Total, PED (06-D-140-03)	23,339	23,339	23,339
Construction			
	0	0	0
Total, Construction	0	0	0
TEC			
FY 2006	5,379	3,000	362
FY 2007	10,077	8,100	6,020
FY 2008	990	5,346	3,341
FY 2009	6,893	6,893	8,937
FY 2010	0	0	4,679
Total, TEC	23,339	23,339	23,339

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Other Project Cost (OPC)			
OPC except D&D			
FY 2005	2,028	2,028	2,028
FY 2006	2,137	2,137	2,137
FY 2007	990	990	990
FY 2008	212	212	212
FY 2009	10	10	10
Total, OPC except D&D	5,377	5,377	5,377
Total Project Cost (TPC)			
FY 2005	2,028	2,028	2,028
FY 2006	7,516	5,137	2,499
FY 2007	11,067	9,090	7,010
FY 2008	1,202	5,558	3,553
FY 2009	6,903	6,903	8,947
FY 2010	0	0	4,679
Total, TPC	28,716	28,716	28,716

07-D-220-02: Zero Liquid Discharge Subproject

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED			
FY 2009	661	661	0
FY 2010	23	23	684
Total, PED (06-D-140-03)	684	684	684
Construction			
FY 2009	6,944	6,944	0
FY 2010	0	0	0
FY 2011	0	0	1,707
FY 2012	0	0	4,569
FY 2013	0	0	668
Total, Construction	6,944	6,944	6,944
TEC			
FY 2009	7,605	7,605	0
FY 2010	23	23	684
FY 2011	0	0	1,707
FY 2012	0	0	4,569
FY 2013	0	0	668
Total, TEC	7,628	7,628	7,628

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Other Project Cost (OPC)			
OPC except D&D			
FY 2012	347	347	347
Total, OPC except D&D	347	347	347
Total Project Cost (TPC)			
FY 2009	7,605	7,605	0
FY 2010	23	23	684
FY 2011	0	0	1,707
FY 2012	347	347	4,916
FY 2013	0	0	668
Total, TPC	7,975	7,975	7,975

07-D-220-03: Low Level Liquid Waste Subproject[a]

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED			
FY 2010	6,977	6,977	2,103
FY 2011	3,992	3,992	741
FY 2012	0	0	5,697
FY 2013	0	0	2,428
FY 2014	2,500	2,500	2,500
Total, PED (06-D-140-03)	13,469	13,469	13,469
Construction			
FY 2009	556	556	0
FY 2010	0	0	0
FY 2011	0	0	0
FY 2012	0	0	0
FY 2013	0	0	0
FY 2014	42,614	42,614	19,341
FY 2015	0	0	23,829
Total, Construction	43,170	43,170	43,170
TEC			
FY 2009	556	556	0
FY 2010	6,977	6,977	2,103
FY 2011	3,992	3,992	741
FY 2012	0	0	5,697
FY 2013	0	0	2,428
FY 2014	45,114	45,114	21,841
FY 2015	0	0	23,829
Total, TEC	56,639	56,639	56,639

[a] NNSA is currently reviewing options to achieve 100 percent design maturity and achieve CD-2 approval.

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Other Project Cost (OPC)			
OPC except D&D			
FY 2009	1,447	1,447	1,447
FY 2010	1,955	1,955	1,955
FY 2011	1,954	1,954	1,954
FY 2012	351	351	351
FY 2013	1,640	1,640	1,640
FY 2014	540	540	540
FY 2015	2,346	2,346	2,346
FY 2016	341	341	341
Total, OPC except D&D	10,574	10,574	10,574
Total Project Cost (TPC)			
FY 2009	2,003	2,003	1,447
FY 2010	8,932	8,932	4,058
FY 2011	5,946	5,946	2,695
FY 2012	351	351	6,048
FY 2013	1,640	1,640	4,068
FY 2014	45,654	45,654	22,381
FY 2015	2,346	2,346	26,175
FY 2016	341	341	341
Total, TPC	67,213	67,213	67,213

07-D-220-04: Transuranic Liquid Waste Subproject

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2014	10,605	10,605	2,000
FY 2015	9,941	9,941	8,000
FY 2016	0	0	8,500
FY 2017	0	0	2,046
Total, Design	20,546	20,546	20,546
Construction			
FY 2015	4,230	4,230	0
FY 2016	55,977	55,977	5,000
FY 2017	0	0	40,000
FY 2018	0	0	13,623
FY 2019	0	0	1,584
Total, Construction	60,207	60,207	60,207

	(dollars in thousands)		
	Appropriations	Obligations	Costs
TEC			
FY 2014	10,605	10,605	2,000
FY 2015	14,171	14,171	8,000
FY 2016	55,977	55,977	13,500
FY 2017	0	0	42,046
FY 2018	0	0	13,623
FY 2019	0	0	1,584
Total, TEC	80,753	80,753	80,753
Other Project Cost (OPC)			
OPC except D&D			
FY 2014	1,639	1,639	1,639
FY 2015	654	654	654
FY 2016	2,061	2,061	2,061
FY 2017	1,500	1,500	1,500
FY 2018	1,500	1,500	1,500
FY 2019	3,000	3,000	3,000
FY 2020	2,426	2,426	2,426
Total, OPC except D&D	12,780	12,780	12,780
Total Project Cost (TPC)			
FY 2014	12,244	12,244	3,639
FY 2015	14,825	14,825	8,654
FY 2016	58,038	58,038	15,561
FY 2017	1,500	1,500	43,546
FY 2018	1,500	1,500	15,123
FY 2019	3,000	3,000	4,584
FY 2020	2,426	2,426	2,426
Total, TPC	93,533	93,533	93,533

Total Project

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED			
FY 2006	5,379	3,000	362
FY 2007	10,077	8,100	6,020
FY 2008	990	5,346	3,341
FY 2009	7,554	7,554	8,937
FY 2010	7,000	7,000	7,466
FY 2011	3,992	3,992	741
FY 2012	0	0	5,697
FY 2013	0	0	2,428
FY 2014	2,500	2,500	2,500
Total, PED (06-D-140-03)	37,492	37,492	37,492

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Design (TEC)			
FY 2014	10,605	10,605	2,000
FY 2015	9,941	9,941	8,000
FY 2016	0	0	8,500
FY 2017	0	0	2,046
Total Design (TEC)	20,546	20,546	20,546
Construction			
FY 2009	7,500	7,500	0
FY 2010	0	0	0
FY 2011	0	0	1,707
FY 2012	0	0	4,569
FY 2013	0	0	668
FY 2014	42,614	42,614	19,341
FY 2015	4,230	4,230	23,829
FY 2016	55,977	55,977	5000
FY 2017	0	0	40,000
FY 2018	0	0	13,623
FY 2019	0	0	1,584
Total, Construction	110,321	110,321	110,321
TEC			
FY 2006	5,379	3,000	362
FY 2007	10,077	8,100	6,020
FY 2008	990	5,346	3,341
FY 2009	15,054	15,054	8,937
FY 2010	7,000	7,000	7,466
FY 2011	3,992	3,992	2,448
FY 2012	0	0	10,266
FY 2013	0	0	3,096
FY 2014	55,719	55,719	23,841
FY 2015	14,171	14,171	31,829
FY 2016	55,977	55,977	13,500
FY 2017	0	0	42,046
FY 2018	0	0	13,623
FY 2019	0	0	1,584
Total, TEC	168,359	168,359	168,359

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Other Project Cost (OPC)			
OPC except D&D			
FY 2005	2,028	2,028	2,028
FY 2006	2,137	2,137	2,137
FY 2007	990	990	990
FY 2008	212	212	212
FY 2009	1,457	1,457	1,457
FY 2010	1,955	1,955	1,955
FY 2011	1,954	1,954	1,954
FY 2012	698	698	698
FY 2013	1,640	1,640	1,640
FY 2014	2,179	2,179	2,179
FY 2015	3,000	3,000	3,000
FY 2016	2,402	2,402	2,402
FY 2017	1,500	1,500	1,500
FY 2018	1,500	1,500	1,500
FY 2019	3,000	3,000	3,000
FY 2020	2,426	2,426	2,426
Total, OPC except D&D	29,078	29,078	29,078
D&D			
FY 2012	0	0	0
Total, D&D	0	0	0
Total Project Cost (TPC)			
FY 2005	2,028	2,028	2,028
FY 2006	7,516	5,137	2,499
FY 2007	11,067	9,090	7,010
FY 2008	1,202	5,558	3,553
FY 2009	16,511	16,511	10,394
FY 2010	8,955	8,955	9,421
FY 2011	5,946	5,946	4,402
FY 2012	698	698	10,964
FY 2013	1,640	1,640	4,736
FY 2014	57,898	57,898	26,020
FY 2015	17,171	17,171	34,829
FY 2016	58,379	58,379	15,902
FY 2017	1,500	1,500	43,546
FY 2018	1,500	1,500	15,123
FY 2019	3,000	3,000	4,584
FY 2020	2,426	2,426	2,426
Total, TPC	197,437	197,437	197,437

6. Details of Project Cost Estimate

07-D-220-01: Single Nuclear Facility Subproject

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design (PED) (06-D-140-03)	23,339	8,316	
Contingency (06-D-140-03)	0	2,100	
Total, Design	23,339	10,416	
Construction			
Other Construction		40,721	0
Contingency		10,179	
Total, Construction		50,900	
	0		0
Total, TEC	23,339	61,316	
Contingency, TEC	0	12,279	0
			0
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning &	226	3,940	
Conceptual Design	3,940		
Safety Basis and Design Support	1,211		
Start-Up		7,999	
Contingency		1,984	
Total, OPC except D&D	5,377	13,923	0
D&D			
D&D	0	0	
Contingency	0	0	
Total, D&D	0	0	0
Total, OPC	5,377	13,923	
Contingency, OPC		1,984	0
	0		0
Total, TPC	28,716	75,239	
Total, Contingency	0	14,263	0

07-D-220-02: Zero Liquid Discharge Subproject

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design (PED) (06-D-140-03)	684	684	684
Total, Design	684	684	684
Construction			
Other Construction	6,944	7,479	7,287
Contingency		2,521	1,458
Total, Construction	6,944	10,000	8,745
Total, TEC	7,628	10,684	9,429
Contingency, TEC	0	2,521	1,458
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning & Conceptual Design			
Safety Basis and Design Support			
Start-Up	347	916	150
Contingency		161	0
Total, OPC except D&D	347	1,077	150
D&D			
D&D	0		
Contingency	0		
Total, D&D	0	0	0
Total, OPC	347	1,077	150
Contingency, OPC	0	161	0
Total, TPC	7,975	11,761	9,579
Total, Contingency	0	2,682	1,458

07-D-220-03: Low Level Liquid Waste Subproject

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design (PED) (06-D-140-03)	10,634	0	0
Contingency (06-D-140-03)	335	0	0
Design (07-D-220)	2,500		
Total, Design	13,469	0	0
Total Design Contingency	335	0	0
Construction			
Other Construction	31,296	0	0
Construction Support (Federal) [a]	1,000	0	0
Contingency	10,874		
Total, Construction	43,170	0	0
Total, TEC	56,647	0	0
Contingency, TEC	11,209	0	0
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning & Conceptual Design			
Safety Basis and Design Support	5,447	0	0
Start-Up	4,639	0	0
Contingency	488	0	0
Total, OPC except D&D	10,574	0	0
D&D			
D&D	0	0	0
Contingency	0	0	0
Total, D&D	0	0	0
Total, OPC	10,574	0	0
Contingency, OPC	488	0	0
Total, TPC	67,221	0	0
Total, Contingency	11,697	0	0

[a] Needed for federal technical support through Independent Project Reviews required by DOE Order 413.3B and to conduct technical reviews of construction documents in support of the Federal Project Director.

07-D-220-04: Transuranic Liquid Waste Subproject

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design (07-D-220)	17,393		
Design Support (Federal) (07-D-220) [a]	300		
Contingency (07-D-220)	2,853		
Total, Design	20,546		
Total Design Contingency	2,853	0	0
Construction			
Other Construction	36,700	0	0
Construction Support (Federal) [a]	1,000		
Contingency	36,570		
Total, Construction	74,270		
		0	0
Total, TEC	94,816		
Contingency, TEC	39,423	0	0
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning & Conceptual Design			0
Safety Basis and Design Support	7,041		
Start-Up	2,537		
Contingency	3,202		
Total, OPC except D&D	12,780	0	0
D&D			
D&D	0		
Contingency	0		
Total, D&D	0	0	0
Total, OPC	12,780		
Contingency, OPC	3,202	0	0
			0
Total, TPC	107,596		
Total, Contingency	42,625	0	0

[a] Needed for federal technical support through Independent Project Reviews required by DOE Order 413.3B and to conduct technical reviews of design and construction documents in support of the Federal Project Director.

Total Project

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design (PED) (06-D-140-03)	34,657	9,000	N/A
Contingency (06-D-140-03)	335	2,100	N/A
Design (07-D-220)	19,893	NA	N/A
Design Support (Federal) (07-D-220) [a]	300	NA	N/A
Contingency (07-D-220)	2,853	NA	N/A
Total, Design	58,038	11,100	N/A
Total, Design Contingency	3,188		
Construction			
Other Construction	74,940	48,200	N/A
Construction Support (Federal) [a]	2,000	NA	N/A
Contingency	47,444	12,700	N/A
Total, Construction	124,384	60,900	N/A
Total, TEC	182,422	72,000	N/A
Contingency, TEC	50,632	14,800	N/A
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning &	226	3,940	N/A
Conceptual Design	3,940		
Safety Basis and Design Support	13,699		
Start-Up	7,523	8,915	N/A
Contingency	3,690	2,145	N/A
Total, OPC except D&D	29,078	15,000	N/A
D&D			
D&D	0	0	N/A
Contingency	0	0	N/A
Total, D&D	0	0	N/A
Total, OPC	29,078	15,000	N/A
Contingency, OPC	3,690	2,145	N/A
Total, TPC	211,500	87,000	N/A
Total, Contingency	54,322	16,945	N/A

[a] Needed for federal technical support through Independent Project Reviews required by DOE Order 413.3B and to conduct technical reviews of design and construction documents in support of the Federal Project Director.

7. Schedule of Appropriation Requests

(Dollars in Thousands)

Request		Prior Years	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	Outyears	Total
FY 2007	TEC	61,100	0	0	0	0	0	0	0	61,100
	OPC	14,900	0	0	0	0	0	0	0	14,900
	TPC	76,000	0	0	0	0	0	0	0	76,000
FY 2008	TEC	72,600	0	0	0	0	0	0	0	72,600
	OPC	24,000	0	0	0	0	0	0	0	24,000
	TPC	96,600	0	0	0	0	0	0	0	96,600
FY 2009	TEC	72,000	0	0	0	0	0	0	0	72,000
	OPC	15,000	0	0	0	0	0	0	0	15,000
	TPC	87,000	0	0	0	0	0	0	0	87,000
FY 2014 Single Nuclear Facility	TEC	23,339	0	0	0	0	0	0	0	23,339
	OPC	5,377	0	0	0	0	0	0	0	5,377
	TPC	28,716	0	0	0	0	0	0	0	28,716
FY 2014 ZLD	TEC	7,628	0	0	0	0	0	0	0	7,628
	OPC	347	0	0	0	0	0	0	0	347
	TPC	7,975	0	0	0	0	0	0	0	7,975
FY 2014 LLW Treatment	TEC	11,525	0	45,114	0	0	0	0	0	56,639
	OPC	5,707	1,640	540	2,346	341	0	0	0	10,574
	TPC	17,232	1,640	45,654	2,346	341	0	0	0	67,213
FY 2014 TLW Facility	TEC	0	0	10,605	14,171	55,977	0	0	0	80,753
	OPC	0	0	1,639	654	2,061	1,500	1,500	5,426	12,780
	TPC	0	0	12,244	14,825	58,038	1,500	1,500	5,426	93,533

8. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	2QFY2013
Expected Useful Life (number of years)	50
Expected Future Start of D&D of this capital asset (fiscal quarter)	2QFY2063

(Related Funding requirements)

(dollars in thousands)

	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	6,780	18,957	339,000	568,700
Maintenance	1,860	3,723	93,000	111,700
Total, Operations & Maintenance	8,640	22,680	432,000	680,400

9. Required D&D Information

The one-for-one offset requirement will be met by utilizing site-banked square footage. A plan for D&D of the existing facility will be developed at the end of construction of the new facility when characterization data is available. D&D of the current facility is too far in the future for accurate cost estimates at this time.

Area	Square Feet
Area of new construction	10,000
Area of existing facility(s) being replaced	0
Area of additional D&D space to meet the "one-for-one" requirement	10,000

Name(s) and site location(s) of existing facility(s) to be replaced: Banked space will be used to meet one for one replacement.

10. Acquisition Approach

The ZLD sub-project was acquired through a firm-fixed price, design-build contract. Design services for the single nuclear facility and the LLW were to be obtained through competitively awarded contracts using a firm fixed price contract. Similarly, design for the TLW will be obtained through competitively awarded contracts using a firm fixed price contract. Construction of the LLW and TLW facilities will be accomplished using a firm fixed price contracting approach.

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

(Dollars in Thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Readiness in Technical Base and Facilities [a] [b]			
Operations of Facilities	1,290,804	1,492,848	0
Program Readiness	73,962	93,500	0
Material Recycle and Recovery	77,780	135,937	0
Containers	28,892	27,500	0
Storage	31,196	39,909	0
Subtotal, Operations and Maintenance	**1,502,634**	**1,789,694**	**0**
Construction	511,108	427,134	0
Total, Readiness in Technical Base and Facilities	**2,013,742**	**2,216,828**	**0**

Out-Year Funding Schedule by Subprogram and Activity

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
Readiness in Technical Base and Facilities [a] [b]					
Operations of Facilities	0	0	0	0	0
Program Readiness	0	0	0	0	0
Material Recycle and Recovery	0	0	0	0	0
Containers	0	0	0	0	0
Storage	0	0	0	0	0
Subtotal, Operations and Maintenance	0	0	0	0	0
Construction	0	0	0	0	0
Total, Readiness in Technical Base and Facilities	**0**	**0**	**0**	**0**	**0**

[a] This represents the proposed control level.
[b] All activities have been transferred to the Site Stewardship and Nuclear Programs GPRA units.

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
National Defense Authorization Act for FY 2013 (P.L. 112-239)
The Continuing Appropriations Resolution, 2013 (P.L. 112-175)

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.

Starting in FY 2014, the activities within RTBF are will be relocated to Site Stewardship (operations, maintenance, construction, and safety) and Nuclear Programs (special nuclear material recycle and recovery, storage, Program Readiness, construction, and programmatic equipment re-capitalization programs).

Program Accomplishments and Milestones

In the FY 2012 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 Gemini and Castor criticality experiments; 2) Savannah River Site (SRS) completed all directed work for Limited Life Component Exchange (LLCE), Life-Extension Programs, and surveillance, while developing new, fully automated Micro-TCAP technology; 3) Lawrence Livermore National Laboratory (LLNL) completed 100% of their Special Nuclear Material (SNM) de-inventory schedule; 4) Sandia National Laboratories (SNL) baselined 22 unique Microsystems and Engineering Sciences Applications (MESA) components for the B61-12 LEP; 5) Kansas City Plant (KCP) continued the Kansas City Responsive Infrastructure Manufacturing and Sourcing (KCRIMS) facility, with 90% construction completion on the new facility; 6) National Security Complex (Y-12) met all mission deliverables for recovery and recycle of enriched Uranium and Lithium materials; 7) Pantex (PX) achieved 6.5 million man-hours without a lost-time injury, and earned the DOE "best-in-class" pollution prevention award after 18 consecutive years with no environmental noncompliance issues, and 8) Los Alamos National Laboratory (LANL) received approval to operate the Radiological Laboratory Utility Office Building (RLUOB), and completed initial seismic project scope.

Program Planning and Management

All management functions have been transferred to Site Stewardship and Nuclear Programs.

Strategic Management

Strategic management has been transferred to Site Stewardship and Nuclear Programs.

Major Outyear Priorities and Assumptions

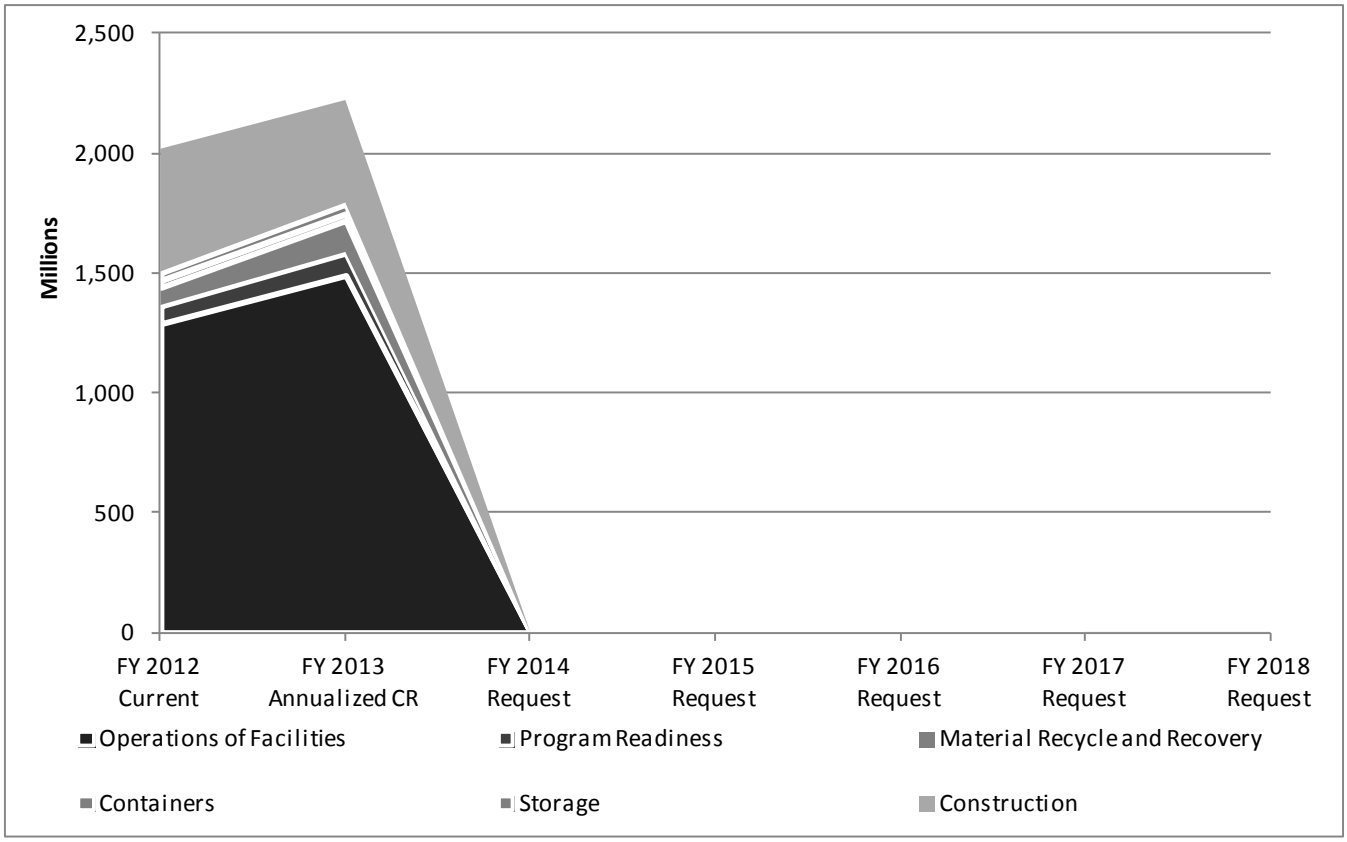
All activities have been transferred to the Site Stewardship and Nuclear Programs Government Performance and Results Act (GPRA) units.

Program Goals and Funding

All activities have been transferred to the Site Stewardship and Nuclear Programs GPRA units.

Performance Goal (Measure)	**Construction Projects (formerly Major Construction Projects)** - Execute construction projects within approved costs and schedules, as measured by the total percentage of projects with total estimated cost (TEC) greater than $20 million with a schedule performance index (ratio of budgeted cost of work performed to budgeted cost of work scheduled) and a cost performance index (ratio of budgeted cost of work performed to actual cost of work performed) between 0.9-1.15.		
Fiscal Year	**2012**	**2013**	**2014**
Target	90% of projects	90% of projects	N/A
Result	**Met** - 90		
Endpoint Target	Annually achieve 90% of baselined construction projects with TEC greater than $20M with actual SPI and CPI of 0.9-1.15 as measured against approved baseline definitions. Note: This performance measure is reported by the Nuclear Programs GPRA unit beginning in FY 2014.		

Figure 1: Relative Out-Year Funding Priorities in Weapons Activities – Readiness in Technical Base and Facilities



Current Budget Structure	FY 2012 Current	FY 2013 Annualized CR	Proposed Budget Structure	FY 2014 Request
Site Stewardship			**Site Stewardship**	
Environmental Projects and Operations (EPO)	45,191	46,978	Site Stewardship/Site Support/Long-Term Stewardship (formerly EPO)	56,668
Energy Modernization and Investment Program	0	10,262	Site Stewardship/Sustainment/Energy Modernization and Investment Program	3,000
Nuclear Materials Integration	36,990	18,963	Nuclear Materials Integration	17,679
Corporate Project Management	0	13,798	Corporate Project Management	13,017
MSI Partnership Program	0	0	MSI Partnership Program	14,531
Total, Site Stewardship	**82,181**	**90,001**	**Total, Site Stewardship (Old Structure)**	**104,895**
Readiness in Technical Base and Facilities				
Operating				
Operations of Facilities				
Kansas City Plant	155,759	177,158	Site Stewardship/Enterprise Infrastructure/Site Operations	135,834
			Site Stewardship/Enterprise Infrastructure/Sustainment	35,030
Lawrence Livermore National Laboratory	88,744	97,887	Site Stewardship/Enterprise Infrastructure/Site Operations	190,287
			Site Stewardship/Enterprise Infrastructure/Sustainment	10,875
Los Alamos National Laboratory	317,592	345,111	Site Stewardship/Enterprise Infrastructure/Site Operations	213,707
			Site Stewardship/Enterprise Infrastructure/Sustainment	85,708
Nevada National Security Site	101,230	123,282	Site Stewardship/Enterprise Infrastructure/Site Operations	100,929
			Site Stewardship/Enterprise Infrastructure/Sustainment	24,427
Pantex	164,365	180,584	Site Stewardship/Enterprise Infrastructure/Site Operations	81,420
			Site Stewardship/Enterprise Infrastructure/Sustainment	95,574
Sandia National Laboratories	120,354	176,495	Site Stewardship/Enterprise Infrastructure/Site Operations	115,000
			Site Stewardship/Enterprise Infrastructure/Sustainment	47,000
Savannah River Site	97,480	122,513	Site Stewardship/Enterprise Infrastructure/Site Operations	90,236
			Site Stewardship/Enterprise Infrastructure/Sustainment	35,750
Y-12 National Security Complex	245,280	269,818	Site Stewardship/Enterprise Infrastructure/Site Operations	170,042
			Site Stewardship/Enterprise Infrastructure/Sustainment	86,400
Nuclear security enterprise-wide (funds to be distributed during execution)	0	0	Site Stewardship/Enterprise Infrastructure/Site Operations	15,000
			Site Stewardship/Enterprise Infrastructure/Sustainment	10,000
Subtotal, Operations of Facilities	**1,290,804**	**1,492,848**	**Subtotal, Site Operations & Sustainment**	**1,543,219**
Program Readiness	73,962	93,500	Site Stewardship/Enterprise Infrastructure/Site Support	25,379
			Nuclear Programs/Nuclear Operations Capablility	67,259
Material Recycle and Recovery	77,780	135,937	Nuclear Programs/Nuclear Operations Capablility	127,731
Containers	28,892	27,500	Site Stewardship/Enterprise Infrastructure/Site Support	27,514
Storage	31,196	39,909	Nuclear Programs/Nuclear Operations Capablility	37,500
Construction			Nuclear Programs/Construction	
12-D-301, TRU Waste Facilities, LANL	9,881	24,204	12-D-301, TRU Waste Facilities, LANL	26,722
11-D-801, TA-55 Reinvestment Project, Phase 2, LANL	10,000	8,889	11-D-801, TA-55 Reinvestment Project, Phase 2, LANL	30,679
10-D-501, Nuclear Facility Risk Reduction, Y-12	35,387	17,909		
09-D-404, Test Capabilities Revitilization - II, SNL	25,168	11,332		
08-D-802, High Explosive Pressing Facility, PX	66,960	24,800		
07-D-140, Project Engineering & Design, VL	3,518	0		
07-D-220, Radioactive Liquid Waste Treatment Facility Upgrade Project, LANL	0	0	07-D-220, Radioactive Liquid Waste Treatment Facility Upgrade Project, LANL	55,719
06-D-141, PED, Uranium Processing Facility, Y-12	160,194	340,000	06-D-141, PED/Construction, Uranium Capabilities Replacement	325,835
04-D-125, CMRR Project, LANL	200,000	0		0
Subtotal, RTBF: Construction	**511,108**	**427,134**	**Subtotal, NP: Construction**	**438,955**
			New Activities	
			Site Stewardship/Enterprise Infrastucture/Facilities Disposition	5,000
			Nuclear Programs/ Nuclear Operations Capability/Plutonium Metal Processing	33,447
			Nuclear Programs/Capabilities Based Investments	39,558
Total, Readiness in Technical Base and Facilities	**2,013,742**	**2,216,828**	**Total, Site Stewardship**	**1,706,007**
			Total, Nuclear Programs	**744,450**

Explanation of Funding and/or Program Changes

	(Dollars in Thousands)		
	FY 2013 Annualized CR	FY 2014 Request	FY 2014 Request vs. FY 2013 Annualized CR
Operations of Facilities			
· **Kansas City Plant**	**177,158**	**0**	**-177,158**
This activity has been moved to Site Stewardship starting in FY 2014.			
· **Lawrence Livermore National Laboratory**	**97,887**	**0**	**-97,887**
This activity has been moved to Site Stewardship starting in FY 2014.			
· **Los Alamos National Laboratory**	**345,111**	**0**	**-345,111**
This activity has been moved to Site Stewardship starting in FY 2014.			
· **Nevada National Security Site**	**123,282**	**0**	**-123,282**
This activity has been moved to Site Stewardship starting in FY 2014.			
· **Pantex Plant**	**180,584**	**0**	**-180,584**
This activity has been moved to Site Stewardship starting in FY 2014.			
· **Sandia National Laboratories**	**176,495**	**0**	**-176,495**
This activity has been moved to Site Stewardship starting in FY 2014.			
· **Savannah River Site**	**122,513**	**0**	**-122,513**
This activity has been moved to Site Stewardship starting in FY 2014.			
· **Y-12 National Security Complex**	**269,818**	**0**	**-269,818**
This activity has been moved to Site Stewardship starting in FY 2014.			
Total, Operations of Facilities	**1,492,848**		**-1,492,848**

	(Dollars in Thousands)		
	FY 2013 Annualized CR	FY 2014 Request	FY 2014 Request vs. FY 2013 Annualized CR
Program Readiness	**93,500**	**0**	**-93,500**
Starting in FY 2014, the programmatic functions of the Program Readiness subprogram have been transferred to Nuclear Programs, Nuclear Operations Capability subprogram, whereas the Nuclear Criticality Safety Program and Nuclear Safety Research & Design functions have been transferred to Site Stewardship.			
Material Recycle and Recovery	**135,937**	**0**	**-135,937**
Activities have been transferred to the Nuclear Programs, Nuclear Operations Capability subprogram.			
Containers	**27,500**	**0**	**-27,500**
Activities have been transferred to the Site Stewardship program.			
Storage	**39,909**	**0**	**-39,909**
Activities have been transferred to the Nuclear Programs, Nuclear Operations Capability subprogram.			
Total, Operations and Maintenance	**1,789,694**	**0**	**-1,789,694**
Construction	**427,134**	**0**	**-427,134**
Activities have been transferred to Nuclear Programs, Construction.			
Total Funding Change, Readiness in Technical Base and Facilities	**2,216,828**	**0**	**-2,216,828**

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. Operations of Facilities continues to provide 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
This activity has been moved to Site Stewardship in FY 2014.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
Operations of Facilities		
Kansas City Plant		
FY 2012		**155,759**
FY 2013		**177,158**
FY 2014		**0**
FY 2015-FY 2018		**0**
Kansas City Plant – Banister Road		
FY 2012	• Continued operations and required maintenance costs at the current Bannister Road facility. In anticipation of the move to a new facility, KCP was operated in a "run to replacement" mode, where maintenance for continued safe operations was performed, and select facility and equipment maintenance was	**91,812**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Operations of Facilities		
	allowed to grow until the replacement facility at Botts Road is operational.	
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. • Under a full year Continuing Resolution (CR), Capability Based Facilities Infrastructure (CBFI) -like activities would be executed at this site.	**93,602**
FY 2014	• This activity has been moved to Site Stewardship starting in FY 2014.	
FY 2015	• This activity has been moved to Site Stewardship starting in FY 2014.	**0**
FY 2016		**0**
FY 2017		**0**
FY 2018		**0**
Kansas City Responsive Infrastructure Manufacturing and Sourcing (KCRIMS)		
FY 2012	• Continued 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.	**83,556**
FY 2014	• This activity has been moved to Site Stewardship starting in FY 2014.	**0**
FY 2015	• This activity has been moved to Site Stewardship starting in FY 2014.	**0**
FY 2016		**0**
FY 2017		**0**
FY 2018		**0**
Lawrence Livermore National Laboratory		
FY 2012	• Continued to provide facility and infrastructure support for the completion of de-inventory activities. • Continued 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. • Continued facility and infrastructure support of Nuclear Counterterrorism research, experimentation, and emergency operations. • Continued packaging design, maintenance and certification.	**88,744**
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	**97,887**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Operations of Facilities		
	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. • Under a full-year CR, CBFI-like activities would be executed at this site.	
FY 2014	• This activity has been moved to Site Stewardship starting in FY 2014.	**0**
FY 2015	• This activity has been moved to Site Stewardship starting in FY 2014.	**0**
FY 2016		**0**
FY 2017		**0**
FY 2018		**0**
Los Alamos National Laboratory		
FY 2012	• Continued engineering, manufacturing systems and methods shops; tritium; dynamic experimentation; Los Alamos Neutron Science Center (LANSCE); waste management; Nuclear Materials Technology (TA-55); Chemistry and Metallurgy Research (CMR); and beryllium technology. • Supported 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 Radioactive Liquid Waste Treatment Facility System upgrade/replacement. • Continued 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 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); CMR; and beryllium technology including risk reduction at LANSCE and Containment Vessel Disposition (CVD) material disposition at CMR.	**345,111**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Operations of Facilities		
	• Continues to provide solid waste risk reduction activities (including ceasing low level waste 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. • 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. • Under a full-year CR, CBFI-like activities would be executed at this site.	
FY 2014	• This activity has been moved to Site Stewardship starting in FY 2014.	**0**
FY 2015	• This activity has been moved to Site Stewardship starting in FY 2014.	**0**
FY 2016		**0**
FY 2017		**0**
FY 2018		**0**
Nevada National Security Site		
FY 2012	• Provided for the operation of the Device Assembly Facility (DAF) (including National Criticality Experiments Research Center (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. • Operated and maintained 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.	**101,230**
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.	**123,282**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Operations of Facilities		
	• Under a full-year CR, CBFI-like activities would be executed at this site.	
FY 2014	• This activity has been moved to Site Stewardship starting in FY 2014.	**0**
FY 2015	• This activity has been moved to Site Stewardship starting in FY 2014.	**0**
FY 2016		**0**
FY 2017		**0**
FY 2018		**0**
Pantex Plant		
FY 2012	• Continued risk reduction activities. • Continued recovery from the FY 2010 flood event. • Provided an operable state of readiness at the site. • Improved facilities such as the High Explosive (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. • Under a full-year CR, CBFI-like activities would be executed at this site.	**180,584**
FY 2014	• This activity has been moved to Site Stewardship starting in FY 2014.	**0**
FY 2015	• This activity has been moved to Site Stewardship starting in FY 2014.	**0**
FY 2016		**0**
FY 2017		**0**
FY 2018		**0**
Sandia National Laboratories		
FY 2012	• Supported 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 Tonopah Test Range (TTR) in Nevada. • Facilities operated at base operations levels with rotating staff on a planned schedule to accommodate mission needs.	**120,354**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Operations of Facilities		
	• Provided base operations capability level for TTR and limited recapitalization of equipment. • Provided 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.	
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 DSW surveillance activities. • Under a full-year CR, CBFI-like activities would be executed at this site.	**176,495**
FY 2014	• This activity has been moved to Site Stewardship starting in FY 2014.	**0**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• This activity has been moved to Site Stewardship starting in FY 2014.	**0** **0** **0** **0**
Savannah River Site		
FY 2012	• Supported 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. • Provided 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,	**122,513**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Operations of Facilities		
	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. • Under a full-year CR, CBFI-like activities would be executed at this site.	
FY 2014	• This activity has been moved to Site Stewardship starting in FY 2014.	**0**
FY 2015	• This activity has been moved to Site Stewardship starting in FY 2014.	**0**
FY 2016		**0**
FY 2017		**0**
FY 2018		**0**
Y-12 National Security Complex		
FY 2012	• Provided 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. • Supported Y-12 base operations with facilities and infrastructure in a state of readiness. • Continued 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. • Under a full-year CR, CBFI-like activities would be executed at this site.	**269,818**
FY 2014	• This activity has been moved to Site Stewardship starting in FY 2014.	**0**
FY 2015	• This activity has been moved to Site Stewardship starting in FY 2014.	**0**
FY 2016		**0**
FY 2017		**0**
FY 2018		**0**

Program Readiness
Overview

The Program Readiness subprogram implements a multi-year strategy to provide capabilities (cross-cutting, multi-program advanced technologies and technical infrastructure, and provides trained, qualified skilled workers) that support the needs of the 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; investments at SNL and NNSS; and providing the critical worker skills needed at laboratories, plants, and experiment sites.

Sequence
This is not applicable for this section.

Benefits
The programmatic functions of this activity have been moved to Nuclear Programs, Nuclear Operations Capability in FY 2014. The Nuclear Criticality Safety Program and Nuclear Safety Research & Design functions have been transferred to Site Stewardship in FY 2014.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• The NCSP provided 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 continued collaboration by executing the CEA/NNSA "Feasibility Study for MIDAS Project" which led towards 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. • Continued 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. • Continued 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. • Continued 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. • Continued the capabilities needed for integrated and engineered Nuclear Warhead Certification at SNL. Specific activities supported by Program Readiness at Sandia include: Weapons Intern Program (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.	**73,962**
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	**93,500**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	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. • 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 and 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 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 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.	
FY 2014	• This activity has been moved to Nuclear Programs, Nuclear Operations Capability and Site Stewardship.	**0**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• This activity has been moved to Nuclear Programs, Nuclear Operations Capability and Site Stewardship starting in FY 2014.	**0** **0** **0** **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. 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 Programs, Nuclear Operations Capability in FY 2014.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• 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. • Provided 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. • Included 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**
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	**135,937**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	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. 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. • 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. • 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 NCERC and Sandia National Laboratories material relocation planning.	
FY 2014	• This activity has been moved to Nuclear Programs, Nuclear Operations Capability.	**0**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• This activity has been moved to Nuclear Programs, Nuclear Operations Capability starting in FY 2014.	**0** **0** **0** **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 achieved by close coordination of planning and operations with users/customers. The subprogram 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.

Sequence
This is not applicable for this section.

Benefits
The scope of this activity has been moved to Site Stewardship in FY 2014.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• Supported the emphasis on nuclear material consolidation, and de-inventory activities to ensure needed transportation containers were certified and available to accommodate proposed material movements, including the LLNL Category I and II nuclear materials.	**28,892**
FY 2013	• 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. • 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. • 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.	**27,500**

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2014	• This activity has been moved to Site Stewardship starting in FY 2014.	**0**
FY 2015	• This activity has been moved to Site Stewardship starting in FY 2014.	**0**
FY 2016		**0**
FY 2017		**0**
FY 2018		**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. 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 Programs, Nuclear Operations Capability in FY2014.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• Funding included the cost of receipt, storage, and inventory of nuclear materials, non-nuclear materials, HEU, enriched lithium, and components from dismantled warheads. • Provided 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, 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	**31,196**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	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	• Identifies Pu storage alternatives including NNSS DAF. • 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. • 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. • 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.	**39,909**
FY 2014	• This activity has been moved to Nuclear Programs, Nuclear Operations Capability starting in FY 2014.	**0**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• This activity has been moved to Nuclear Programs, Nuclear Operations Capability starting in FY 2014.	**0** **0** **0** **0**

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.

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.

RTBF Construction activities have been transferred to Nuclear Programs, Construction subprogram, or to Site Stewardship Program, Construction subprogram starting in FY 2014.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• Construction of the Radiological Laboratory/Utility/Office Building (RLUOB) was completed in FY 2010, and installation of associated equipment is complete. • The UPF project planning activities included several packages for smaller, more manageable construction subprojects with individual performance baselines. • Started construction work on Phase A (Site Development) of the TRU Waste Facility at LANL. • The TA-55 Reinvestment Project Phase II (TRP II) activities consisted of the final design scope for TRP II. • The Nuclear Facility Risk Reduction (NFRR) Project at Y-12 construction activities was commenced. • The Test Capabilities Revitalization–Phase II (TCR-II) Project at SNL construction activities continued in FY 2012. • The High Explosive Pressing Facility (HEPF) at Pantex construction activities were continued.	**511,108**
FY 2013	• Continue Phase A and Phase B construction, and continue with final design of Phase C activities for the TRP II, at LANL. • Established baseline for Phase B (Staging and Characterization Facilities) of the TRU Waste Facility. • Continue construction activities for NFRR at Y-12, TCR-II at SNL, and HEPF at Pantex.	**427,134**
FY 2014	• This activity has been moved to Nuclear Programs, Construction starting in FY 2014.	**0**
FY 2015 **FY 2016** **FY 2017**	• This activity has been moved to Nuclear Programs, Construction or Site Stewardship, Construction in FY 2015.	**0** **0** **0**

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2018		**0**

Supporting Information

Capital Operating Expenses [a]

Capital Operating Expenses Summary

(dollars in thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Capital Operating Expenses			
General Plant Projects	24,112	24,642	0
Capital Equipment	21,365	21,835	0
Total, Capital Operating Expenses	**45,477**	**46,477**	**0**

Outyear Capital Operating Expenses

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
Capital Operating Expenses					
General Plant Projects	0	0	0	0	0
Capital Equipment	0	0	0	0	0
Total, Capital Operating Expenses	**0**	**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.

Construction Projects[a]

(Dollars in Thousands)

	Total	Prior Years	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
13-D-301, Electrical Infrastructure Upgrades, LLNL/LANL					
TEC	48,000	0	0	0	0
OPC	5,400	0	0	0	0
TPC, 13-D-301, Electrical Infrastructure Upgrades, LLNL/LANL	**53,400**	**0**	**0**	**0**	**0**
12-D-301, TRU Waste Facilities, LANL					
TEC	83,990	14,665	9,881	24,204	0
OPC	22,911	7,378	1,339	2,997	0
TPC, 12-D-301, TRU Waste Facilities, LANL	**106,901**	**22,043**	**11,220**	**27,201**	**0**
11-D-801, TA-55 Reinvestment Project, Phase 2, LANL					
TEC	84,273	34,705	10,000	8,889	0
OPC	15,627	7,367	1,500	1,133	0
TPC, 11-D-801, TA-55 Reinvestment Project, Phase 2, LANL	**99,900**	**42,072**	**11,500**	**10,022**	**0**
10-D-501, Nuclear Facility Risk Reduction (NFRR), Y-12					
TEC	65,796	12,500	35,387	17,909	0
OPC	10,000	4,620	803	661	0
TPC, 10-D-501, Nuclear Facility Risk Reduction (NFRR), Y-12	**75,796**	**17,120**	**36,190**	**18,570**	**0**
09-D-404, Test Capabilities Revitalization-II, SNL					
TEC	49,687	13,187	25,168	11,332	0
OPC	8,122	7,247	318	557	0
TPC, 09-D-404, Test Capabilities Revitalization-II, SNL	**57,809**	**20,434**	**25,486**	**11,889**	**0**
08-D-802, High Explosive Pressing Facility, Px[a]					
TEC	140,397	38,501	66,960	24,800	0
OPC	4,840	2,389	200	200	0
TPC, 08-D-802, High Explosive Pressing Facility, Px[a]	**145,237**	**40,890**	**67,160**	**25,000**	**0**

[a] $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).

(Dollars in Thousands)

	Total	Prior Years	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
07-D-140, Project Engineering & Design, VL[a]					
TEC	18,193	14,665	3,518	0	0
OPC	0	0	0	0	0
TPC, 07-D-140, Project Engineering & Design, VL[a]	**18,193**	**14,665**	**3,518**	**0**	**0**
07-D-220, Radioactive Liquid Waste Treatment Facility Upgrade, LANL					
TEC	184,992	44,992	0	0	0
OPC	29,078	10,733	698	1,640	0
TPC, 07-D-220, Radioactive Liquid Waste Treatment Facility Upgrade, LANL	**214,070**	**55,725**	**698**	**1,640**	**0**
06-D-141, PED/Construction, Uranium Processing Facility, Y-12					
TEC	TBD	347,991	160,194	340,000	0
OPC	TBD	95,128	0	0	0
TPC, 06-D-141, PED/Construction, Uranium Processing Facility, Y-12	**TBD**	**443,119**	**160,194**	**340,000**	**0**
04-D-125, Chemistry and Metallurgy Research Facility Replacement (CMRR), LANL					
TEC	TBD	640,382	200,000	0	0
OPC	TBD	9,740	0	0	0
TPC, 04-D-125, Chemistry and Metallurgy Research Facility Replacement (CMRR), LANL	**TBD**	**650,122**	**200,000**	**0**	**0**
Total All Construction Projects					
Total, TEC	675,328	1,161,588	511,108	427,134	0
Total, OPC	95,978	144,508	4,858	7,188	0
TPC, All Construction Projects	**771,306**	**1,306,096**	**515,966**	**434,322**	**0**

Outyear Construction Projects

This program ends in FY 2013. The Construction Projects for FY 2014 and the outyears listed above will be reflected in Site Stewardship or Nuclear Programs.

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

Secure Transportation Asset
Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Secure Transportation Asset (STA) [a]			
Operations and Equipment	150,014	114,965	122,072
Program Direction	93,102	104,396	97,118
Total, Secure Transportation Asset	**243,116**	**219,361**	**219,190**

Out Year Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
Secure Transportation Asset (STA) [a]					
Operations and Equipment	122,072	125,761	132,230	142,760	144,405
Program Direction	97,118	100,342	101,887	102,705	103,831
Total, Secure Transportation Asset	**219,190**	**226,103**	**234,117**	**245,465**	**248,236**

[a] This represents the proposed control level.

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
National Defense Authorization Act for FY 2013 (P.L. 112-239)
The Continuing Appropriations Resolution, 2013 (P.L. 112-175)

Overview

The Secure Transportation Asset (STA) program safely and securely transports nuclear weapons, weapons components, and special nuclear materials to meet projected Department of Energy (DOE), Department of Defense (DoD), and other customer requirements.

This program includes Operations and Equipment and Program Direction. Operations and Equipment provides for STA's transportation service infrastructure, which 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 will continue to balance and prioritize customer requests against STA capacity. STA needs to replace aging transportation assets and communication systems to maintain the required convoy security profile.

Program Accomplishments and Milestones

In FY 2012, STA accomplished four significant milestones: 1) safely and securely completed 100 percent of 126 shipments without compromise/loss of components or a release of radioactive material; 2) maintained agent workforce to support the required workload; 3) conducted Force on Force exercises to validate the security posture, and 4) attained the first production units for Overland Palletized Unit Shipper (OPUS).

Explanation of Changes

The FY 2014 Request of $219,190,000 is a slight decrease from the FY 2013 Annualized CR level. Increases include: 1) funding for Mobile Guardian Trailer development; 2) stabilized Replacement of Escort Vehicles, and 3) upgrades required for end of serviceable life components in the command and control communications systems.

The FY 2014 Request reflects anticipated management efficiency and workforce restructuring reductions of $9.6M for Weapons Activities. Studies to identify the specific program effects are underway. When these studies are completed, NNSA will work with Congress to make any necessary program or funding level adjustments.

Program Planning and Management

The STA capacity is maintained to support the Defense Programs 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, disruption, and coordination with other agencies to meet potential threats, while sustaining capabilities to defend, recapture and recover nuclear weapons, special nuclear materials and weapons components.

Strategic Management

STA supports the NNSA and DOE strategic objective "Secure Our Nation" by providing safe and secure transportation of nuclear weapons, nuclear weapon components and special nuclear materials (SNM) in support of the national security of the United States of America.

The following external factors present the strongest impact to the overall achievement of the program's strategic goal to provide a safe, secure, reliable and effective nuclear weapons stockpile:

- de-inventory and SNM consolidation campaigns may impact life span of vehicle fleet and increase capacity requirements;
- stabilized Vendor Fleet replacement schedules;
- uncertain threat environment, and
- ability to train agents in realistic over-the-road environments.

Major Outyear Priorities and Assumptions

Outyear funding levels for STA total $953,921,000 for FY 2015 through FY 2018. The STA has identified the following four key strategies to guide the Office of Secure Transportation over the next five to ten years. These Strategies are in line with, and support, the NNSA Acting Administrator's Key Goals identified in the NNSA

Strategic Plan and the Secretary of Energy's Goals identified in the DOE Strategic Plan.

Modernize Mission Assets and Infrastructure
STA must maintain assets to support current and future missions based on changing customer needs, budgets, and threats. These assets include vehicles (tractors, trailers, and escort vehicles), facilities, and aircraft. Modernizing and sustaining these assets requires an integrated, long-term strategy and plan, and a substantial investment. The STA strategy includes eliminating outdated assets, refurbishing existing assets to extend their useful life, and procuring new assets.

Continuously Improve Workforce Capability and Performance
Although assets and infrastructure are essential for successful mission implementation, the workforce is clearly our most valuable and important resource. The skill and talent base required to support the mission must be continuously replenished, developed, and maintained. This includes everyone in the organization, from federal agents to senior management. Initial and continuing training and development programs will ensure existing staff is competent and proficient in their current positions. The STA will recruit highly experienced and innovative personnel, retain experienced personnel, and develop succession plans to ensure vacancies can be filled with little or no impact to the mission.

Strengthen Mission Support Systems
Mission support systems provide the critical information necessary to ensure mission success. This includes the information that is obtained, analyzed, and disseminated prior to the mission; the continuous monitoring of that information to ensure it is accurate and valid; and the constant communication within the mission teams and between the teams and headquarters. All of this must be accomplished seamlessly in real-time, while balancing the evolving requirements of cyber security to ensure system reliability and integrity. Additionally, STA will leverage other information technology systems supporting business processes and operations to improve efficiency and effectiveness of the STA mission.

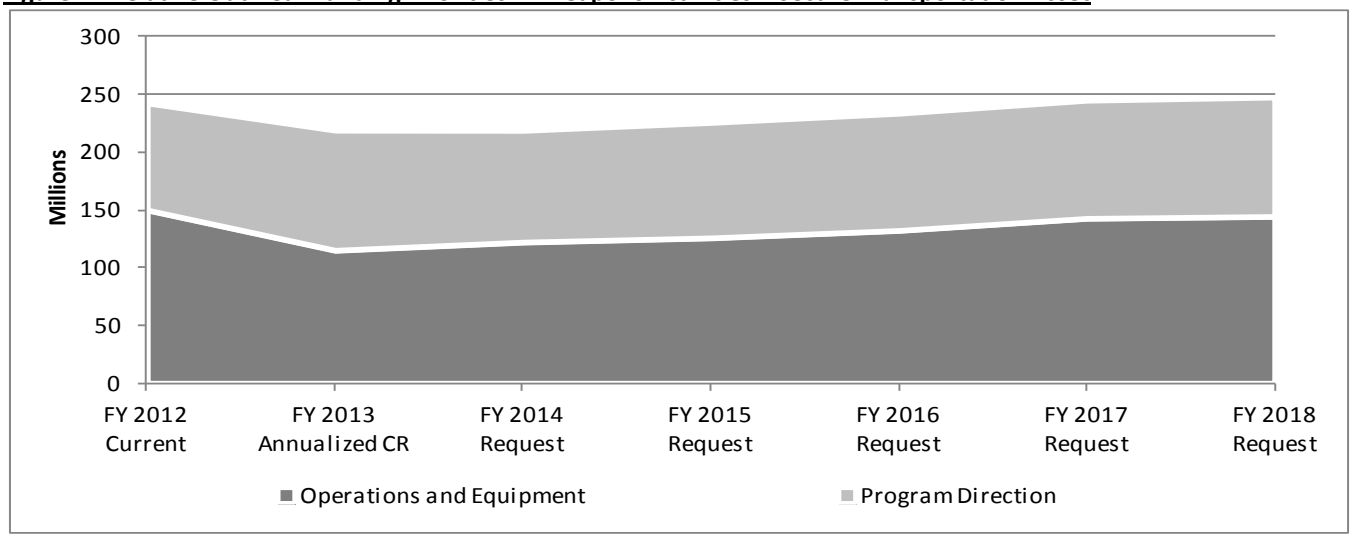
Drive an Integrated and Effective Organization
The STA will continuously monitor, evaluate, and improve operations to ensure mission is always achieved in an ever-changing operational environment. This includes activities that are directly related to the mission such as safeguards and security requirements and the business process operations in the organization. The STA will always strive to eliminate redundancies, improve performance and efficiency, and streamline operations.

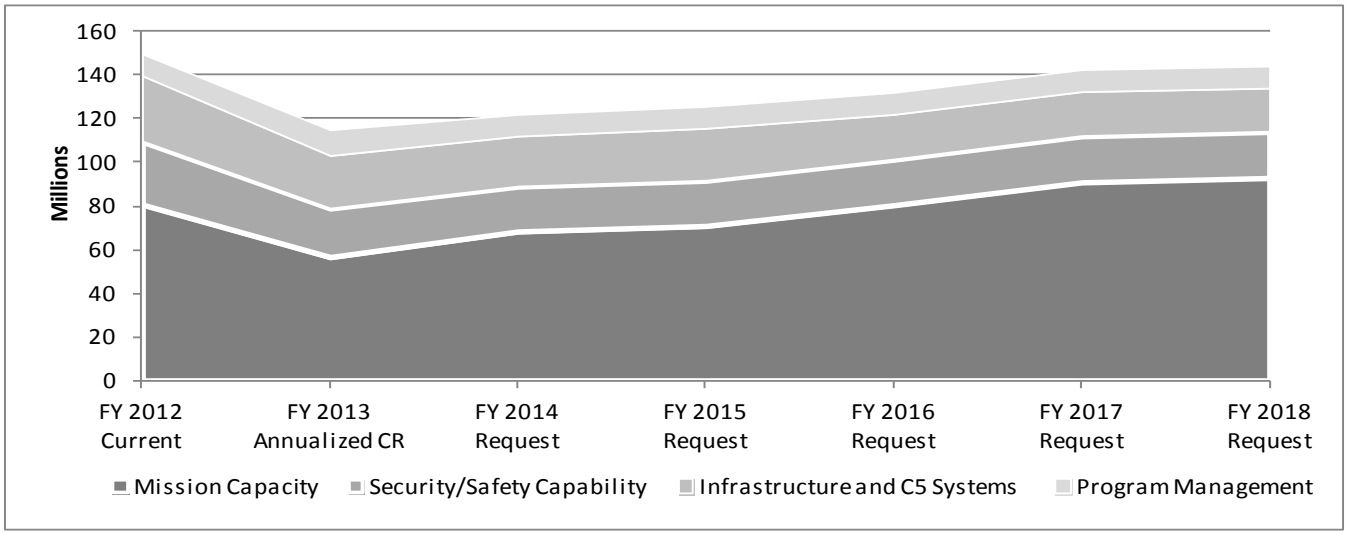
Program Goals and Funding
The STA funding supports the goal to provide safe, secure transportation in light of increased security risks and threats to the nuclear security enterprise.

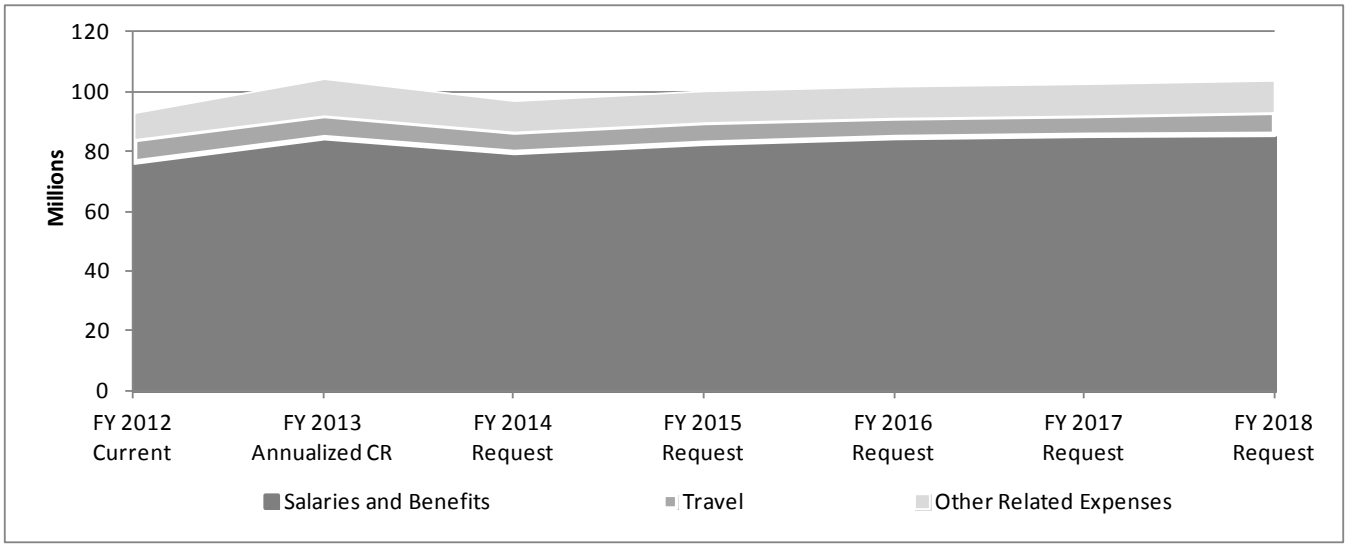
Performance Measures

Performance Goal (Measure)	**Safe and Secure Shipments** - Annual percentage of shipments completed safely and securely without compromise/loss of nuclear weapons/components or a release of radioactive material.		
Fiscal Year	**2012**	**2013**	**2014**
Target	100 % of shipments	100 % of shipments	100 % of shipments
Result	**Met** - 100		
Endpoint Target	Annually, ensure that 100% of shipments are completed safely and securely without compromise/loss of nuclear weapons/components or a release of radioactive material.		

Figure 1: Relative Out-Year Funding Priorities in Weapons Activities – Secure Transportation Asset







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

(Dollars in Thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Operations and Equipment			
Mission Capacity	80,696	56,458	68,286
Security/Safety Capability	29,112	22,457	20,763
Infrastructure and C5 Systems	30,108	24,199	23,007
Program Management	10,098	11,851	10,016
Total, Operations and Equipment	**150,014**	**114,965**	**122,072**

Out Year Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
Operations and Equipment					
Mission Capacity	68,286	70,829	80,418	90,985	93,009
Security/Safety Capability	20,763	20,922	21,084	21,325	21,311
Infrastructure and C5 Systems	23,007	23,910	20,585	20,268	19,885
Program Management	10,016	10,100	10,143	10,182	10,200
Total, Operations and Equipment	**122,072**	**125,761**	**132,230**	**142,760**	**144,405**

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, uniforms or allowances as authorized by 5 U.S.C. 5901-5902, maintains and provides the transportation fleet and aviation services; (2) Security/Safety Capability - develops and implements new fleet technologies, intensifies agent training and implements Security, Safety and Emergency Response programs; (3) Infrastructure and C5 systems - provides facility maintenance, support for minor construction projects and C5 systems; and (4) Program Management - provides corporate functions and business operations that control, assist and direct secure transport operations.

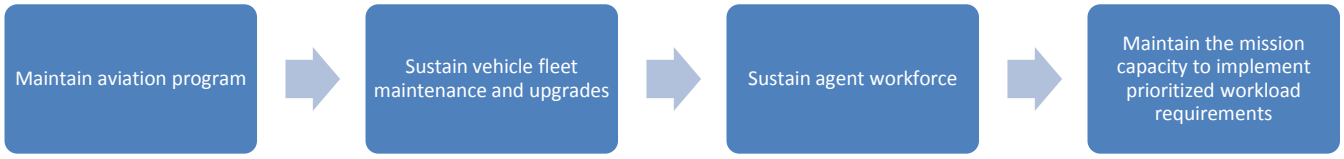
Explanation of Funding and/or Program Changes

	(Dollars in Thousands)		
	FY 2013 Annualized CR	FY 2014 Request	FY 2014 Request vs. FY 2013 Annualized CR
Secure Transportation Asset (STA)			
Operations and Equipment			
Mission Capacity	**56,458**	**68,286**	**+11,828**
The increase is attributable to the production of armored tractors and escort vehicles for the vehicle fleet and the design phase of the Mobile Guardian replacement transporter. These increases have been offset by a reduction for anticipated management efficiency and workforce restructuring reductions for Weapons Activities.			
Security/Safety Capability	**22,457**	**20,763**	**-1,694**
The decrease is a net result of the reductions in training program contractor support costs for offsite training venues, offset by the increase from security capabilities validation being moved here from Program Management. This decrease also includes a reduction for anticipated management efficiency and workforce restructuring reductions for Weapons Activities.			
Infrastructure and C5 Systems	**24,199**	**23,007**	**-1,192**
The decrease is due to the anticipated management efficiency and workforce restructuring reductions. The decrease is offset by increases for replacement of current communication systems reaching end of life cycle with the production of the Advanced Radio Enterprise System.			
Program Management	**11,851**	**10,016**	**-1,835**
The decrease is a result of security capabilities validation being moved to Security/Safety Capability, and streamlined contractor support for business programs and the internal review program. This decrease also includes a reduction for anticipated management efficiency and workforce restructuring reductions for Weapons Activities.			
Total Funding Change, Secure Transportation Asset, Operations and Equipment	**114,965**	**122,072**	**+7,107**

Mission Capacity
Overview

Mission Capacity sustains STA systems capacity through equipment purchases and maintenance of the agent manpower to fulfill the present transportation requirements. This goal includes the following activities: (1) Conduct Agent Candidate Training (ACT) classes to maintain the agent end-strength. Funding supports the recruiting, equipping, and training of federal agent candidates necessary to maintain the workforce impacted by attrition. (2) Replace the aging vehicle fleet with newly designed vehicles. Funding supports the design, engineering, testing, and fielding of specialized vehicles, tractors and trailers necessary for successful convoy operations. (3) Maintain the aviation program. Funding supports the maintenance and sustainment of the aircraft fleet. (4) Maintain readiness posture of the STA fleet.

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

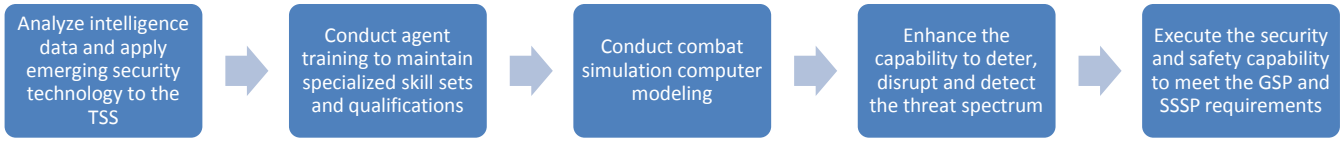
Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• Ensured federal agent units were ready to support at least 80 percent of the Unit mission weeks identified on the Predictable schedule. • Purchased equipment and support equipment for the two Boeing 737-400. • Produced 8 Escort Vehicle Light Chassis (EVLC) for replacement of aged Escort Vehicle replacements. • Began initial activities to baseline and develop the conceptual design for the replacement Safeguards Transporter (Mobile Guardian).	**80,696**
FY 2013	• 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. • Continue the production of EVLC for replacement of aged Escort Vehicle Fleet. • 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 two large fixed wing aircraft, one DC-9 and one Learjet 35. • Continue developmental design for replacement Safeguards Transporter (Mobile Guardian).	**56,458**
FY 2014	• Continue to inspect, test and maintain vehicle fleet to support mission requirements.	**68,286**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	• Continue to optimize scheduling and transportation operations to meet transportation requirements. • Continue to maintain the agent work force by conducting agent candidate class(es). • Continue to maintain and operate air transportation fleet. • Continue to provide support for limited life components and emergency management programs. • Continue to upgrade and replace aging escort vehicles and armored tractors. • Continue developmental design for replacement Safeguards Transporter (Mobile Guardian).	
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Continue to inspect, test and maintain vehicle fleet to support mission requirements. • Continue to maintain and operate air transportation fleet. • 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. • Continue design and enhancements for replacement Safeguards Transporter (Mobile Guardian) and delivery of First production unit.	**70,829** **80,418** **90,985** **93,009**

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, analysis of intelligence data, dissemination of information and the application of emerging physical security technology. (2) Sustains and supports intensified training. Funding supports the technical equipment, logistics, curriculum development, and staffing necessary to conduct Special Response Force (SRF) training, Operational Readiness Testing (ORT), and agent sustainment training. Sustainment training includes, but is not limited to, surveillance detection, tactics, advance driving, firearms and mission operations. Funds are utilized to obtain off-site training venues that are capable of supporting units or commands, necessary to maintain specialized federal agent skills and qualifications, including off-road drive and weapon training. (3) Maintains security and safety programs. Funding supports liaison with state and local law enforcement organizations; analysis of security methods and equipment; vulnerability assessments; development of the Site Safeguards and Security Plan and combat simulation computer modeling; validation of safety and security (including force on force exercises); and execution of safety studies and safety engineering for the Safety Basis, Nuclear Explosive Safety, and over-the-road safety issues. (4) Maintains the NNSA Emergency Operations Center (EOC) in Albuquerque, New Mexico, and trains and exercises the STA response capability. Funding supports the Emergency Management Program to include Federal Agent Incident Command System refresher and sustainment training.

Sequence



Benefits

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

Funding and Activity Schedule

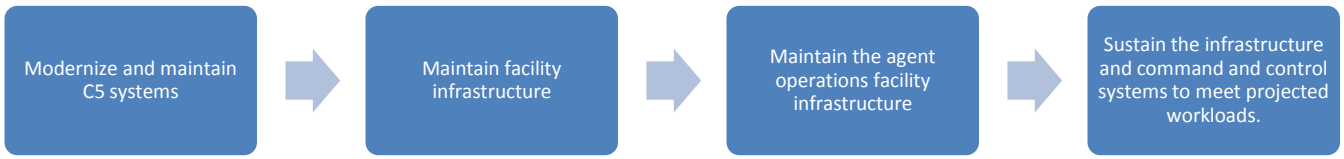
Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• Conducted federal agent training to maintain skill sets. • Completed the following for the Overland Palletized Unit Shipper project: Final design for stakeholder feedback; baseline design review and final design review for loading equipment. • 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 access to multiple national-level law enforcement reporting and analytical databases which provides for significant localized trending capability. • Completed a Force on Force Exercise to validate the TSS security system effectiveness. • Completed an Emergency Operation Center Exercise to validate the emergency management system effectiveness.	**29,112**

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2013	• Conducted 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. • Conducted Emergency Operation Center Exercise to validate the emergency management system effectiveness. • Operated the Transportation Safeguards System (TSS) within the safety and security licenses, based on the updated/upgraded Site Safeguards and Security Plan. • Maintained the federal agent force skill sets, equipment and training tempo to meet GSP and workload requirements. • Maintained safety programs to ensure safe over-the-road operations; to include a Nuclear Explosive Safety Study and Documented Safety Analysis. • Conducted vulnerability analysis and implemented access controls at STA sites. • Produced OPUS units.	**22,457**
FY 2014	• 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. • Continue to conduct Emergency Operation Center Exercises to validate the emergency management system effectiveness. • Continue to operate the Transportation Safeguards System (TSS) within the safety and security licenses, based on the updated/upgraded Site Safeguards and Security Plan. • Continue to maintain the federal agent force skill sets, equipment and training tempo to meet GSP and workload requirements. • Continue to maintain safety programs to ensure safe over-the-road operations; to include a Nuclear Explosive Safety Study and Documented Safety Analysis. • Continue to conduct vulnerability analysis and implement access controls at STA sites.	**20,763**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• 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. • Continue to conduct Emergency Operation Center Exercises to validate the emergency management system effectiveness. • Continue to operate the Transportation Safeguards System (TSS) within the safety and security licenses, based on the updated/upgraded Site Safeguards and Security Plan. • Continue to maintain the federal agent force skill sets, equipment and training tempo to meet GSP and workload requirements. • Continue to maintain safety programs to ensure safe over-the-road operations; to include a Nuclear Explosive Safety Study and Documented Safety Analysis. • Continue to conduct vulnerability analysis and implement access controls at STA sites. • Continue to maintain OPUS units.	**20,922** **21,084** **21,325** **21,311**

Infrastructure and C5 Systems
Overview

Infrastructure and C5 Systems supports 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 68 facilities and their respective equipment. Facilities include, but are not limited to federal agent commands, vehicle electronic and mechanical facilities, relay stations, training facilities and facilities utilized to house support staff.

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

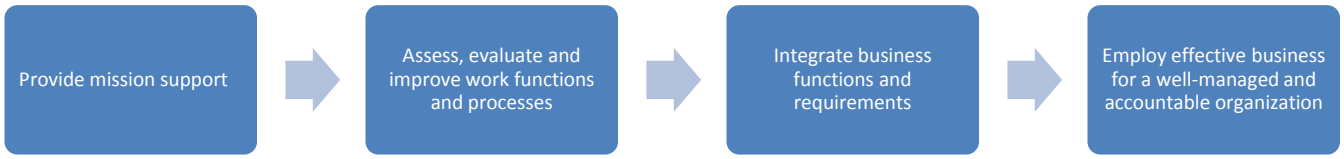
Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• Completed modernization of the Transportation Command and Control Systems (TCCS) technology infrastructure, including servers and workstations, upgrading all operating systems to the latest Microsoft Windows technology. • Completed installation of new satellite communication packages in all mission vehicles. • Completed a next generation communication (Advanced Radios Enterprise System) demonstration project. • Acquired 40 acres at Fort Chaffee, AR at no cost. • Acquired 40,000 square foot warehouse and 11 bay buildings at Fort Chaffee, AR at no cost. • Conducted facility maintenance in accordance with the Ten-Year Site Plan requirements.	**30,108**
FY 2013	• Initiated the modernization of classified command and control communication, computer and cyber (C5) systems. • Initiated the next generation communication (Advanced Radios Enterprise System) project incorporating secure end-to-end convoy communications beyond line of sight including the integration of VHF, UHF, dual cellular and satellite communications. • Sustained and maintained the STA facilities and equipment.	**24,199**
FY 2014	• Continue the initiatives to modernize the classified command and control communication, computer and cyber (C5) systems. • Continue the next generation communication (Advanced Radios Enterprise System) project incorporating secure end-to-end convoy communications beyond line of sight including the integration of VHF, UHF, dual cellular and satellite communications.	**23,007**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	• Continue to sustain and maintain the STA facilities and equipment.	
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Continue the initiatives to modernize the classified command and control communication, computer and cyber (C5) systems. • Continue the next generation communication (Advanced Radios Enterprise System) project incorporating secure end-to-end convoy communications beyond line of sight including the integration of VHF, UHF, dual cellular and satellite communications. • Continue to sustain and maintain the STA facilities and equipment.	**23,910** **20,585** **20,268** **19,885**

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, 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 2012	• Provided corporate functions and business operations that control, assist and direct secure transportation operations. • 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 Defense Programs (DP) Work Breakdown Structure.	**10,098**
FY 2013	• Provide corporate functions and business operations that control, assist and direct secure transportation operations. • Continue to integrate the DP Work Breakdown Structure foundation into existing project list to provide a consistent framework for planning, programming, budgeting and evaluation within Defense Programs.	**11,851**
FY 2014	• Continue to provide corporate functions and business operations that control, assist and direct secure transportation operations. • Continue to provide a consistent framework for planning, programming, budgeting and evaluation within Defense Programs.	**10,016**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Continue to provide corporate functions and business operations that control, assist and direct secure transportation operations. • Continue to provide a consistent framework for planning, programming, budgeting and evaluation within Defense Programs.	**10,100** **10,143** **10,182** **10,200**

Supporting Information

Capital Operating Expenses [a]

Capital Operating Expenses Summary

(Dollars in Thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Capital Operating Expenses			
General Plant Projects	2,450	2,504	2,559
Capital Equipment	9,189	9,391	9,598
Total, Capital Operating Expenses	**11,639**	**11,895**	**12,157**

Outyear Capital Operating Expenses Summary

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
Capital Operating Expenses					
General Plant Projects	2,559	2,615	2,673	2,732	2,792
Capital Equipment	9,598	9,809	10,025	10,246	10,471
Total, Capital Operating Expenses	**12,157**	**12,424**	**12,698**	**12,978**	**13,263**

[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.

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

(Dollars in Thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Program Direction			
Salaries and Benefits	76,918	84,878	80,056
Travel	7,326	7,216	6,647
Other Related Expenses	8,858	12,302	10,415
Total, Program Direction	**93,102**	**104,396**	**97,118**
Total Full Time Equivalents	**547**	**547**	**562**

Out-Year Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
Program Direction					
Salaries and Benefits	80,056	83,060	84,915	85,646	85,959
Travel	6,647	6,757	6,375	6,411	7,186
Other Related Expenses	10,415	10,525	10,597	10,648	10,686
Total, Program Direction	**97,118**	**100,342**	**101,887**	**102,705**	**103,831**

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) conducting air movements of limited life components and federal agents; (3) tracking nuclear convoys and providing emergency response capability; (4) performing staff oversight of three federal agent commands; (5) providing oversight to the design and implementation of classified security technologies; (6) providing critical skills training to the federal agent force and staff; (7) staffing and operating the Training and Logistics Command and conducting two 20-week training classes per year for new agents, and (8) performing administrative and logistical functions for the organization.

The total FTEs also support the federal agent force, federal pilots, emergency management, security and safety programs and all other key elements of the STA mission. The onboard count may not match the FTEs.

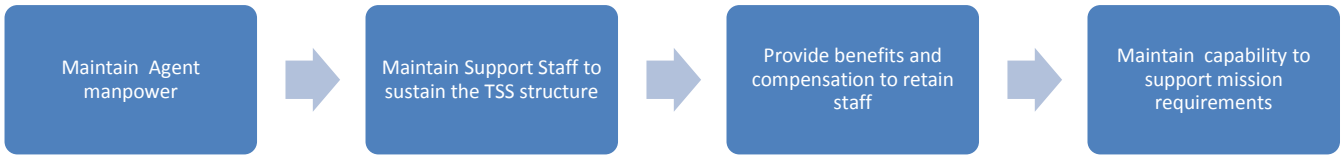
Explanation of Funding and/or Program Changes

	(Dollars in Thousands)		
	FY 2013 Annualized CR	FY 2014 Request	FY 2014 Request vs. FY 2013 Annualized CR
Program Direction			
Salaries and Benefits	**84,878**	**80,056**	**-4,822**
The decrease is attributable to workforce restructuring reductions and accounts for average vacancies and efficiencies in overtime and permanent change of station.			
Travel	**7,216**	**6,647**	**-569**
The decrease reflects the efficiencies achieved in support of the President's Executive Order "*Promoting Efficient Spending,"* and streamlined travel costs achieved by utilizing electronic means of communication such as video teleconferencing.			
Other Related Expenses	**12,302**	**10,415**	**-1,887**
The decrease reflects efficiencies achieved by integrating all training events and savings related to staff FTE reduction in areas of legal fees, transit subsidy, employee assistance program, and tenant fees.			
Total, Funding Change, Secure Transportation Asset, Program Direction	**104,396**	**97,118**	**-7,278**

Salaries and Benefits
Overview

Salaries and benefits are provided for the program staff at Albuquerque, New Mexico; and Fort Chaffee, Arkansas, for federal agents and the support staff at the three federal agent force locations (Albuquerque, New Mexico; Oak Ridge, Tennessee; and, Amarillo, Texas). It also includes overtime, workmen's compensation, and health/retirement benefits associated with federal agents, secondary positions, and support staff.

Sequence



Benefits

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

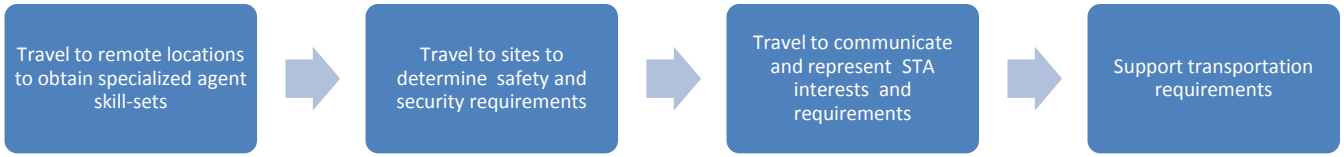
Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• Stabilized the federal workforce (staff and agents) to support the workload. • Enhanced the effectiveness of the Agent Recruitment Program by implementing pre-screening criteria to evaluate candidates prior to incurring recruitment costs.	**76,918**
FY 2013	• Maintain agent strength to support workload requirements. • Maintain Organizational Staff strength to support mission requirements. • Finalize Federal Pilot hiring. • Manage overtime expenditures. • Support key safety-related initiatives to reduce worker's compensation expenditures. • Conduct recruitment for the Agent Candidate Training (ACT) class and ensure the class size matched the projected agent attrition.	**84,878**
FY 2014	• Continue to maintain agent strength to support workload requirements. • Continue to effectively manage overtime expenditures. • Continue to conduct agent candidate classes. • Continue to support key safety-related initiatives to reduce workers' compensation expenditures.	**80,056**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Continue to maintain agent strength to support workload requirements. • Continue to effectively manage overtime expenditures. • Continue to conduct agent candidate classes. • Continue to support key safety-related initiatives to reduce worker's compensation expenditures.	**83,060** **84,915** **85,646** **85,959**

Travel
Overview

Travel is provided 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.

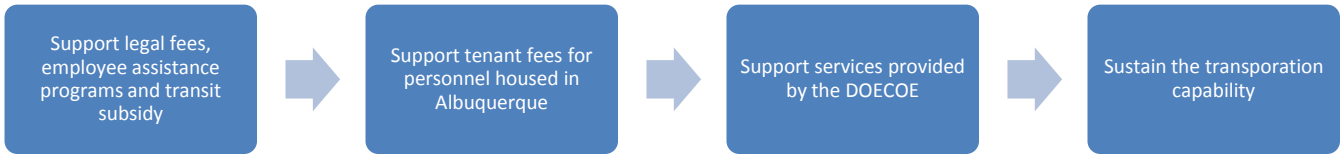
Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• 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.	**7,326**
FY 2013	• Support travel required to transport nuclear weapons, components and special nuclear material. • 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.	**7,216**
FY 2014	• Continue to support travel required to transport nuclear weapons, components and special nuclear material. • Continue to support 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.	**6,647**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Continue to support travel required to transport nuclear weapons, components and special nuclear material. • Continue to support 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.	**6,757** **6,375** **6,411** **7,186**

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 2012	• Analyzed and reduced the number of Q clearances of STA employees, reducing costs. • Reduced the number of federal and contractor staff designated to maintain requirements of the Human Reliability Program, reducing costs. • Provided computer-related services to the geographically disbursed STA entities.	**8,858**
FY 2013	• Support the fees paid to the Albuquerque Complex for STA personnel. • Support the fees for services provided by the Department's Common Operating Environment. • Provide for legal fees, employee assistance program and transit subsidy. • Support the Human Reliability requirements.	**12,302**
FY 2014	• Continue to support the fees paid to the Albuquerque Complex. • Continue to support the fees for additional services provided by the Department's Common Operating Environment. • Continue to provide for legal fees, employee assistance program and transit subsidy. • Continue to support the Human Reliability Program requirements.	**10,415**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Continue to support the fees paid to the Albuquerque Complex. • Continue to support the fees for services provided by the Department's Common Operating Environment. • Continue to provide for legal fees, employee assistance program and transit subsidy. • Continue to support the Human Reliability Program requirements.	**10,525** **10,597** **10,648** **10,686**

Facilities and Infrastructure Recapitalization Program
Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Facilities and Infrastructure Recapitalization Program			
Operations and Maintenance (O&M)			
Recapitalization	81,720	0	0
Infrastructure Planning	9,400	0	0
Facility Disposition	5,000	0	0
Total, O&M Facilities and Infrastructure Recapitalization Program	**96,120**	**0**	**0**

Out-Year Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
Facilities and Infrastructure Recapitalization Program					
Operations and Maintenance (O&M)	0	0	0	0	0
Recapitalization	0	0	0	0	0
Infrastructure Planning	0	0	0	0	0
Facility Disposition	0	0	0	0	0
Total, O&M Facilities and Infrastructure Recapitalization Program	**0**	**0**	**0**	**0**	**0**

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
National Defense Authorization Act for FY 2013 (P.L. 112-239)
The Continuing Appropriations Resolution, 2013 (P.L. 112-175)

Overview

The Facilities and Infrastructure Recapitalization Program (FIRP) has advanced 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 and will continue to be utilized until all funding is expended. 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

In FY 2012, FIRP accomplished several significant milestones: 1) reduced legacy deferred maintenance by $40.7 million raising the cumulative total to $877 million, 98% of the program goal of $900 million; 2) Reduced the NNSA complex footprint by 92,000 gross square feet raising the cumulative total to 3,479,000, 116% of the program goal of 3,000,000; 3) Replaced 436,000 square feet of roofs at seven NNSA sites raising the Roof Asset Management Program's (RAMP) total to 4,181,000 square feet of roof replacements.

Program Planning and Management
Funding for this program was last requested in FY 2012; therefore this section is not applicable. However, projects will continue to be executed until all funds are expended.

Strategic Management
Funding for this program was last requested in FY 2012; therefore this section is not applicable.

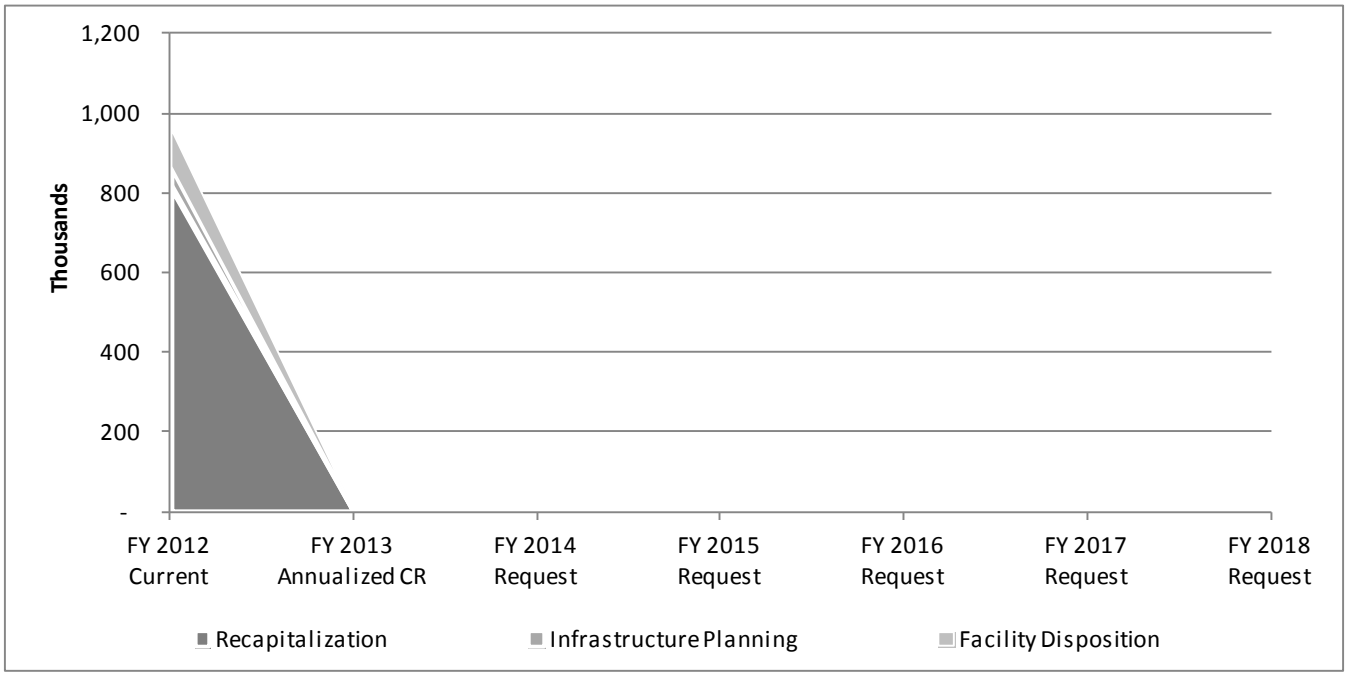
Major Outyear Priorities and Assumptions
Funding for this program was last requested in FY 2012; therefore this section is not applicable.

Program Goals and Funding
Funding for this program was last requested in FY 2012; therefore this section is not applicable.

Performance Measures

Performance Goal (Measure)	**Deferred Maintenance** - Annual dollar value and cumulative percentage of legacy deferred maintenance baseline of $900 million, funded for elimination by FY 2013.		
Fiscal Year	**2012**	**2013**	**2014**
Target	24.5 annual dollar value (M) and cumulative 95.7%	N/A	N/A
Result	**Exceeded** - 40.7 (97.5%)		
Endpoint Target	Eliminate $900,000,000 of NNSA's legacy deferred maintenance backlog by the end of 2013. Note: NNSA leadership decided to end FIRP upon achieving 95% of the $900 million program goal. The FIRP achieved 97.5% or $877 million in FY 2012. Funding for this program was last requested in FY 2012, however, projects continue to be executed until all funds are expended. In FY 2013, funds were redirected to a new capability based investment initiative.		

Figure 1: Relative Out-Year Funding Priorities in Weapons Activities – Facilities and Infrastructure Recapitalization Program



Explanation of Funding and/or Program Changes

	(Dollars in Thousands)		
	FY 2013 Annualized CR	FY 2014 Request	FY 2014 Request vs. FY 2013 Annualized CR
Facilities and Infrastructure Recapitalization Program			
Operations and Maintenance			
Recapitalization	**0**	**0**	**0**
Reflects the last request for funding for FIRP in FY 2012, however, projects continue to be executed until all funds are expended.			
Infrastructure Planning	**0**	**0**	**0**
Reflects the last request for funding for FIRP in FY 2012, however, projects continue to be executed until all funds are expended.			
Facility Disposition	**0**	**0**	**0**
Reflects the last request for funding for in FY 2012, however, projects continue to be executed until all funds are expended.			
Total Funding Change, Facilities and Infrastructure Recapitalization Program	**0**	**0**	**0**

Recapitalization
Overview

Recapitalization has funded capital renewal projects required to restore the facilities and infrastructure of the nuclear security enterprise to an acceptable condition. The subprogram has funded projects in accordance with established criteria and priorities that target deferred maintenance reduction and repair (non-programmatic) of facilities and infrastructure.

Sequence

This is not applicable for this section.

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 2012	• Improved 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. • Replaced mechanical and electrical systems and utility distribution components at six sites. • Executed 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 provided $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 last requested in FY 2012, however, projects continue to be executed until all funds are expended.	**0**
FY 2014	• FIRP last requested in FY 2012, however, projects continue to be executed until all funds are expended.	**0**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• FIRP last requested funding in FY 2012.	**0** **0** **0** **0**

Infrastructure Planning
Overview

Infrastructure Planning has funded planning and design activities for upcoming and ongoing Recapitalization projects. Its primary objective has been to ensure that projects are adequately planned and designed in advance of project start. The planning funds have 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 has 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

This is not applicable for this section.

Benefits

- Allows timely design of new projects that accurately reflect existing conditions and required scope.
- Permits scope, schedule and cost to be clearly understood before the work undergoes procurement process.
- Promotes 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 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 2012	• Designed repairs and refurbishments of mission critical and mission dependent facilities throughout the enterprise. The preponderance of work was in building mechanical and electrical systems, HVACs, chillers and cooling towers, steam pipe repairs, and high voltage electrical distribution upgrades. • Funded pre and post award activities necessary for the procurement of project materials and construction, and other project costs through execution and contract closeouts. • Funded unique, FIRP "end of program" documentation, assessments, closeouts, record keeping, etc.	**9,400**
FY 2013	• FIRP last requested in FY 2012, however, projects continue to be executed until all funds are expended.	**0**
FY 2014	• FIRP last requested in FY 2012, however, projects continue to be executed until all funds are expended.	**0**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• FIRP last requested funding in FY 2012.	**0** **0** **0** **0**

Facility Disposition
Overview

The Facility Disposition subprogram has 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 deferred maintenance (DM). 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
This is not applicable for this section.

Benefits
- Reduces energy consumption, security risks, environment, safety and health hazards, surveillance and maintenance costs, and deferred maintenance.
- Contributes 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 2012	• Demolished 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 and removed trailers at SNL.	**5,000**
FY 2013	• FIRP last requested in FY 2012, however, projects continue to be executed until all funds are expended.	**0**
FY 2014	• FIRP last requested in FY 2012, however, projects continue to be executed until all funds are expended.	**0**
FY 2015	• FIRP last requested funding in FY 2012.	**0**
FY 2016		**0**
FY 2017		**0**
FY 2018		**0**

Supporting Information

Capital Operating Expenses [a]

Capital Operating Expenses Summary

(Dollars in Thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Capital Operating Expenses			
General Plant Projects	25,349	25,907	26,477
Capital Equipment	0	0	0
Total, Capital Operating Expenses	**25,349**	**25,907**	**26,477**

Outyear Capital Operating Expenses Summary

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
Capital Operating Expenses					
General Plant Projects	26,477	0	0	0	0
Capital Equipment	0	0	0	0	0
Total, Capital Operating Expenses	**26,477**	**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.

Nuclear Counterterrorism Incident Response Program
Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Nuclear Counterterrorism Incident Response Progam (Homeland Security) [a]			
Emergency Response (Homeland Security) [b]	136,978	150,043	0
National Technical Nuclear Forensics (Homeland Security) [b]	11,279	11,694	0
Emergency Management (Homeland Security) [b]	6,949	6,629	0
Operations Support (Homeland Security) [b]	8,691	8,799	0
International Emergency Management and Cooperation	7,250	7,139	0
Nuclear Counterterrorism (Homeland Security) [b c]	50,222	63,248	0
Total, Nuclear Counterterrorism Incident Response Program	**221,369**	**247,552**	**0**

Out-Year Target Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
Nuclear Counterterrorism Incident Response Program (Homeland Security) [a]					
Emergency Response (Homeland Security) [b]	0	0	0	0	0
National Technical Nuclear Forensics (Homeland Security) [b]	0	0	0	0	0
Emergency Management (Homeland Security) [b]	0	0	0	0	0
Operations Support (Homeland Security) [b]	0	0	0	0	0
International Emergency Management and Cooperation	0	0	0	0	0
Nuclear Counterterrorism (Homeland Security) [b c]	0	0	0	0	0
Total, Nuclear Counterterrorism Incident Response Program	**0**	**0**	**0**	**0**	**0**

[a] This represents the proposed control level.
[b] Office of Management and Budget (OMB) Homeland Security designation.
[c] The Nuclear Counterterrorism subprogram has been moved to the Counterterrorism and Counterproliferation Programs effective in FY 2014.

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
National Defense Authorization Act for FY 2013 (P.L. 112-239)
The Continuing Appropriations Resolution, 2013 (P.L. 112-175)

Overview

In FY 2014, the existing Nuclear Counterterrorism Incident Response Program Government Performance Results Act (GPRA) unit will move to the Defense Nuclear Nonproliferation (DNN) appropriation to align all NNSA funding for reducing global nuclear dangers in one appropriation. 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 the NNSA and DOE strategic objective "Secure our Nation" and "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. That program will be funded out of Counterterrorism and Counterproliferation Programs in FY 2014.

Program Accomplishments and Milestones

In FY 2012, NCTIR accomplished significant milestones in program development. These accomplishments include: 1) deployed multiple field teams to 40 high-profile events and 28 emergency responses around the world (an additional 20 responses did not result in deployments); 2) participated in 13 international counterterrorism exercises and provided 20 training courses, including I-RAPTER, I-MEDICAL, and I-Consequence Management to an audience of more than 920 international emergency response personnel, and 3) completed OCONUS Emergency Communications Network (ECN) installations of two new nodes in France and the United Kingdom.

Program Planning and Management

The FY 2014 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 Acting 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 affecting U.S. interests, domestically or abroad;
- successful interactions with agency partners, and
- striking the right balance between technology and resources to maintain readiness.

Major Outyear Priorities and Assumptions

Outyear funding levels in the DNN appropriation for NCTIR reflect major program priorities for the FYNSP:

- sustain our mission, maintain readiness and recapitalize equipment to maintain state of the art capabilities;
- sustainment of stabilization capability, and
- continue international efforts in radiological search training, and provide detection equipment and technical support for radiological and nuclear incident and counterterrorism.

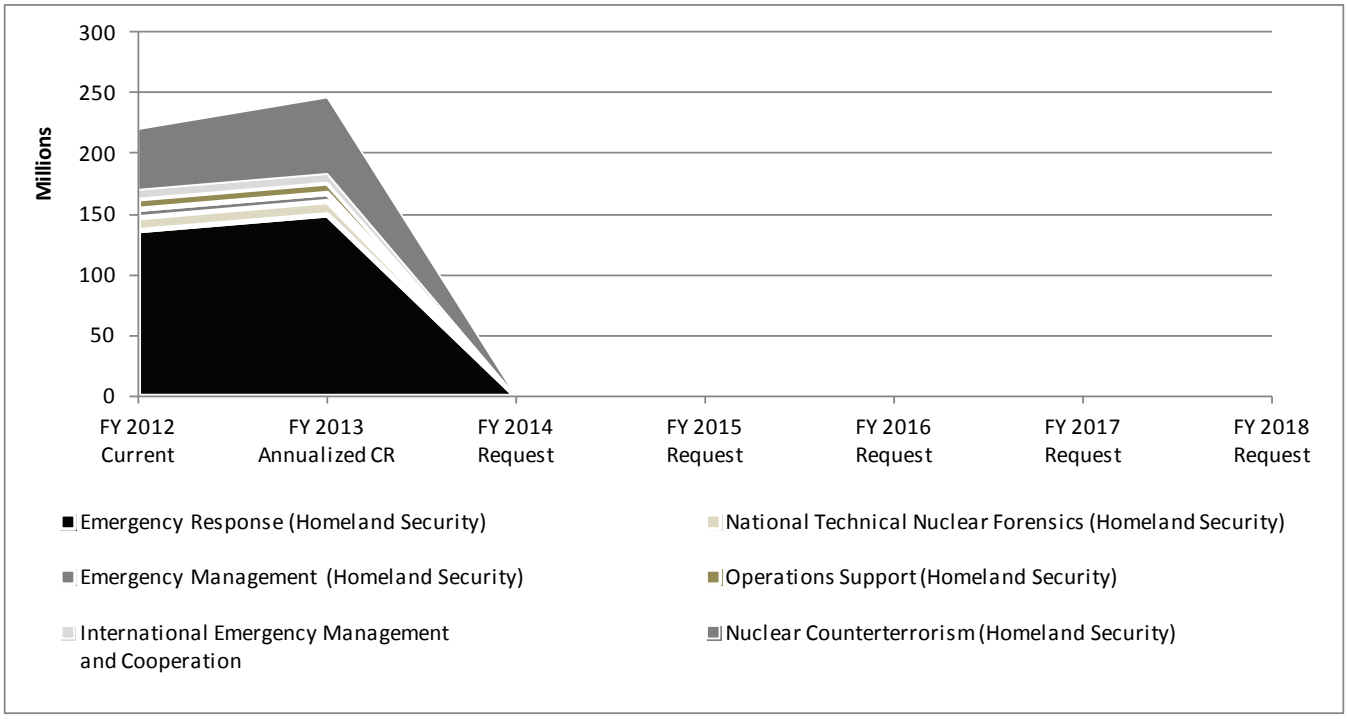
Program Goals and Funding

The NCTIR program serves as the Department of Energy/National Nuclear Security Administration lead for all emergency management activities. The Program will train, equip and exercise teams of nuclear experts to respond to a nuclear or radiological incident worldwide, continue partnerships with the FBI and DoD, and maintain the national capability to render safe any nuclear device threat.

Performance Measures

Performance Goal (Measure)	**Emergency Operations Readiness Index** - Emergency Operations Readiness Index (EORI) measures the overall organizational readiness to respond to and mitigate radiological or nuclear incidents worldwide. (This index is measured from 1 to 100 with higher numbers meaning better readiness--the first three quarters will be expressed as the readiness at those given points in time whereas the year end will be expressed as the average readiness for the year's four quarters).		
Fiscal Year	**2012**	**2013**	**2014**
Target	91 EORI	91 EORI	N/A
Result	**Exceeded** – 93		
Endpoint Target	Annually, maintain an Emergency Operations Readiness Index of 91 or higher. Note: The Nuclear Counterterrorism Incident Response (NCTIR) program moved from the Weapons Activities appropriation to the Defense Nuclear Nonproliferation appropriation in FY 2014.		

Figure 1: Relative Out-Year Funding Priorities in Defense Nuclear Nonproliferation – Nuclear Counterterrorism Incident Response Program



Explanation of Funding and/or Program Changes

	(Dollars in Thousands)		
	FY 2013 Annualized CR	FY 2014 Request	FY 2014 Request vs. FY 2013 Annualized CR
Nuclear Counterterrorism Incident Response Program			
Emergency Response (Homeland Security)			
· **Nuclear Emergency Support Team**	**102,244**	**0**	**-102,244**
This decrease reflects the program's transfer in FY 2014 from the Weapons Activities account to the Defense Nuclear Nonproliferation appropriation.			
· **Other Assets**	**26,999**	**0**	**-26,999**
This decrease reflects the program's transfer in FY 2014 from the Weapons Activities account to the Defense Nuclear Nonproliferation appropriation.			
· **Render Safe Stabilization Operations**	**20,800**	**0**	**-20,800**
This decrease reflects the program's transfer in FY 2014 from the Weapons Activities account to the Defense Nuclear Nonproliferation appropriation.			
Subtotal, Emergency Response (Homeland Security)	**150,043**	**0**	**-150,043**
National Technical Nuclear Forensics (Homeland Security)	**11,694**	**0**	**-11,694**
This decrease reflects the program's transfer in FY 2014 from the Weapons Activities account to the Defense Nuclear Nonproliferation appropriation.			
Emergency Management (Homeland Security)	**6,629**	**0**	**-6,629**
This decrease reflects the program's transfer in FY 2014 from the Weapons Activities account to the Defense Nuclear Nonproliferation appropriation.			
Operations Support (Homeland Security)	**8,799**	**0**	**-8,799**
This decrease reflects the program's transfer in FY 2014 from the Weapons Activities account to the Defense Nuclear Nonproliferation appropriation.			
International Emergency Management and Cooperation	**7,139**	**0**	**-7,139**
This decrease reflects the program's transfer in FY 2014 from the Weapons Activities account to the Defense Nuclear Nonproliferation appropriation.			

	(Dollars in Thousands)		
	FY 2013 Annualized CR	FY 2014 Request	FY 2014 Request vs. FY 2013 Annualized CR
Nuclear Counterterrorism	**63,248**	**0**	**-63,248**
This decrease reflects the program's transfer in FY 2014 from the Weapons Activities account to the Defense Nuclear Nonproliferation appropriation.			
Total Funding Change, Nuclear Counterterrorism Incident Response Program	**247,552**	**0**	**-247,552**

Site Stewardship
Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Site Stewardship			
Operations and Maintenance			
Environmental Projects and Operations	45,191	46,978	0
Energy Modernization and Investment Program	0	10,262	0
Nuclear Materials Integration	36,990	18,963	0
Corporate Project Management	0	13,798	0
Total, Operations and Maintenance	**82,181**	**90,001**	**0**
Nuclear Materials Integration [a]	**0**	**0**	**17,679**
Corporate Project Management [a]	**0**	**0**	**13,017**
Enterprise Infrastructure			
Site Operations [a]	0	0	1,112,455
Site Support [a]	0	0	109,561
Sustainment [a]	0	0	433,764
Facilities Disposition [a]	0	0	5,000
Total, Enterprise Infrastructure	**0**	**0**	**1,660,780**
Minority Serving Institution Partnerships Program [a]	**0**	**0**	**14,531**
Construction [a]	**0**	**0**	**0**
Total, Site Stewardship	**82,181**	**90,001**	**1,706,007**

[a] This represents the proposed control level.

Out-Year Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
Site Stewardship					
Nuclear Materials Integration [a]	**17,679**	**17,640**	**17,863**	**18,276**	**18,733**
Corporate Project Management [a]	**13,017**	**12,833**	**12,080**	**10,137**	**8,238**
Enterprise Infrastructure					
Site Operations [a]	1,112,455	1,113,689	1,146,311	1,171,211	1,190,386
Site Support [a]	109,561	108,466	108,660	109,710	110,770
Sustainment [a]	433,764	417,403	419,984	405,094	318,464
Facilities Disposition [a]	5,000	5,000	5,000	5,000	5,000
Total, Enterprise Infrastructure	**1,660,780**	**1,644,558**	**1,679,955**	**1,691,015**	**1,624,620**
Minority Serving Institution Partnerships Program [a]	**14,531**	**14,392**	**14,299**	**14,169**	**14,043**
Construction [a]	**0**	**56,000**	**5,000**	**42,148**	**40,000**
Total, Site Stewardship	**1,706,007**	**1,745,423**	**1,729,197**	**1,775,745**	**1,705,634**

[a] This represents the proposed control level.

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
National Defense Authorization Act for FY 2013 (P.L. 112-239)
The Continuing Appropriations Resolution, 2013 (P.L. 112-175)

Overview

The Site Stewardship Government Performance and Results Act (GPRA) unit has been restructured in the FY 2014 Request following the creation of the Office of Infrastructure and Operations (NA-00), which moves NNSA towards a tenant-landlord site model in which NA-00 is the landlord and the Office of Defense Programs is now a tenant. As a result of this reorganization, NNSA is proposing to eliminate the Readiness in Technical Base and Facilities (RTBF) GPRA unit and split these activities between the existing Site Stewardship GPRA unit, and a new GPRA unit entitled "Nuclear Programs." Operations of Facilities, Containers, and the remaining Program Readiness activities, specifically Nuclear Criticality Safety Program and Nuclear Safety R&D will be funded out of Site Stewardship under the new Enterprise Infrastructure (EI) subprogram. Site Stewardship is now comprised of Nuclear Materials Integration (NMI), Corporate Project Management (CPM), Minority Serving Institution Partnerships Program and EI subprograms, as well as line-item construction.

The EI subprogram provides safe, secure, and compliant facilities and infrastructure to support national security mission needs of the NNSA, and realigns former RTBF activities with a focus on improving management of maintenance and re-investment activities needed to ensure long term viability of NNSA facilities and infrastructure. Additionally, EI will provide an enterprise-wide look and renewed prioritization strategy for nuclear security infrastructure customers without sacrificing needed infrastructure investments for short term programmatic needs. EI includes Site Operations, Sustainment, Site Support, and Facilities Disposition, subprograms. Site Operations funds utilities, leases, nuclear safety bases implementation and Environmental Safety and Health program implementation. The Sustainment subprogram funds a portion of NNSA's direct maintenance activities, while the program specific direct maintenance is requested within specific programs (Defense Nuclear Security, Readiness Campaigns, Nuclear Programs and Fissile Materials Disposition). In addition, re-capitalization projects, other General Plant Projects/Capital Equipment projects, expenses-funded projects, the Roof Asset Management program (RAMP), and other project costs related to line item construction are also funded within the Sustainment subprogram. The Site Support subprogram funds critical cross-cutting efforts such as nuclear safety research and development, nuclear criticality safety program activities, container activities, waste management and Long-Term Stewardship activities. The Facilities Disposition subprogram provides funds to manage the risk of deteriorated excess facilities to the worker, public, and environment.

The Construction subprogram supports approved line item facilities and infrastructure construction projects.

NMI funds the stabilization, consolidation, packaging and disposition of nuclear materials. NMI will also focus on the operation and maintenance of the Nuclear Materials Management and Safeguards System (NMMSS) that tracks and accounts for nuclear materials at DOE and Nuclear Regulatory Commission (NRC) licensed sites.

CPM funds the standardization of NNSA project management processes across the enterprise.

Minority Serving Institution Partnerships Program is a new subprogram that will fund research and education enhancements at under-represented colleges and universities in order to develop the needed skills and talent for NNSA's enduring technical workforce at the labs and production plants.

Program Accomplishments and Milestones

Environmental Projects and Operations (Long-Term Stewardship) submitted all regulatory documents and performed all regulatory required monitoring activities at the Kansas City Plant (KCP), Lawrence Livermore National Laboratory (LLNL), Pantex Plant and Sandia National Laboratories; completed Five Year Reviews of selected cleanup remedies at Pantex and LLNL as required under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); completed removal of the slab and contaminated soil at LLNL's Building 419 in compliance with Resource Conservation and Recovery Act (RCRA); and completed characterization of Zone 11 ground water area at Pantex to support the decisions for enhancement of the remedial systems as required under CERCLA.

NMI Program completed removal (de-inventory) of security category I/II special nuclear materials (SNM) from LLNL, and continues inactive actinides activities to support the treatment, consolidation and disposition of NNSA SNM no longer required to support the nuclear security enterprise mission at LANL and Y-12.

CPM awarded five tasks for Enterprise Construction Management Services. CPM has completed the Strength, Weaknesses, Opportunity and Threat Analysis of the NNSA enterprise project planning, execution and performance for project management, and has produced a final report. A Transformational Roadmap Improvement Action Plan was created for implementation of efficiencies, which will be implemented and tracked over the next two years. CPM analyzed the configuration management projects' weaknesses and benchmarked against industry and government best practices and systems. CPM has developed a standard Work Breakdown Structure (WBS) application which communicates and transfers data between the Enterprise, Program and Project participants. A standardized WBS was developed to include program and contract activities associated with portfolio management and project planning, including execution. CPM has begun the earned value management system task and cost analysis and estimating task.

Program Planning and Management

Site Stewardship will continue to ensure that scope and funding priorities are aligned with the Department's Strategic Plan goals and management principles. By engaging in quarterly project reviews of work activities across the nuclear security enterprise and allocating required resources to the enterprise infrastructure, Site Stewardship will address high risk issues and ensure the overall protection of public health, safety and the environment, as well as sustainability and modernization of the nuclear security enterprise. The Site Stewardship program will institutionalize responsible and accountable corporate facilities management processes.

Strategic Management

Site Stewardship will continue to address critical areas that support and align the nuclear security enterprise with national mission requirements. The EI program within the Site Stewardship GPRA unit will implement management strategies to ensure the NNSA facility and infrastructure portfolio is managed safely, efficiently and reliably. The EI program has been further broken out to allow emphasis on long term infrastructure sustainment, including maintenance, revitalization, and facility operations.

This strategy will enable the successful achievement of the program's strategic goals:

- Budgeting for potentially new unforeseen federal/state regulatory requirements.
- Ensuring coordination across DOE program offices and with other federal agencies.
- Ensuring NNSA facilities and infrastructure is available to support nuclear security enterprise missions. Reducing risks and costs associated with excess facilities by using an enterprise-wide prioritization approach and an integrated priority list of disposition projects. Ensuring protection of public health and the environment and compliance with environmental regulatory requirements.
- Advancing achievement of sustainability requirements.

Major Outyear Priorities and Assumptions

Outyear funding levels for the Site Stewardship total $6,955,999,000 for FY 2015 through FY 2018.

The trend in the four-year period shows an increase due to scope transfer from RTBF related to facility operations, and maintenance. It also includes construction (GPP and line-item) funding required to support facility investments needed to address the continued aging of NNSA infrastructure and escalating requirements in safety and security. To address these challenges and arrest growth in deferred maintenance, the EI program intends to manage the infrastructure resources with improved priority and consistency for facility maintenance activities and reinvestment projects. Site Stewardship will also continue the stabilization, consolidation, packaging, and disposition of nuclear materials and project performance improvement through the standardization of NNSA project management processes across the enterprise.

In addition, the Facilities Disposition Program will fund the preparation of high priority excess facilities throughout the enterprise for final demolition.

Program Goals and Funding

The program goals and objectives 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 long-term facility sustainment, the continuance of regulatory required long-term stewardship activities to reduce risks to human health and the environment, nuclear material disposition, project management and infrastructure operations, including environmental, energy, security, and modernization, and management challenges.

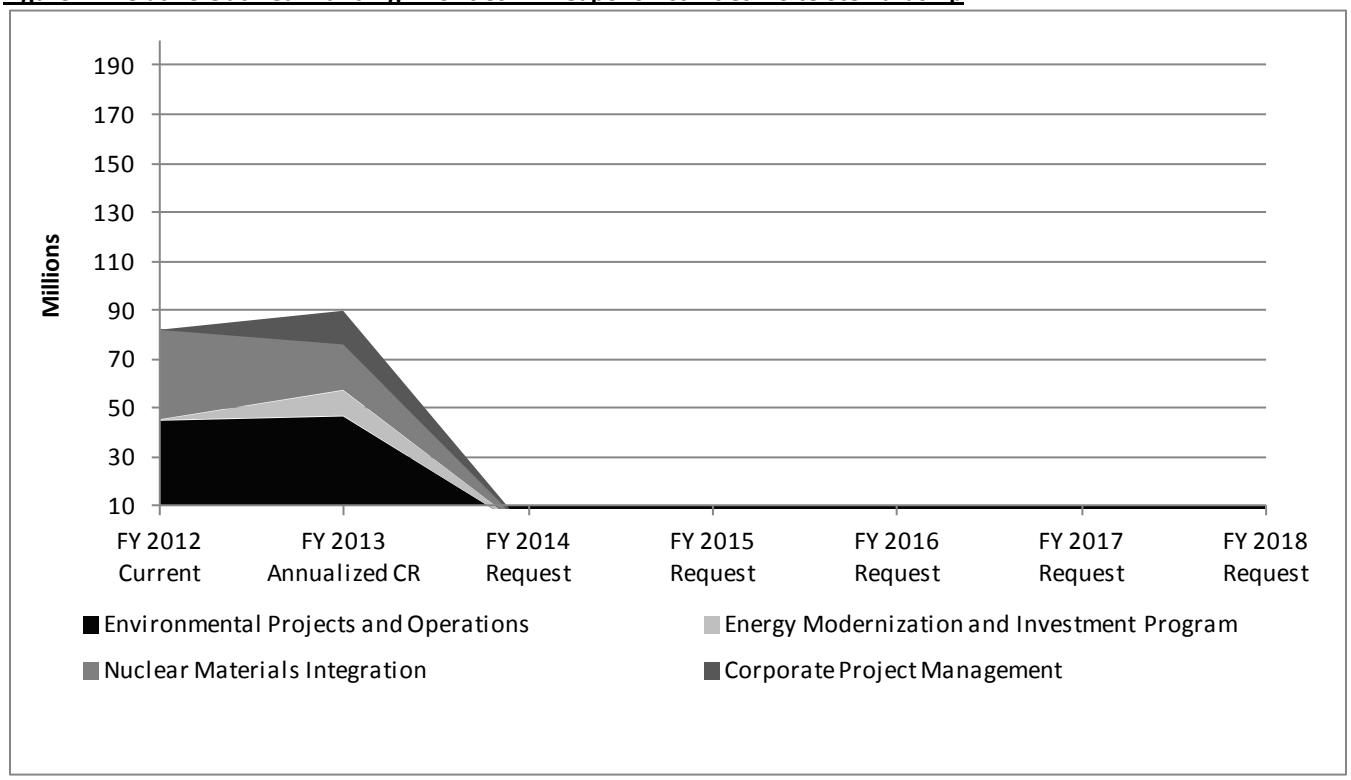
Performance Measures

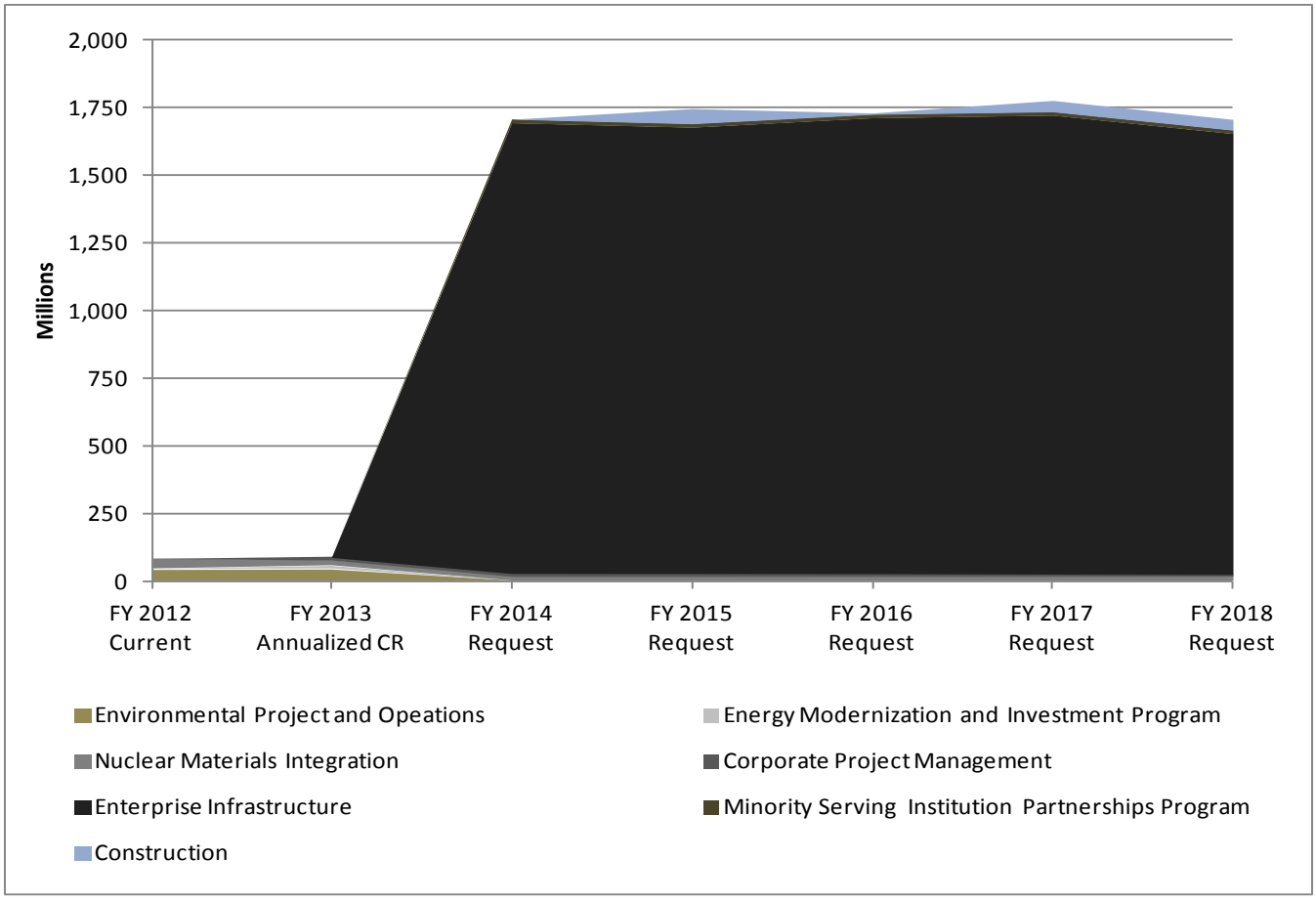
Performance Goal (Measure)	**Environmental Monitoring and Remediation** - Annual percentage of environmental monitoring and remediation deliverables that are required by regulatory agreements to be conducted at NNSA sites under Long Term Stewardship (LTS) that are executed on schedule and in compliance with all acceptance criteria.		
Fiscal Year	**2012**	**2013**	**2014**
Target	95% of deliverables	95% of deliverables	95% of deliverables
Result	**Exceeded** - 100		
Endpoint Target	Annually, submit on schedule and receive regulatory approval of at least 95% of all environmental monitoring and remediation deliverables that are required at NNSA sites under LTS by regulatory agreements.		

Performance Goal (Measure)	**Special Nuclear Material Removed** - Cumulative percentage of security category I/II Special Nuclear Material removed from Lawrence Livermore National Laboratory.		
Fiscal Year	**2012**	**2013**	**2014**
Target	100% of security category I/II Special Nuclear Material removed	N/A	N/A
Result	**Met** - 100		
Endpoint Target	By the end of FY 2012, all security category I and II SNM removed from the Lawrence Livermore National Laboratory. This performance goal has been met.		

Performance Goal (Measure)	**Facility Operations –** Enable NNSA missions by providing operational facilities to support nuclear weapon dismantlement, life extension, surveillance, and research and development activities, as measured by percent of scheduled versus planned days mission-critical and mission-dependent facilities are available without missing key deliverables.		
Fiscal Year	**2012**	**2013**	**2014**
Target	N/A	N/A	95% availability
Result			
Endpoint Target	Mission critical and mission dependent facilities are available at least 95% of scheduled days annually.		

Figure 1: Relative Out-Year Funding Priorities in Weapons Activities – Site Stewardship





Current Budget Structure	FY 2012 Current	FY 2013 Annualized CR	Proposed Budget Structure	FY 2014 Request
Site Stewardship			**Site Stewardship**	
Environmental Projects and Operations	45,191	46,978	Site Support	
			Long-Term Stewardship (formerly EPO)	56,668
Energy Modernization and Investment Program	0	10,262	Sustainment	
			Energy Modernization and Investment Program	3,000
Nuclear Materials Integration	36,990	18,963	Nuclear Materials Integration	17,679
Corporate Project Management	0	13,798	Corporate Project Management	13,017
MSI Partnership Program	0	0	MSI Partnership Program	14,531
Total, Site Stewardship	**82,181**	**90,001**	**Total, Site Stewardship**	**104,895**
Readiness in Technical Base and Facilities			**Site Stewardship**	
Operating				
Operations of Facilities			Enterprise Infrastructure	
Kansas City Plant	155,759	177,158	Kansas City Plant	
			Site Operations	135,834
			Sustainment	35,030
Lawrence Livermore National Laboratory	88,744	97,887	Lawrence Livermore National Laboratory	
			Site Operations	190,287
			Sustainment	10,875
Los Alamos National Laboratory	317,592	345,111	Los Alamos National Laboratory	
			Site Operations	213,707
			Sustainment	85,708
Nevada National Security Site	101,230	123,282	Nevada National Security Site	
			Site Operations	100,929
			Sustainment	24,427
Pantex	164,365	180,584	Pantex	
			Site Operations	81,420
			Sustainment	95,574
Sandia National Laboratories	120,354	176,495	Sandia National Laboratories	
			Site Operations	115,000
			Sustainment	47,000
Savannah River Site	97,480	122,513	Savannah River Site	
			Site Operations	90,236
			Sustainment	35,750
Y-12 National Security Complex	245,280	269,818	Y-12 National Security Complex	
			Site Operations	170,042
			Sustainment	86,400
	0	0	Nuclear security enterprise-wide (funds to be distributed during execution)	
			Site Operations	15,000
			Sustainment	10,000
Subtotal, Operations of Facilities	1,290,804	1,492,848	Subtotal, Site Operations & Sustainment	1,543,219
			Site Support	
Program Readiness	73,962	93,500	Nuclear Criticality Safety Program	22,379
			Nuclear Safety R&D	3,000
Containers	28,892	27,500	Containers	27,514
			Subtotal, Site Support	52,893
			Facilities Disposition	5,000
Total, Operating	1,393,658	1,613,848	Total, Enterprise Infrastructure	1,706,007
Subtotal, Readiness in Technical Base and Facilities	**1,393,658**	**1,613,848**	**Total, Site Stewardship**	**1,706,007**

Explanation of Funding and/or Program Changes

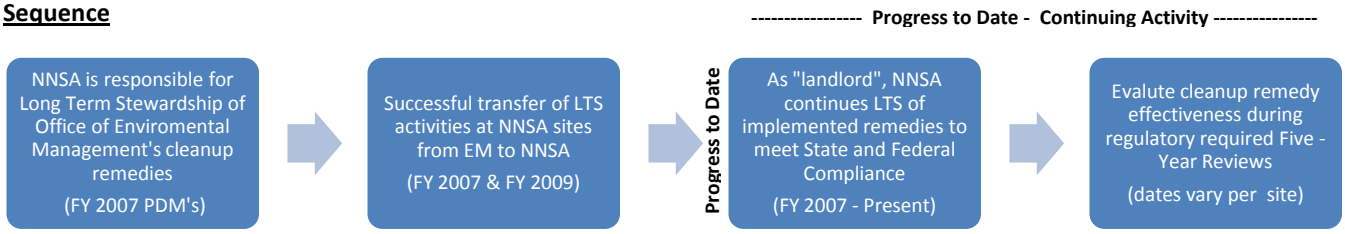
	(Dollars in Thousands)		
	FY 2013 Annualized CR	FY 2014 Request	FY 2014 Request vs. FY 2013 Annualized CR
Site Stewardship			
Environmental Projects and Operations	**46,978**	**0**	**-46,978**
This decrease reflects this activity moving to Enterprise Infrastructure's Site Support subprogram starting in FY 2014.			
Energy Modernization and Investment Program	**10,262**	**0**	**-10,262**
This program has been realigned under the Sustainment Subprogram in FY 2014.			
Nuclear Materials Integration	**18,963**	**17,679**	**-1,284**
This decrease is due to lower funding requirements for the Sodium Bonded Fuels Project at INL in FY 2014. This decrease also includes a reduction for anticipated management efficiency and workforce restructuring reductions for Weapons Activities.			
Corporate Project Management	**13,798**	**13,017**	**-781**
Slight decrease provides for direct funding of common project management resources and assets for the entire nuclear security enterprise. This decrease also includes a reduction for anticipated management efficiency and workforce restructuring reductions for Weapons Activities.			
Minority Serving Institution Partnerships Program	**0**	**14,531**	**+14,531**
Increase reflects the creation of a single line under Site Stewardship in FY 2014 to fund the implementation of NNSA's strategic vision for the Minority Serving Institution Partnerships Program. These increases have been offset by a reduction for anticipated management efficiency and workforce restructuring reductions for Weapons Activities.			
Enterprise Infrastructure			
· Site Operations	**0**	**1,112,455**	**1,112,455**
The increase reflects funding and scope transferred from the RTBF Operations of Facilities Budget. These increases have been offset by a reduction for anticipated management efficiency and workforce restructuring reductions for Weapons Activities.			

	(Dollars in Thousands)		
	FY 2013 Annualized CR	FY 2014 Request	FY 2014 Request vs. FY 2013 Annualized CR
· Site Support	**0**	**109,561**	**+109,561**
The increase reflects funding and scope transferred from the RTBF Budget. This includes Container activities, and a part of Program Readiness, specifically Nuclear Safety Research and Development and Nuclear Criticality Safety Program activities. In addition, an increase is requested for Long-Term Stewardship (formerly EPO) activities, which have been realigned from within the Site Stewardship structure into Site Support to support additional regulatory requirements at multiple sites.			
These increases have been offset by a reduction for anticipated management efficiency and workforce restructuring reductions for Weapons Activities.			
· Sustainment	**0**	**433,764**	**+433,764**
The increase reflects funding and scope transferred from the RTBF Budget. This includes all direct maintenance, recapitalization and RAMP. In addition, Energy Modernization and Investment Program activities have been realigned from within the Site Stewardship structure into Sustainment.			
The requested amount for recapitalization reflects anticipated management efficiencies and workforce restructuring reductions of $86.5M.			
· Facilities Disposition	**0**	**5,000**	**+5,000**
The increase provides funding to reduce risks by preparing high priority production facilities with mercury issues, safety and security concerns, and residual enriched uranium at Y-12.			
Total, Enterprise Infrastructure	**0**	**1,660,780**	**+1,660,780**
Total, Funding Change Site Stewardship	**90,001**	**1,706,007**	**+1,616,006**

Environmental Projects and Operations
Overview

The Environmental Projects and Operations (EPO) subprogram provides for regulatory required Long-Term Stewardship (LTS) activities 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 also ensures effective management and oversight of these activities and ensures integration of a responsible environmental stewardship program with the NNSA's stockpile stewardship and nuclear security efforts. LTS is required to meet environmental compliance associated with the ongoing operations of a site that has a Resource Conservation and Recovery Act (RCRA) Part B Operating Permit and/or is subject to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). LTS requirements are periodically updated to be consistent with regulatory updates and technological advances.

Sequence



Benefits

Maintaining a compliant environmental LTS program protects human health and the environment and avoids state and federally assessed fines and penalties associated with federal, state, and local requirements.

Other Information

Regulatory Agreements - Comprehensive Environmental Response, Compensation, and Liability Act, Federal Facility Agreements for LLNL Livermore Main 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, 2012).

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• 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 (SNL) to maintain compliance with all federal and state regulations. Completed CERCLA Five-Year Reviews of selected cleanup remedies at LLNL Main Site, and the General Services Area Operable Unit (OU) 1 and Building 834 OU 2 at LLNL Site 300. • Completed characterization of slab and contaminated soil at LLNL Building 419, required by the Resource Conservation and Recovery Act for closure. Maintained LTS regulatory requirements by treating contaminated ground water; performing environmental monitoring of surface water, ground water, and soils; operating and maintaining landfill remedies; and working with EPA regions and various states to meet post-completion regulatory cleanup and reporting requirements. • Worked with other Federal agencies, states, and affected stakeholders to execute LTS activities in a cost-effective, compliant, and safe manner consistent with endstates that support the nuclear enterprise mission.	**45,191**

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2013	• Responsible for continued LTS activities at five sites: Kansas City Plant, LLNL Main Site, LLNL Site 300, Pantex Plant, and SNL to maintain compliance with all federal and state regulations. CERCLA Five-Year Reviews of selected cleanup remedies are scheduled for the Pantex Site; and at Operable Unit (OU) 3, the High Explosive Process Area OU 4, and OU 8 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. • Complete characterization of the Zone 11 perched ground water area to support decisions on augmentation of the perched ground water remedial system at Pantex Plant to meet CERLCA requirements. • Meet LTS regulatory requirements by continuing to treat contaminated ground water; performing environmental monitoring of surface water, ground water, and soils; operating and maintaining landfill remedies; and working with EPA regions and various states to meet post-completion regulatory cleanup and reporting requirements. • Work 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.	**46,978**
FY 2014	• Starting in FY 2014, the Environmental Projects and Operations subprogram becomes Long-Term Stewardship and realigned under Site Support.	**0**
FY 2015	• Starting in FY 2014, the Environmental Projects and Operations subprogram becomes Long-Term Stewardship and realigned under Site Support.	**0**
FY 2016		**0**
FY 2017		**0**
FY 2018		**0**

Nuclear Materials Integration
Overview

The Nuclear Materials Integration (NMI) subprogram focuses on the consolidation and disposition of specific NNSA nuclear materials and material sets owned by multiple programs and where a single coordinated disposition program is warranted. In addition, the subprogram includes inactive actinides activities that ensure programmatic materials not in active use are properly characterized and safely packaged, and that unneeded materials have an appropriate disposition path. NMI also maintains and operates the Nuclear Materials Management and Safeguards System (NMMSS) that tracks and accounts for nuclear materials at DOE and the Nuclear Regulatory Commission (NRC) licensed sites.

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

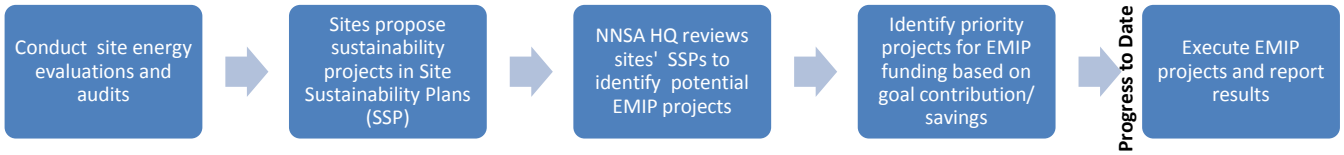
Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• Completed removal (de-inventory) of security category I/II SNM from LLNL. LLNL retained security category III/IV amounts of SNM to support continuing national security missions. • Funded removal of plutonium-bearing mixed-oxide fuel from SNL. • Continued inactive actinides activities to support the treatment, consolidation and disposition of NNSA SNM that is no longer required to support the nuclear security enterprise mission at LANL and Y-12. • Continued 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, continued to support the operation and maintenance of the Nuclear Materials Management and Safeguards System (NMMSS).	**36,990**
FY 2013	• Continue activities to support the removal of plutonium-bearing mixed oxide fuel from SNL. • Continue inactive actinides activities to support the treatment, consolidation and disposition of NNSA SNM that is no longer required to support the nuclear security enterprise mission at LANL and Y-12. • Continue treatment and disposition of NNSA materials currently stored at non-NNSA sites including the Idaho National Laboratory and Oak Ridge National Laboratory. • Continue packaging and removing transuranic (TRU) waste at LLNL for dispositioning at the Waste Isolation Pilot Plant (WIPP). • In partnership with the Nuclear Regulatory Commission, continue to support the operation and maintenance of NMMSS.	**18,963**

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2014	• Continue activities to support the removal of plutonium-bearing mixed oxide fuel from SNL. • Continue inactive actinides activities to support the treatment, consolidation and disposition of NNSA SNM that is no longer required to support the nuclear security enterprise mission at LANL and Y-12. • Continue treatment and disposition of NNSA materials currently stored at non-NNSA sites including the Idaho National Laboratory (sodium bonded debris). • Continue packaging and removing TRU waste at LLNL for dispositioning at the WIPP. • In partnership with the Nuclear Regulatory Commission, continue to support the operation and maintenance of NMMSS.	**17,679**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Continue inactive actinides activities to support the treatment, consolidation and disposition of NNSA SNM that is no longer required to support the nuclear security enterprise mission at LANL and Y-12. • Continue treatment and disposition of NNSA materials currently stored at non-NNSA sites including the Idaho National Laboratory (sodium bonded debris). • Continue packaging and removing TRU waste at LLNL for dispositioning at the WIPP. • In partnership with the Nuclear Regulatory Commission, continue to support the operation and maintenance of NMMSS.	**17, 640** **17,863** **18,276** **18,733**

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

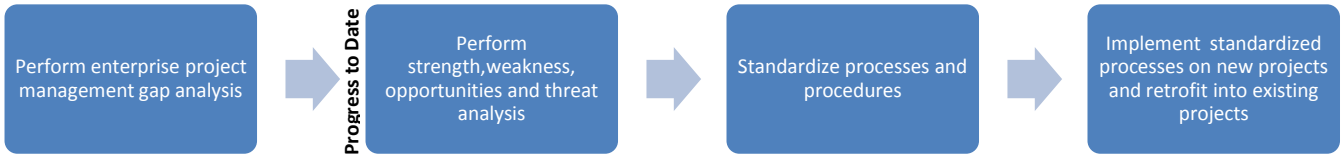
Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• No funds provided in FY 2012 – activities planned in FY 2012 were deferred to future years. .	**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. Funds the installation of advanced utility meters (in accordance with statutory requirements) and cost effective building upgrades for energy and water efficiency to reach green standards (in support of NNSA's plans for 15% of building inventory exceeding 5,000 gsf to meet the Federal Guiding Principles standard by the end of 2015).	**10,262**
FY 2014	• Starting in FY 2014, EMIP activities have been realigned under the Sustainment Subprogram.	**0**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Starting in FY 2014, EMIP activities have been realigned under the Sustainment Subprogram.	**0** **0** **0** **0**

Corporate Project Management
Overview

This program provides centralized funding for corporate project management enterprise activities, specifically: Processes and Procedures Standardization; Cost Data System; Acquisition Planning (CD2-CD4); Portfolio Management, and Data Sharing/Industry Coordination. NNSA project management practices will be enhanced through 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 by standardizing NNSA project management processes. This effort will further capitalize on the ability to increase contractor accountability, contract incentive structure and fixed price contracts. This effort will improve cost and schedule performance and minimize 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 2012	These activities were funded out of Readiness in Technical Base and Facilities. • Five tasks were awarded under the Enterprise Construction Management Services (ECMS) contract in Fiscal Year 2012. • The following four projects have benefited from Subject Matter Expertise provided by the ECMS contract in Fiscal Year 2012: o Electrical Infrastructure Upgrades Project at LSO; o Uranium Processing Facility (UPF)-Site Prep and Site Readiness Projects at Y-12; o High Explosive Science Technology & Engineering Project at Pantex, and o Radioactive Liquid Waste Treatment Facility at LANL.	**0**
FY 2013	• Identification of complex-wide reforms leading to reduction in fixed costs; minimize management and control inefficiencies, and cost improvement initiatives. • Project Management Standardization to include but not limited to: procurement documentation; execution processes and procedures; cost collection; work breakdown structure; standard project reporting requirements; configuration management; project reporting; EVMS, and policies and procedures. • Acquisition Planning; Portfolio Management, and Data Sharing/Industry Coordination.	**13,798**

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2014	• Implementation of complex-wide reforms leading to reduction in fixed costs; minimize management and control inefficiencies, and cost improvement initiatives. • Project Management Standardization to include but not limited to: procurement documentation; execution processes and procedures; cost collection; work breakdown structure; standard project reporting requirements; configuration management; project reporting; EVMS, and policies and procedures. • Acquisition Planning; Portfolio Management; and Data Sharing/Industry Coordination. • Any new start capital projects will be enveloped into this new execution strategy.	**13,017**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Complex-wide reforms; reduction in fixed costs; minimize management and control inefficiencies, and cost improvement initiatives. • Project Management Standardization to include but not limited to: procurement documentation; execution processes and procedures; cost collection; work breakdown structure; standard project reporting requirements; configuration management; project reporting; EVMS, and policies and procedures. • Acquisition Planning; Portfolio Management; and Data Sharing/Industry Coordination. • Any new start capital projects will be enveloped into this new execution strategy.	**12,833** **12,080** **10,137** **8,238**

Site Operations
Overview

Site Operations supports the facilities and the infrastructure needed to provide a nuclear deterrent and sustain base operations of the nuclear security enterprise required for nuclear weapons activities, nuclear counterterrorism, nuclear safety research and development, and DOE's nuclear criticality safety program. Site Operations ensures NNSA-owned capabilities (facilities and workforce) are in a state of readiness (i.e., each capability 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 in the material operations area 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 Site Operations subprogram will continue to provide better insight into the costs required to operate the nuclear security enterprise facilities. The subprogram will organize work based on activities such as facilities management; utilities; environment, safety and health; emergency operations; waste management; development and maintenance of the authorization basis for each facility, and National Environmental Policy Act activities.

Sequence

This is not applicable for this section.

Benefits

Provides a strong facilities and infrastructure foundation to execute national security missions effectively, safely, and efficiently.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
Site Operations		
FY 2012	• This function was transferred from the Readiness in Technical Base and Facilities, Operations of Facilities subprogram.	**0**
FY 2013	• This function was transferred from the Readiness in Technical Base and Facilities, Operations of Facilities subprogram.	**0**

FY 2014	• Funds the base operations at multiple facilities across the nuclear security enterprise. These costs include facility operations; utilities, including steam, gas and electric distribution; leases; safety bases development, implementation and maintenance; program management; waste management; ES&H including radiation, and industrial and high explosives safety.
	• In addition:
	  • At the Kansas City Plant (KCP), funding provides for the remainder of the KCRIMS project and facility operations of two facilities, Botts Road and Bannister Complex.
	  • At the Pantex Plant, funding provides for base operation costs for weapon assembly, disassembly, and surveillance in support of the LEPs; high explosives synthesis, formulation, and machining in support of production, and Special Nuclear Material non-destructive evaluation and requalification.
	  • At Sandia National Laboratories (SNL), funding provides for major infrastructure capabilities including environmental test facilities for various environments such as electromechanical, abnormal and normal; Microelectronics Development Laboratory; Tech Area IV Accelerators; Tech Area V Nuclear Reactor facilities; Electromagnetic Test Facilities; Materials Characterization Laboratories, and Tonopah Test Range (TTR) in Nevada.
		1,112,455

Fiscal Year	Activity	Funding (Dollars in Thousands)
	• At the Savannah River Site (SRS), funding provides for base operations in support of production, reclamation of gas transfer systems for limited life component exchange and LEPs; production, recycling, and recovery of tritium and deuterium gases; and surveillance of Gas Transfer Systems. • At Y-12, funding provides for base operations in support of the Y-12 complex including: enriched and depleted uranium operations; lithium and other special material operations; component production and fabrication; Highly Enriched Uranium (HEU) down-blending activities; and weapon assembly and disassembly in support of LEPs. • At the Los Alamos National Laboratory (LANL), funding provides for base facility operations in support of plutonium production, research and development; chemistry and metallurgy research; weapons engineering, and tritium capability; and beryllium operations. Also funds solid waste risk reduction activities (including ceasing low level and low-level mixed waste (LLW/LLMW) operations at Area G, Phase A site development of transuranic (TRU) waste facility, and continued processing of stored new generation TRU waste at Area G) as the path forward to meet Consent Order milestones as issued by the New Mexico Environmental Department. Funds the Los Alamos Pueblo Project at approximately $800,000 per year. • At the Nevada National Security Site (NNSS), funding provides for base operations in support of LEP research, development and design; Security Category I/II Special Nuclear Material (SNM) handling and staging; Nuclear Counterterrorism research, experimentation, and emergency operations; DOE's Nuclear Criticality Safety Program (NCSP), and legacy environmental cleanup commitments. Also, provides experimentation capabilities including: NCSP's NCERC; large scale underground sub-critical plutonium experiments; high hazard, scientific experiments with special nuclear materials (e.g., dynamic plutonium experiments), and large high explosive charge experiments and testing. • At the Lawrence Livermore National Laboratory (LLNL), funding provides for base operational capability needed to perform plutonium, tritium and high explosives activities; environmental tests; and regulated site-wide comprehensive waste management. Also, supports facility and infrastructure capability for weapon assessment and certification; LEP research, development and design; plutonium research and technology programs; tritium recovery/loading and target manufacturing; and high explosives synthesis, and formulation, processing, assembly and testing. It also includes costs for NIF base operations.	
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Funds the base operations at multiple facilities across the nuclear security enterprise. These costs include facility operations, utilities including steam, gas and electric distribution, leases, safety bases maintenance, program management, waste management, ES&H including radiation safety, industrial and high explosives safety.	**1,113,689** **1,146,311** **1,171,211** **1,190,386**

Site Support
Overview

The Site Support subprogram funds critical cross-cutting programmatic functions such as nuclear safety research and development, nuclear criticality safety program activities, container activities, and Long Term Stewardship (LTS) activities for the nuclear security enterprise.

The Nuclear, Safety Research and Development (NSR&D) activities provide the technical foundation for authorization basis decision making and reaffirmation of authorization bases of defense nuclear facilities and associated operations.

The Nuclear Criticality Safety Program (NCSP) activities provide 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.

Container activities supports 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.

LTS activities are required 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. LTS is required to meet environmental compliance associated with the ongoing operations of a site that has a Resource Conservation and Recovery Act (RCRA) Part B Operating Permit and/or is subject to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

Sequence

This is not applicable for this section.

Benefits

- Execution of container program allows safe, efficient achievement of NNSA mission needs for maintaining technical expertise in the field of Nuclear Criticality Safety, while enabling safe, and efficient operations with the fissionable materials within the DOE. Investment in Nuclear Safety Research and Development fosters development of creative and cost effective solutions for addressing nuclear safety concerns.
- Maintaining a compliant environmental LTS program protects human health and the environment and avoids state and federally assessed fines and penalties associated with federal, state, and local requirements.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
Site Support		
FY 2012	• A portion of these activities were previously under Readiness in Technical Base and Facilities.	**0**
FY 2013	• A portion of these activities were previously under Readiness in Technical Base and Facilities.	**0**
FY 2014	• Funds critical cross-cutting programmatic functions such as nuclear safety research and development, nuclear criticality safety program activities, container activities, and Long Term Stewardship (LTS) activities for the nuclear security enterprise.	**109,561**
FY 2015	• Funds critical cross-cutting programmatic functions such as nuclear safety	**108,466**

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2016 **FY 2017** **FY 2018**	research and development, nuclear criticality safety program activities, container activities, and Long-Term Stewardship (LTS) activities for the nuclear security enterprise.	**108,660** **109,710** **110,770**
Nuclear Criticality Safety Program		
FY 2012	• These activities were previously under Readiness in Technical Base and Facilities, Program Readiness subprogram.	**0**
FY 2013	• These activities were previously under Readiness in Technical Base and Facilities, Program Readiness subprogram.	**0**
FY 2014	• Provides experimentation capabilities including: the DOE Nuclear Criticality Safety Program's Nuclear Criticality Experimental Research Center NCERC; large scale underground sub-critical plutonium experiments; high hazard, scientific experiments with special nuclear materials (e.g., dynamic plutonium experiments), and large high explosive charge experiments and testing.	**22,379**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• 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), and large high explosive charge experiments and testing.	**23,432** **23,885** **24,402** **24,942**
Nuclear Safety Research and Development		
FY 2012	• These activities were previously under Readiness in Technical Base and Facilities, Program Readiness subprogram.	**0**
FY 2013	• These activities were previously under Readiness in Technical Base and Facilities, Program Readiness subprogram.	**0**
FY 2014	• 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.	**3,000**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• 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.	**4,000** **4,077** **4,166** **4,258**
Containers		
FY 2012	• These activities were previously under Readiness in Technical Base and Facilities, Containers subprogram.	**0**
FY 2013	• These activities were previously under Readiness in Technical Base and Facilities, Containers subprogram.	**0**
FY 2014	• 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.	**27,514**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	• 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.	
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• 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. • Continues fabrication of needed containers. • 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.	**28,021** **28,483** **28,952** **29,674**
Long-Term Stewardship (formerly Environmental Projects and Operations)		
FY 2012	• These activities were previously executed under the EPO subprogram.	**0**
FY 2013	• These activities were previously executed under the EPO subprogram.	**0**
FY 2014	• Continued LTS activities at five sites: KCP, LLNL Main Site, LLNL Site 300, Pantex Plant, and SNL to maintain compliance with all federal and state regulations. • KCP funding request of $7,944K for facility investigation fieldwork requirements specified in the Federal Bannister RCRA Permit of volatile organics contaminant source removal in hot spots; and a PCB fate and transport study as well as continuing to treat contaminated ground water; performing monitoring of surface and ground water, and working with the Federal and state agencies and stakeholders in executing the LTS activities in a cost-effective, compliant, and safe manner and meeting the regulatory cleanup and reporting requirements. • LLNL Main Site and Site 300 funding request of $24,894K to continue to treat contaminated ground water; performing monitoring of ground water; operating and maintaining landfill remedies at Site 300, and working with the Federal and state agencies and stakeholders in executing the LTS activities in a cost-effective, compliant, and safe manner and meeting the regulatory cleanup and reporting requirements. • Pantex Plant funding request of $15,475K to continue to treat contaminated ground water including installing an enhanced treatment system at the Zone 11 perched ground water to meet the requirements of CERCLA; performing monitoring of ground water; operating and maintaining landfill remedies, and working with the Federal and state agencies and stakeholders in executing the LTS activities in a cost-effective, compliant, and safe manner and meeting the regulatory cleanup and reporting requirements. • SNL funding request of $8,355K to continue environmental monitoring of surface water, ground water, and soils; operating and maintaining landfill remedies, and working with federal and state regulatory agencies and stakeholders in executing the LTS activities in a cost-effective, compliant, and safe manner and meeting the	**56,668**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	regulatory cleanup and reporting requirements.	
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Responsible for continued LTS activities at five sites: KCP, LLNL Main Site, LLNL Site 300, Pantex Plant, and Sandia National Laboratories to maintain compliance with all federal and state regulations. • Perform CERCLA and RCRA 5-year remedy reviews of selected cleanup remedies at Pantex Plant, LLNL Main Site, LLNL Site 300, and SNL. • Support corrective action required in the KCP Resource Conservation and Recovery Act permit for the Bannister Federal Complex. • Meet LTS regulatory requirements by continuing to treat contaminated ground water; performing environmental monitoring of surface water, ground water, and soils; operating and maintenance of landfill remedies, and working with EPA regions and various states to meet post-completion regulatory cleanup and reporting requirements. • Continue working in concert with other Federal agencies, states, and affected stakeholders to execute LTS activities in a cost-effective, compliant, and safe manner consistent with end states that support the nuclear enterprise mission.	**53,013** **52,215** **52,190** **51,896**

Sustainment
Overview

NNSA continues efforts to provide better insight and granularity into the costs required to operate and maintain its facilities and infrastructure. Until recently, the RTBF program provided for maintenance activities and daily facility operations. The creation of the Sustainment subprogram within Enterprise Infrastructure allows for greater focus on facility maintenance activities. Enhanced priority will be given to facility maintenance and reinvestment activities without sacrificing resources for short term programmatic needs. Maintenance prioritization will be based on mission needs, probability of failure of a system or a component, and risk determinations with regard to safety, security and environmental requirements. The investment strategy will focus on structures, systems, and components considered essential to the national security mission. Thus, the Sustainment subprogram will invest directly in managing risks to existing infrastructure by prioritizing maintenance activities at mission essential facilities; recapitalizing aging and obsolete infrastructure; addressing deferred maintenance, and targeting energy efficiency projects/activities that result in cost savings.

The Sustainment subprogram includes costs for direct maintenance activities, re-capitalization projects, other General Plant Projects/Capital Equipment projects, expense funded projects, the Roof Asset Management Program, and other project costs associated with line item construction under the Enterprise Infrastructure program. This subprogram also includes priority sustainability activities at NNSA that result in energy and cost savings in support of statutory and executive order requirements and ongoing modernization of the enterprise.

Sequence
This is not applicable for this section.

Benefits
Safe, reliable, energy efficient and modern infrastructure enables cost effective and efficient operations for the nuclear security missions.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
Sustainment		
FY 2012	• These activities were previously under Readiness in Technical Base and Facilities.	**0**
FY 2013	• These activities were previously under Readiness in Technical Base and Facilities.	**0**
FY 2014	• Funds the direct maintenance activities, re-capitalization projects, other General Plant Projects/Capital Equipment projects, expense funded projects, Roof Asset Management Program, and other project costs associated with line item construction. Funds also include priority sustainability activities at NNSA that result in energy and cost savings in support of statutory and executive order requirements and ongoing modernization of the enterprise.	**433,764**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Funds the direct maintenance activities, re-capitalization projects, other General Plant Projects/Capital Equipment projects, expense funded projects, Roof Asset Management Program, and other project costs associated with line item construction. Funds also include priority sustainability activities at NNSA that result in energy and cost savings in support of statutory and executive order requirements and ongoing modernization of the enterprise.	**417,403** **419,984** **405,094** **318,464**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Direct Maintenance		
FY 2012	• These activities were previously under Readiness in Technical Base and Facilities.	**0**
FY 2013	• These activities were previously under Readiness in Technical Base and Facilities.	**0**

FY 2014	• Funds the direct maintenance activities at NNSA sites across the nuclear security enterprise. These costs include completing prioritized annual surveillances and preventative maintenance of the vital systems, structures, and components at mission essential facilities. Funding also includes activities associated with corrective maintenance and predictive maintenance. Provides funds for unplanned or unforeseen events as corrective maintenance activity. Provides for upkeep of all vital safety systems in both nuclear and non-nuclear facilities essential for national security missions.
	• In addition:
	  • At KCP, funding provides for real property maintenance, process equipment maintenance, excess facility surveillance and maintenance.
	  • At Pantex, funding provides for Bay and Cell maintenance, emerging requirements, and common site support.
	  • At SNL, funding provides for micro-fabrication facility, Silicon Fabrication, TTR, ACRR and Environmental Test Facilities.
	  • At SRS, funding provides for maintenance activities associated with gas transfer systems.
	  • At Y-12, funding provides for facility risk reduction activities and repairs of identified structural deficiencies in mission essential facilities.
	  • At LANL, funding provides for maintenance funds for DARHT, LANSCE, Beryllium, waste management, radiological laboratory, and tritium facilities.
	  • At NNSS, funding provides for maintenance of JASPER, BEEF, DAF, U1a.
	  • At LLNL, funding provides for maintenance activities at Contained Firing Facility, Superblock maintenance, HEAF facility, HE machine shops, and waste management facilities.
		219,591

FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Funds the direct maintenance activities at NNSA sites across the nuclear security enterprise. These costs include completing prioritized annual surveillances and preventative maintenance of the vital systems, structures, and components at mission essential facilities. This also includes providing funds for activities associated with corrective maintenance and predictive maintenance. Provides funds for unplanned or unforeseen events as a part of corrective maintenance activity. Provides for upkeep of all vital safety systems in both nuclear and non-nuclear facilities essential for national security missions.	**205,000** **205,000** **202,000** **200,000**
Recapitalization		
FY 2012	• These activities were previously under Readiness in Technical Base and Facilities.	**0**
FY 2013	• These activities were previously under Readiness in Technical Base and Facilities.	**0**
FY 2014	• Provides funds for needed investments in obsolete/aging facilities and infrastructure to improve its condition. These costs include upgrades of the Bays and Cells at PX; fire lead-ins and suppression system improvements at NNSS; seismic upgrades at LANL; switchgear and HVAC repairs at various mission essential facilities at Y-12; Silicon Fab and micro fabrication recapitalization; ACRR refurbishment and TTR recapitalization at SNL, and HE machine shop refurbishment at LLNL.	**195,597**
FY 2015 **FY 2016** **FY 2017**	• Provides funds for needed investments in obsolete/aging facilities and infrastructure to improve its condition. These costs include upgrades of the Bays and Cells at PX; fire lead-ins at DAF; seismic upgrades at LANL; switchgear and HVAC repairs at various	**195,903** **198,714** **188,124**

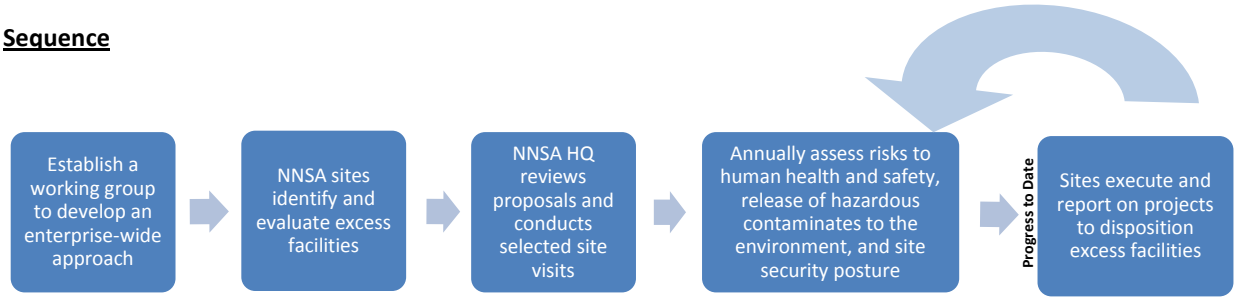
Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2018	mission essential facilities at Y-12; Silicon Fab and micro fabrication recapitalization; ACRR refurbishment and TTR recapitalization at SNL, and HE machine shop refurbishment at LLNL.	**107,294**
Roof Asset Management Program		
FY 2012	• These activities were previously under Readiness in Technical Base and Facilities.	**0**
FY 2013	• These activities were previously under Readiness in Technical Base and Facilities.	**0**
FY 2014	• Provide for priority roof replacement projects executed using the established process for the RAMP.	**8,000**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Provide for priority roof replacement projects executed using the established process for the RAMP.	**8,000** **8,000** **8,000** **5,000**
Energy Modernization and Investment Program		
FY 2012	• These activities were previously under Site Stewardship, Energy Modernization and Investment Program.	**0**
FY 2013	• These activities were previously under Site Stewardship, Energy Modernization and Investment Program.	**0**
FY 2014	• Provides funds for priority sustainability projects at NNSA sites that result in energy and cost savings in support of statutory and executive order requirements and ongoing modernization of the enterprise.	**3,000**
FY 2015 **FY2016** **FY 2017** **FY 2018**	• Provides funds for priority sustainability projects at NNSA sites that result in energy and cost savings in support of statutory and executive order requirements and ongoing modernization of the enterprise.	**4,000** **3,000** **3,000** **4,000**
Other Project Costs		
FY 2012	• These activities were previously under Readiness in Technical Base and Facilities.	**0**
FY 2013	• These activities were previously under Readiness in Technical Base and Facilities.	**0**
FY 2014	• Funds Other Project Costs for the following line item projects: Radioactive Liquid Waste Treatment Facility, project 07-D-220; High Explosive Pressing Facility, project 08-D-802; TA-55 Reinvestment Phase II, project 11-D-801; Nuclear Facility Risk Reduction, project 10-D-506, and TRU Waste Facility, project 12-D-301.	**7,576**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• These activities include Electrical Infrastructure Upgrades at LANL/LLNL project 13-D-301; Emergency Operations Center at Y-12/LLNL/LANL project, 15-D-XXX; and Fire Stations at Y-12, project 16-D-XXX.	**4,500** **5,270** **3,970** **2,170**

Facilities Disposition Program
Overview

The Facilities Disposition Program (FDP) supports a modern and efficient nuclear security enterprise by managing the risk of deteriorated excess facilities to the worker, public, and environment. Process-contaminated facilities with minimal maintenance budgets and no funding for future disposition pose the greatest risk. The FDP manages these risks by characterizing and removing hazardous materials to place the facilities in the lowest risk configuration. Non-process contaminated facilities pose risks to the worker, public, and environment due to structural degradation, industrial contamination, and increased vulnerability to fire. Also, some excess facilities may complicate a site's security response by cluttering lines of fire and offering vantage points to adversaries.

NNSA plans, prioritizes and executes the FDP at the enterprise level because the risks of deteriorated excess facilities are not evenly distributed over NNSA's sites and to ensure risk acceptance is factored into enterprise level funding decisions. Enterprise level coordination is also required with the Office of Environmental Management for the transfer and final disposition of process-contaminated facilities. NNSA has over 9 million gross square feet of facilities proposed as excess to current and future NNSA mission requirements over the next 25 years. Limited site maintenance and indirect funding efforts have not kept pace with the growing "bow wave" of risk as excess facilities deteriorate. NNSA must eliminate or manage these risks to support DOE and NNSA strategic goals to modernize the nuclear security enterprise.

Sequence



Benefits

- Eliminates threats to worker health, the public, and environment by characterizing and removing hazardous materials from process contaminated facilities and by disposing of non-process contaminated facilities.
- Eliminates safety hazards due to structural degradation.
- Improves the security posture of NNSA sites by disposing of abandoned and deteriorated facilities and structures cluttering lines of fire and offering vantage points to adversaries.
- Provides an enterprise-wide strategy to assess risks across the 8 NNSA sites to ensure resources are applied to excess facilities with the highest risks.
- Supports the FY 2002 Congressional requirement to reduce square footage in proportion to new construction.
- Supports DOE and NNSA strategic plan goals to modernize the nuclear security infrastructure.
- Reduces square footage and costs associated with deferred maintenance, ES&H, surveillance and maintenance, security, and operations.
- Supports sustainability goals by eliminating the energy and water usage by excess facilities.
- Reduces DOE's environmental liability and improves NNSA's site asset utilization index, which is a DOE corporate measure of the gross square feet of assets used to meet mission requirements.

Other Information

- House of Representatives, Conference Report 107-258, Making Appropriations for Energy and Water Development for the Fiscal Year Ending September, 30, 2002, provides the square footage reduction requirement.
- Presidential Memorandum, Disposing of Unneeded Federal Real Estate-Increasing Sales Proceeds, Cutting Operating Costs, and Improving Energy Efficiency, June 2010.
- Executive Order 13514, Federal Leadership in Environmental, Energy and Economic Performance, October 2009.

- DOE Order 430.1B, Real Property Asset Management, April 2011.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
Facilities Disposition		
FY 2012	• This activity is a new funding line in FY 2014.	**0**
FY 2013	• This activity is a new funding line in FY 2014.	**0**
FY 2014	• Characterize and eliminate/remove safety hazards and hazardous materials in high priority process-contaminated Y-12 facilities to reduce the risk of long term deferral of disposition and to prepare for potential transfer to the Office of Environmental Management for final demolition, and demolish facilities in the Y-12 production area. The Cold War-era production facilities at Y-12 contribute to mercury issues, present security concerns, contain residual enriched uranium, and are at risk for structural failures.	**5,000**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Continue to characterize and eliminate/remove safety hazards and hazardous materials in high priority process-contaminated Y-12 facilities to reduce the risk of long term deferral of disposition and to prepare for potential transfer to the Office of Environmental Management for final demolition, and demolish facilities in the Y-12 production area. The Cold War-era production facilities at Y-12 contribute to mercury issues, present security concerns, contain residual enriched uranium, and are at risk for structural failures.	**5,000** **5,000** **5,000** **5,000**

Construction
Overview

The Construction subprogram plays a critical role in revitalizing the nuclear security enterprise. 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 projects required to support the nuclear security enterprise, and (2) development and execution of projects within approved cost and schedule baselines. In FY2014, no line item construction projects are planned for execution. The Electrical Infrastructure Upgrades project at LLNL and LANL has been deferred until FY2015. Similarly, the Emergency Operations Center at Y-12, SNL and LLNL is also planned for FY 2015.

Sequence

This is not applicable for this section.

Benefits

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 revitalizes the infrastructure of the nuclear security enterprise.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• These activities were previously under Readiness in Technical Base and Facilities.	**0**
FY 2013	• These activities were previously under Readiness in Technical Base and Facilities.	**0**
FY 2014	• Not applicable.	**0**
FY 2015	• Begin design activities associated with the Electrical Infrastructure Upgrade Project at LLNL. • Begin Emergency Operations Center activities at Y-12, SNL, and LLNL.	**56,000**
FY 2016		**5,000**
FY 2017		**42,148**
FY 2018		**40,000**

Minority Serving Institution Partnerships Program
Overview

The Minority Serving Institutions (MSI) programs align investments in university capacity and workforce development with the NNSA mission to develop the needed skills and talent for NNSA's enduring technical workforce at the laboratories and production plants, and to enhance research and education at under-represented colleges and universities. NNSA MSI programs are designed to increase participation of women and minorities in the nuclear security enterprise and across the nation in science, technology, engineering and math (STEM) disciplines, developing individuals, building core competencies for NNSA, and improving institutional capacity in MSIs.

Consistent with NNSA's Strategic Plan, MSI programs such as the prestigious Massie Chairs of Excellence and symposia for African American, Hispanic and Native American youth support a pipeline of several thousand individuals each year. These include K-12, undergraduate and graduate students, research faculty, and professors, who have been exposed to the mission, and to the science and engineering underpinning the enterprise. Topic areas supported by the NNSA are, in most cases, fields of research that receive little funding by other government (or private) agencies, such as the National Science Foundation (NSF). A successful enterprise requires a highly specialized workforce of well trained scientists and engineers.

NNSA has supported MSI efforts, including Historically Black Colleges and Universities (HBCUs), Hispanic Serving Institutions (HSIs), Tribal Colleges and Universities (TCUs), and various community-based organizations through the Office of the Administrator, Weapons Activities, Defense Nuclear Nonproliferation, and Naval Reactors appropriations. In FY 2012 and FY 2013, a new approach – the Minority Serving Institutions Partnerships Program (MSIPP) – was initiated to build consortia focused on the science supporting DOE and NNSA missions. In FY 2014, a single line for MSIP funding will be established in the Site Stewardship GPRA unit, aligning MSI investments with the NNSA mission and allowing for streamlined program and resource management during execution.

Sequence
This is not applicable for this section.

Benefits
- Strengthens and expands MSI capacity and research experience in DOE mission areas of interest.
- Increases 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.
- Targets 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 provides MSI access to DOE facilities.
- Increases the number of MSI students who graduate with Science, Technology, Engineering, and Math (STEM) degrees relevant to DOE mission areas and have exposure to career opportunities at DOE.
- Increases the number of minority graduates and postdocs hired into DOE's technical and scientific workforce.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• In FY 2012, HBCU activities were funded proportionately across the Weapons Activities, Defense Nuclear Nonproliferation and Naval Reactors appropriations utilizing program dollars. The FY 2012 funded amount for NNSA was $10 million.	**0**
FY 2013	• In FY 2013, HBCU activities were funded proportionately across the Weapons Activities, Defense Nuclear Nonproliferation and Naval Reactors appropriations utilizing program dollars. The FY 2013 requested amount for NNSA was $14.7 million.	**0**

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2014	• Massie Chairs, HBCU, HSI, TCU, and community-based grants, and MSIPP consortium based model focus research and internships on DOE science, engineering, and internships; building educational/institutional infrastructure, and enhancing the pipeline of diverse, high quality talent in STEM academic disciplines and careers.	**14,531**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Massie Chairs, HBCU, HSI, TCU, and community-based grants, and MSIPP consortium based model focus research and internships on DOE science, engineering, and internships; building educational/institutional infrastructure, and enhancing the pipeline of diverse, high quality talent in STEM academic disciplines and careers.	**14,392** **14,299** **14,169** **14,043**

Supporting Information

Capital Operating Expenses [a]

Capital Operating Expenses Summary

(Dollars in Thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Capital Operating Expenses			
General Plant Projects	0	0	25,238
Capital Equipment	0	0	22,489
Total, Capital Operating Expenses	**0**	**0**	**47,727**

Outyear Capital Operating Expenses Summary

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
Capital Operating Expenses					
General Plant Projects	25,238	25,793	26,360	26,939	27,532
Capital Equipment	22,489	22,984	23,490	24,007	24,535
Total, Capital Operating Expenses	**47,727**	**48,777**	**49,850**	**50,946**	**52,067**

[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.

Supporting Information

Construction Projects Summary

Construction Projects

None.

Outyear Construction Projects

(Dollars in Thousands)

	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request	Outyears to Completion
16-D-XXX, Fire Station, Y-12					
TEC	0	5,000	0	15,000	0
OPC	0	1,000	500	500	0
TPC, 16-D-XXX, Fire Station, Y-12	**0**	**6,000**	**500**	**15,500**	**0**
15-D-XXX, Emergency Operations Center, Y-12/LLNL/SNL					
TEC	8,000	0	42,148	25,000	0
OPC	2,000	1,670	1,670	1,670	0
TPC, 15-D-XXX, Emergency Operations Center, Y-12/LLNL/SNL	**10,000**	**1,670**	**43,818**	**26,670**	**0**
13-D-301, Electrical Infrastructure Upgrades, LLNL/LANL					
TEC	48,000	0	0	0	0
OPC	2,500	2,600	2,600	0	0
TPC, 13-D-301, Electrical Infrastructure Upgrades, LLNL/LANL	**50,500**	**2,600**	**2,600**	**0**	**0**
Total All Construction Projects					
Total, TEC	56,000	5,000	42,148	40,000	0
Total, OPC	4,500	5,270	4,770	2,170	0
TPC, All Construction Projects	**60,500**	**10,270**	**46,918**	**42,170**	**0**

Other Supporting Information

Major Items of Equipment (MIEs)

(Dollars in Thousands)

	Total	Prior Years	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Calciner, Y-12					
TEC	10,000	0	0	5,000	5,000
OPC	1,500	0	0	1,000	500
TPC, Calciner, Y-12	**11,500**	**0**	**0**	**6,000**	**5,500**
Production Molecular Beam Epitaxy System, SNL					
TEC	5,500	0	0	0	5,500
OPC	1,000	0	0	0	1,000
TPC, Production Molecular Beam Epitaxy System, SNL	**6,500**	**0**	**0**	**0**	**6,500**
Electrical Systems (Auto Transfer Switches), Device Assembly Facility, NNSS					
TEC	2,600	0	550	2,050	0
OPC	200	0	50	150	0
TPC, Electrical Systems (Auto Transfer Switches), Device Assembly Facility, NNSS	**2,800**	**0**	**600**	**2,200**	**0**
Total All MIEs					
Total, TEC	18,100	0	550	7,050	10,500
Total, OPC	2,700	0	50	1,150	1,500
TPC, All MIEs	**20,800**	**0**	**600**	**8,200**	**12,000**

Outyear Major Items of Equipment (MIEs)

None.

Defense Nuclear Security
Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Defense Nuclear Security [a] [b]			
Operations and Maintenance (Homeland Security)			
Protective Forces	415,158	341,676	398,931
Physical Security Systems	82,783	98,267	85,934
Information Security	30,117	34,237	37,536
Personnel Security	37,285	37,781	34,810
Materials Control and Accountability	34,592	34,484	29,962
Security Program Operations and Planning (formerly Program Management)	75,595	96,840	77,808
Technology Deployment, Physical Security	4,797	0	0
Total, Operations and Maintenance (Homeland Security)	**680,327**	**643,285**	**664,981**
Construction (Homeland Security)	11,752	31,219	14,000
Total, Defense Nuclear Security	**692,079**	**674,504**	**678,981**

Out-Year Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
Defense Nuclear Security [a] [b]					
Operations and Maintenance (Homeland Security)					
Protective Forces	398,931	383,388	389,094	395,593	402,814
Physical Security Systems	85,934	79,019	80,195	81,533	83,022
Information Security	37,536	36,023	36,559	37,221	37,903
Personnel Security	34,810	33,453	33,951	34,518	35,148
Materials Control and Accountability	29,962	28,795	29,225	29,712	30,254
Security Program Operations and Planning (formerly Program Management)	77,808	82,993	83,747	88,723	93,054
Technology Deployment, Physical Security	0	0	0	0	0
Total, Operations and Maintenance (Homeland Security)	**664,981**	**643,671**	**652,771**	**667,300**	**682,195**
Construction (Homeland Security)	14,000	0	0	0	0
Total, Defense Nuclear Security	**678,981**	**643,671**	**652,771**	**667,300**	**682,195**

[a] This represents the proposed control level.

[b] The Defense Nuclear Security program was previously funded under the Safeguards and Security header.

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
National Defense Authorization Act for FY 2013 (P.L. 112-239)
The Continuing Appropriations Resolution, 2013 (P.L. 112-175)

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 the NNSA and DOE strategic objective "Secure Our Nation" and "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 FY 2012, NNSA suffered a serious security breach at Y-12. Corrective measures are underway or have been taken to prevent future incidents. These measures include immediate actions at Y-12, such as increased patrols, replacement of Perimeter Intrusion Detection and Assessment (PIDAS) cameras, increased performance testing, and installation of new razor wire. In addition, the primary mission of Defense Nuclear Security has become a series of performance-based assessments of security across the enterprise, and revisions to security policy informed by these assessments.

In other activities, Defense Nuclear Security accomplished major efficiencies in managing our protective forces costs across the enterprise; continued to manage risk while identifying cost efficiencies; 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.

Program Planning and Management

While the Defense Nuclear Security budget reflects an overall increase from FY 2013 to FY 2014, the increases and decreases within specific categories have been made to meet the challenges of a revised protection strategy for the nuclear security enterprise. Defense Nuclear Security is undergoing reorganization, in part due to the security breach at Y-12, and many of its functions are now being coordinated through the Office of Infrastructure and Operations (NA-00). The Defense Nuclear Security mission will focus on policy development, strategic planning, and performance assessments of field-led activities. NA-00 will assume control over operational security across the nuclear security enterprise, to include execution of the security budget in full partnership with the Associate Administrator for Defense Nuclear Security.

To ensure a consistent standard for security operations, the DOE Orders will be the baseline for NNSA security requirements, and a performance-based assessment process will be instituted.

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 as a result of collaboration with DoD, to synchronize DoD, DOE and NNSA security programs;
- New contract models for Management and Operating (M&O) contracts designed to streamline functions and reduce costs over the long term;
- NNSA mission changes and facility modernization activities, and
- Aging Infrastructure and lifecycle upgrades.

Major Outyear Priorities and Assumptions

Outyear funding levels for the DNS total $2,645,937, 000 for FY 2015 through FY 2018. In the outyears, maintain an effective security program founded on performance-based assessments, investments in infrastructure and lifecycle upgrades, and collaboration with the Department of Defense, in support of nuclear security enterprise goals.

Program Goals and Funding

Defense Nuclear Security will begin performance based assessments in FY 2013 to broaden and support an effective security program that includes investments in infrastructure and lifecycle upgrades, and collaboration with the Department of Defense in support of nuclear security enterprise goals. These assessments will look at each site, the vulnerabilities at the site, and the ways to mitigate those risks – this process will establish the goals and funding level for the future.

Full Cost Recovery Estimates

(Dollars in Thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Site			
Kansas City Plant	201	210	212
Lawrence Livermore National Laboratory	4,260	9,200	9,300
Los Alamos National Laboratory	3,100	3,400	3,500
Nevada National Security Site	1,987	2,000	2,050
Pantex Plant	0	0	0
Sandia National Laboratories	16,000	16,400	16,500
Y-12 National Security Complex	0	0	0
Total	**25,548**	**31,210**	**31,562**

This FY 2014 request 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.

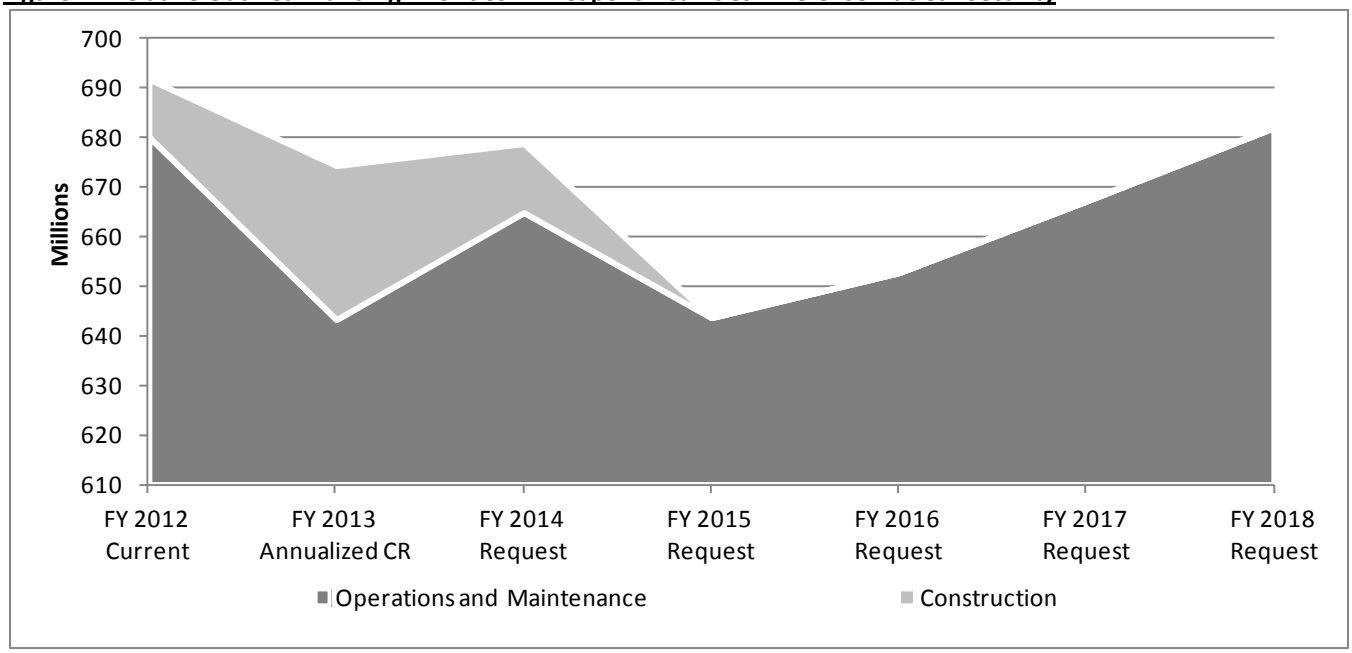
Performance Measures

Performance Goal (Measure)	**Assurance of Effective Performance** - Cumulative percentage of completed assessments by executing the Defense Nuclear Security Integrated Assessment Planning Schedule and completing 100% of planned assessments annually.		
Fiscal Year	**2012**	**2013**	**2014**
Target	100% of planned assessments completed annually	100% of planned assessments completed annually	100% of planned assessments completed annually
Result	**Met** - 100		
Endpoint Target	Annually complete 100% of planned assessments to demonstrate that Defense Nuclear Security has up-to-date operational awareness of safeguards and security activities throughout the nuclear security enterprise.		

Performance Goal (Measure)	**Graded Security Protection (GSP) (formerly Design Basis Threat)** - Cumulative percentage of progress, measured in milestones completed towards implementation of all Design Basis Threat (DBT) policy at NNSA sites		
Fiscal Year	**2012**	**2013**	**2014**
Target	100% of overall GSP milestones completed	N/A	N/A
Result	**Met** - 100		
Endpoint Target	Completed 100% of implementation plans developed at NNSA sites in FY 2009. Completed 50% of overall GSP milestones in FY 2010, and completed the remaining 50% GSP milestones in FY 2012.		

Performance Goal (Measure)	**NNSA Security Policy Reform** - Annual reduction in security requirements as part of the Defense Nuclear Security reform effort by reviewing DOE policies and issuance of NNSA policies. Reduce 20% of security requirements over the next four years.		
Fiscal Year	**2012**	**2013**	**2014**
Target	5% of security requirements reduced	N/A	N/A
Result	**Exceeded** - 17		
Endpoint Target	In four years, reduce by 20% the defense nuclear security requirements throughout the nuclear security enterprise, as part of the reform effort. The end-point target was accomplished in two years with a result of 22%.		

Figure 1: Relative Out-Year Funding Priorities in Weapons Activities – Defense Nuclear Security



Explanation of Funding and/or Program Changes

	(Dollars in Thousands)		
	FY 2013 Annualized CR	FY 2014 Request	FY 2014 Request vs. FY 2013 Annualized CR
Defense Nuclear Security			
Operations and Maintenance (Homeland Security)			
· **Protective Forces**	**341,676**	**398,931**	**+57,255**
This increase is primarily due to shifting protective force services at Y-12 away from a separate prime contract to the Federal Field Office, under the M&O contractor, with significantly higher labor rates due to overheads to provide these services. This increase has been offset by a reduction for anticipated management efficiency and workforce restructuring reductions for Weapons Activities.			
· **Physical Security Systems**	**98,267**	**85,934**	**-12,333**
This decrease in funding continues to allow for funding fewer selected 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. The selected projects will be executed as a series of capital equipment or General Plant Projects (each under $500K), 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 category also includes funds previously submitted under the category of "Technology Deployment, Physical Security," as the functional work scope is more accurately characterized and managed under the category Physical Security Systems. This decrease also includes a reduction for anticipated management efficiency and workforce restructuring reductions for Weapons Activities.			
· **Information Security**	**34,237**	**37,536**	**+3,299**
This increase reflects planned lifecycle replacement and upgrades to technical surveillance countermeasures equipment at multiple sites. These increases have been offset by a reduction for anticipated management efficiency and workforce restructuring reductions for Weapons Activities.			

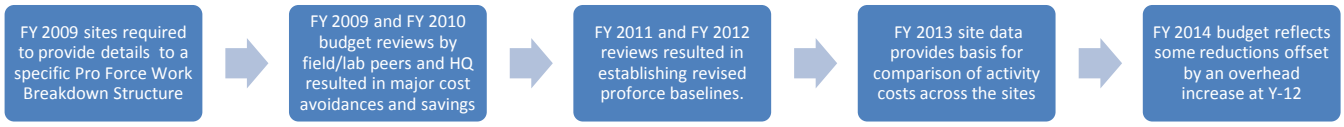
	(Dollars in Thousands)		
	FY 2013 Annualized CR	FY 2014 Request	FY 2014 Request vs. FY 2013 Annualized CR
· **Personnel Security**	**37,781**	**34,810**	**-2,971**
This decrease reflects efficiencies identified by several sites (Kansas City, Los Alamos National Laboratory, Sandia National Laboratories and Y-12) to use fewer Personnel Security resources. It also represents savings from the streamlined security clearance processing. This decrease also includes a reduction for anticipated management efficiency and workforce restructuring reductions for Weapons Activities.			
· **Materials Control and Accountability**	**34,484**	**29,962**	**-4,522**
The decrease is due to the finalization of deinventory at Lawrence Livermore National Laboratory, allowing 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. This decrease also includes a reduction for anticipated management efficiency and workforce restructuring reductions for Weapons Activities.			
· **Security Program Operations & Planning**	**96,840**	**77,808**	**-19,032**
The decrease allows for centrally funding enterprise-wide initiatives and projects such as standardized readiness and response training. This decrease also includes a reduction for anticipated management efficiency and workforce restructuring reductions for Weapons Activities.			
Construction	**31,219**	**14,000**	**-17,219**
NNSA used authority provided for in the FY 2013 Continuing Resolution to make funding available for project 08-D-701, Nuclear Materials Safeguards and Security Upgrades at Los Alamos National Laboratory. A reprogramming request will seek the authority to use prior year balances from unearned fee which are subject to notification requirements and provides for more transparency of this project.			
Construction is projected to be completed in the first quarter of FY 2014. The FY 2014 request is for project 14-D-710, the Device Assembly Facility (DAF) Argus project at Nevada National Security Site. This decrease also includes a reduction for anticipated management efficiency and workforce restructuring reductions for Weapons Activities.			
Total Funding Change, Defense Nuclear Security	**674,504**	**678,981**	**+4,477**

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 implementation and sustainment 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.

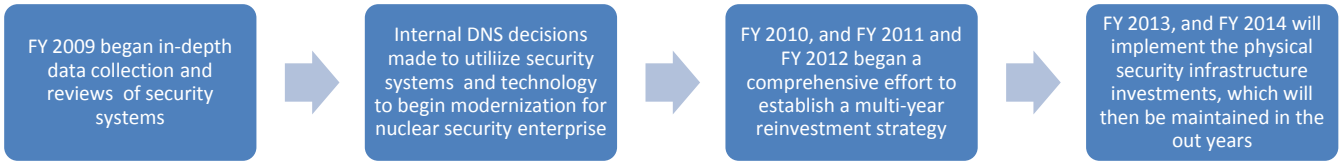
Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 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.	**415,158**
FY 2013	• Overall 5% reduction in protection resources at Category I sites following Zero Based Security Reviews. • 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**
FY 2014	• Escalations in labor rates negotiated and codified in Collective Bargaining Agreements between site security contractors and guard unions requires modest increases to the protective forces budgets. • Includes retention of Protective Forces at Y-12. • Reflects the sustained increase in overhead as a result of moving the Y-12 Protective Forces contract under the Y-12 Management and Operating contract.	**398,931**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Sites maintain sufficient protective forces required to meet Departmental protection standards and site protection.	**383,388** **389,094** **395,593** **402,814**

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 assets are protected by effective intrusion detection and assessment systems, access control systems, barriers and delay mechanisms, tactical systems, etc. Provides for the required performance testing and certification/recertification activities associated with these systems. Improves the security posture of NNSA by deploying promising and emerging technologies at NNSA sites.
- Ensures that installation of state-of-the-art technologies 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 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 nuclear 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 nuclear security mission.	**98,267**
FY 2014	• 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. • Funds work scope associated with the cancellation of NNSA Policy Letter (NAP) 70.2, Physical Security and the invocation of DOE Order 473.3, Protection Program Operations.	**85,934**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• 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.	**79,019** **80,195** **81,533** **83,022**

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 and 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.

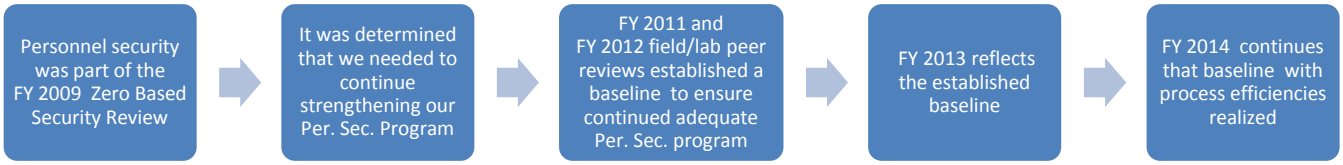
Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• Sustained 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. Provided for development and implementation of an enterprise-wide TSCM program.	**30,117**
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	• Provides for maintaining a robust information protection program and planned infrastructure and lifecycle upgrades to the technical surveillance countermeasures equipment across all sites. • Funds additional activities associated with the cancellation of NNSA Policy Letter (NAP) 70.4, Information Security and invocation of DOE Order 471.1B identification and Protection of Unclassified Controlled Nuclear Information.	**37,536**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Maintains an effective information protection program.	**36,023** **36,559** **37,221** **37,903**

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 deterrent to persons seeking access to critical nuclear security enterprise facilities without legitimate reasons. 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 without 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 2012	• Continued 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 an effective personnel security program.	**37,781**
FY 2014	• Maintains an effective personnel security program while realizing efficiencies in staffing resources at the sites, and in streamlined clearance processing.	**34,810**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Maintains an effective personnel security program.	**33,453** **33,951** **34,518** **35,148**

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 *r*elated to MC&A requirements.

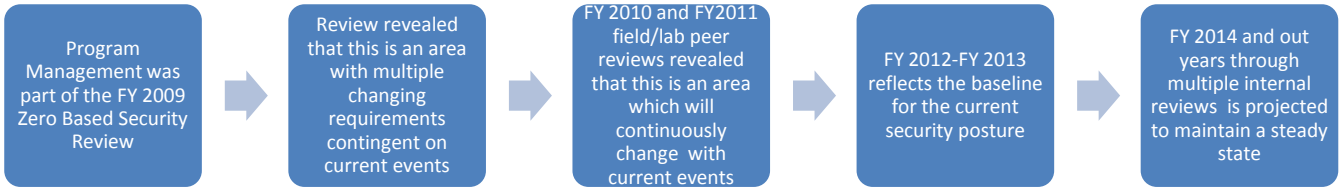
Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• Continued support for tracking movements of accountable nuclear materials between sites and reporting those movements to a national level tracking system. • Continued 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 LANMAS 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. Maintains a level of effort that will sustain a critical part of NNSA's layered protection program.	**34,484**
FY 2014	• Since the half-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.	**29,962**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Provides for control and accountability of special and alternate nuclear materials. Maintains a level of effort that will sustain a critical part of NNSA's layered protection program.	**28,795** **29,225** **29,712** **30,254**

Security Program Operations and Planning (Homeland Security)
Overview

Security Program Operations and Planning provides direction, oversight and administration, planning, training, and development for security programs in these areas: Security Program Planning, Annual Operating Plans (AOPs), Site Security Plans and Site Safeguards and Security Plans, Vulnerability Analysis, Performance Testing and Assurance activities, Security Incident and Reporting Management, Surveys and Self-Assessments, activities related to deviation requests, Control of Security Technology Transfer Activities, and Facility Clearance and Foreign Ownership, Control or Influence (FOCI) activities.

Sequence



Benefits

- Serves as a pivotal point to a cost effective and efficient nuclear security enterprise. Security Program Operations and Planning 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 2012	• Continued 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 during site reviews and assessments. • 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 collaboration (harmonization) initiative.	**96,840**
FY 2014	• Maintains an effective Program Operations and Planning capability and centrally-managed funding for emerging enterprise-wide security infrastructure upgrades, projects and procurements. • Supports implementation of inter-Departmental risk-based security projects and reviews as part of the collaboration (harmonization) initiative.	**77,808**

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2015	• Maintains an effective Program Operations and Planning capability and centrally-managed funding for emerging enterprise-wide security infrastructure upgrades, projects and procurements.	**82,993**
FY 2016		**83,747**
FY 2017		**88,723**
FY 2018		**93,054**

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, but closely monitor all non-recurring projects and procurements over $50,000 separately from the sites' baseline operating budgets.

Sequence
This is not applicable for this section.

Benefits
This is not applicable for this section.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• Ensured focus on promising, emerging technologies that will provide operational efficiencies for the NNSA security program.	**4,797**
FY 2013	• All activities are funded out of the Physical Security Systems subprogram in FY 2013 and beyond.	**0**
FY 2014	• All activities are funded out of the Physical Security Systems subprogram in FY 2013 and beyond.	**0**
FY 2015	• All activities are funded out of the Physical Security Systems subprogram in FY 2013 and beyond.	**0**
FY 2016		**0**
FY 2017		**0**
FY 2018		**0**

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 Los Alamos National Laboratory's (LANL) primary special nuclear materials facility.

Continues the DAF/Argus line-item project to provide state-of-the-art perimeter intrusion detection and assessment system at the Nevada National Security Site's Device Assembly Facility.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• Construction continued for all in-process subprojects.	**11,752**
FY 2013	• 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 completed. Reprogramming of $30M for NMSSUP to complete project in FY 2014.	**31,219**
FY 2014	• DAF/Argus line-item project to complete security systems integration; projected for completion in FY 2015.	**14,000**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Neither project 08-D-701, NMSSUP or project 14-D-710, DAF/Argus will require additional funding in the outyears.	**0** **0** **0** **0**

Supporting Information

Capital Operating Expenses [a]

Capital Operating Expenses Summary

(Dollars in Thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Capital Operating Expenses			
General Plant Projects	24,765	25,310	25,867
Capital Equipment	144	147	150
Total, Capital Operating Expenses	**24,909**	**25,457**	**26,017**

Outyear Capital Operating Expenses Summary

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
Capital Operating Expenses					
General Plant Projects	25,867	26,436	27,018	27,612	28,219
Capital Equipment	150	153	156	159	162
Total, Capital Operating Expenses	**26,017**	**26,589**	**27,174**	**27,771**	**28,381**

[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.

Construction Projects Summary

Construction Projects

(Dollars in Thousands)

	Total	Prior Years	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
08-D-701, NMSSUP II, LANL					
TEC	221,052	179,559	11,752	29,641	0
OPC	23,148	17,612	3,958	1,578	0
TPC, 08-D-701, NMSSUP II, LANL	**244,200**	**197,171**	**15,710**	**31,219**	**0**
14-D-710, DAF Argus, NNSS					
TEC	0	0	0	0	14,000
OPC	0	0	0	0	0
TPC, 14-D-710, DAF Argus, NNSS	**0**	**0**	**0**	**0**	**14,000**
Total All Construction Projects					
Total, TEC	221,052	179,559	11,752	29,641	14,000
Total, OPC	23,148	17,612	3,958	1,578	0
TPC, All Construction Projects	**244,200**	**197,171**	**15,710**	**31,219**	**14,000**

Outyear Construction Projects

None.

14-D-710, Device Assembly Facility (DAF) Argus Installation Project
Nevada National Security Site (NNSS), Las Vegas, NV
Project Data Sheet (PDS) is for Design/Construction

1. Significant Changes

The Argus Project (Argus) originated as a General Plant Project (GPP) in FY 2010, with planning commencing in FY 2011. In November 2012, during design and after the majority of equipment procurement, it was determined that the project would exceed the GPP limit. This resulted from several factors including a prime contract change with the NNSS security services contractor, WSI-Nevada, as they became precluded from performing Davis-Bacon (DB) covered work. This work was appropriately reassigned for performance by the site's Management and Operations contractor, National Security Technologies, (NSTec). The difference in the cost structure between the two companies resulted in some of the cost increases. Other changes in the technical approach, and a more thorough development of risk management considerations for a major security system's design, construction, and operations cut-over within the DAF, a Security Category I, Hazard Class 2 Nuclear Facility, also contributed to increases in the projected cost at completion.

More recently, a decision was made to convert this GPP, and complete it as a Line Item (LI) project. This action addressed the projected cost considerations noted above and also supported an execution strategy believed to be more responsive to complex-wide lessons learned in implementing complex security projects. The Argus project will complete all requirements to convert to LI execution and is scheduled to receive Critical Decision (CD)-2/CD-3 approval in September 2013. The Performance Baseline is projected at a Total Estimated Cost (TEC) of $20.323M and a Total Project Cost (TPC) of $24.310M (including prior year funding under the GPP). CD-4, the start of full operational capability is anticipated in 2Q FY 2017.

Argus completed most of the system design within the GPP execution period, but design was suspended when its estimate to complete was projected to exceed the $600,000 limitation established by 50 United States Code (USC) 2746. The Argus GPP also completed a significant level of conceptual planning followed by preliminary planning for startup testing, acceptance, cyber security, and system cut-over, as well as, a commensurate amount of project management. Accordingly, a Project Data Sheet (PDS) would not have been applicable for prior years funding which covered those incurred costs. In this new PDS, the GPP expenditures discussed above are included as "prior years design". This PDS includes the remaining design, shown in FY 2014, and all physical construction, startup, acceptance, and cut-over activities.

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 new.

2. Design, Construction, and D&D Schedule[a]

(fiscal quarter or date)

	CD-0	CD-1	Design Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
Prior Years	NA	NA	NA	NA	NA	NA	NA	NA
FY 2010	NA	NA	NA	NA	NA	NA	NA	NA
FY 2011	NA	NA	NA	NA	NA	NA	NA	NA
FY 2012	NA	NA	NA	NA	NA	NA	NA	NA
FY 2013	NA	NA	NA	NA	NA	NA	NA	NA

[a] The schedules and estimates are projections pending completion and approval of the Performance Baseline (PB). Project was initiated as a General Plant Project that was not subject to the formal DOE Order 413.3B process. Nevada Site Office held decision meetings to start project after authorization from NNSA HQ.

FY 2014	NA	NA	NA	4QFY2013	4QFY2013	2QFY2017	NA	NA

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

3. Baseline and Validation Status[a]

(fiscal quarter or date)

	TEC, Design	TEC, Construction	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
FY 2014[b]	2,500	17,823	20,323	3,987	NA	3,987	24,310

4. Project Description, Justification, and Scope

The Argus security system will replace the aging Process Equipment and Control System (PECOS) in the DAF at the NNSS. Argus is the recommended NNSA enterprise security system and integrates access control, intrusion detection, and video assessment of alarms to protect and control high-consequence assets. Completion of this project provides the required security to protect special nuclear material (SNM) using capabilities of the HSPD-12 badge credentials.

The Argus project works in conjunction with, and relies upon both, the Entry Guard Station Expansion and Legacy projects. It is dependent upon those projects being largely completed before its physical construction and system startup can occur. Argus is necessary to support the DAF complex which is a critical facility within the Nuclear Security Enterprise (NSE) designed for the staging of special nuclear material and nuclear explosive operations.

Operations conducted for the program missions include assembling, disassembling, modifying, staging, handling, transporting, and non-explosive testing of nuclear explosives and components, subcritical test assemblies, and other special operations involving high explosives (HE) and/or radioactive materials.

The DAF Argus project primarily consists of the following items:

- Install and use Argus security system equipment and software as developed by the Lawrence Livermore National Laboratory (LLNL).
- Replace the existing multiplexers, badge readers, and key pads with Argus Field Panels and Remote Access Panels with integral fingerprint readers to control access/egress to DAF.
- Use the existing alarm sensors.
- Connect existing Perimeter Intrusion Detection and Detection System (PIDAS) sensors to new Argus Field Panel-II (replacing existing PIDAS multiplexer panels) and to the new host computers in the Central Alarm Station (CAS) and Secondary Alarm Station (SAS).

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

[a] The estimates are projections pending completion and approval of the Performance Measurement Baseline (PMB).
[b] No further physical construction activities will be performed until the project performance baseline has been validated and CD-2/3 has been approved.

5. Financial Schedule[a]

(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2010	300	300	0
FY 2011	1,200	1,200	600
FY 2012	500	500	900
FY 2013	0	0	0
FY 2014	500	500	1,000
Total, Design	2,500	2,500	2,500
Construction			
FY 2010	681	681	0
FY 2011	1,938	1,938	700
FY 2012	238	238	900
FY 2013	1,466	1,466	2,200
FY 2014	13,500	10,000	5,000
FY 2015	0	3,500	7,000
FY 2016	0	0	2,023
Total, Construction	17,823	17,823	17,823
TEC			
FY 2010	981	981	0
FY 2011	3,138	3,138	1,300
FY 2012	738	738	1,800
FY 2013	1,466	1,466	2,200
FY 2014	14,000	10,500	6,000
FY 2015	0	3,500	7,000
FY 2016	0	0	2,023
Total, TEC	20,323	20,323	20,323
Other Project Cost (OPC)			
OPC except D&D			
FY 2010	1,300	1,300	775
FY 2011	1,360	1,360	215
FY 2012	0	0	977
FY 2013	0	0	500
FY 2014	0	0	193
FY 2015	327	327	327
FY 2016	500	500	500
FY 2017	500	500	500
Total, OPC except D&D	3,987	3,987	3,987
D&D			

[a] The schedules and estimates are projections pending completion and approval of the Performance Baseline (PB).

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Total, D&D	0	0	0
Total OPC	3,987	3,987	3,987
Total Project Cost (TPC)			
FY 2010	2,281	2,281	775
FY 2011	4,498	4,498	1,515
FY 2012	738	738	2,777
FY 2013	1,466	1,466	2,700
FY 2014	14,000	10,500	6,193
FY 2015	327	3,827	7,327
FY 2016	500	500	2,523
FY 2017	500	500	500
Total, TPC	24,310	24,310	24,310

6. Details of Cost Estimate[a]

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	2,250	NA	NA
Contingency	250	NA	NA
Total, Design	2,500	NA	NA
Construction			
Site Preparation	0	NA	NA
Equipment	1,500	NA	NA
Other Construction	13,823	NA	NA
Contingency	2,500	NA	NA
Total, Construction	17,823	NA	NA
Total, TEC	20,323	NA	NA
Contingency, TEC	2,750	NA	NA
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	1,300	NA	NA
Conceptual Design	600	NA	NA
Start-up	1,587	NA	NA
Contingency	500	NA	NA
Total, OPC except D&D	3,987	NA	NA
D&D			
D&D	0	NA	NA
Contingency			
Total, D&D	0	NA	NA
Total, OPC	3,987	NA	NA
Contingency, OPC	500	NA	NA
		NA	NA
Total, TPC	24,310	NA	NA
Total, Contingency	3,250	NA	NA

[a] The schedules and estimates are projections pending completion and approval of the Performance Baseline (PB). When the PMB is approved, it will become the Original Validated Baseline.

7. Schedule of Appropriation Requests

(dollars in thousands)

		Prior Years	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	Outyears	Total
FY 2014	TEC	6,323	14,000	0	0	0	0	0	0	20,323
	OPC	2,660	0	327	500	500	0	0	0	3,987
	TPC	8,983	14,000	327	500	500	0	0	0	24,310

8. Related Operations and Maintenance Funding Requirements

Start of Operation of Beneficial Occupancy (fiscal quarter or date)	2Q FY 2017
Expected Useful Life (number of years)	30
Expected Future Start of D&D of this capital asset (fiscal quarter)	2Q FY 2046

(Related Funding Requirements)

(dollars in thousands)

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

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

10. Acquisition Approach

Project was originated and executed as a GPP through FY 2013. It is being converted and will be completed as a LI project beginning in FY 2014. It will be executed by an integrated contractor team of LLNL (system design contractor), WSI-Nevada (system design and end-user/security contractor) and NSTec (installation and site/facility managing and operating contractor).

Cyber Security
Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Cyber Security (Homeland Security) [a]			
Infrastructure Program	111,750	123,022	0
Enterprise Secure Computing	13,885	14,000	0
Technology Application Development [b]	5,735	0	0
Total, Cyber Security	**131,370**	**137,022**	**0**

Out-Year Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
Cyber Security (Homeland Security) [a]					
Infrastructure Program	0	0	0	0	0
Enterprise Secure Computing	0	0	0	0	0
Technology Application Development	0	0	0	0	0
Total, Cyber Security	**0**	**0**	**0**	**0**	**0**

[a] This represents the proposed control level. The Defense Nuclear Security and Cyber Security programs were previously funded under the Safeguards and Security header.

[b] In FY 2013 funds within Technology Application Development have been realigned to the Cyber Security Infrastructure program to fulfill high priority requirements.

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
National Defense Authorization Act for FY 2013 (P.L. 112-239)
The Continuing Appropriations Resolution, 2013 (P.L. 112-175)

Overview

In FY 2014, the existing Cyber Security Government Performance Results Act (GPRA) unit will be deleted, as it was in the FY 2013 Annualized CR level, and activities managed by the NNSA Office of the Chief Information Officer (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 FY 2012, the NNSA OCIO achieved the following three significant accomplishments or milestones in program management and program development: 1) a focused, mission-based risk management approach;
2) development and implementation of the Cyber Security Strategic Plan, and 3) development and implementation of the Cyber Security Architecture.

Program Planning and Management

The existing Cyber Security Government Performance Results Act (GPRA) unit will be deleted and activities managed by the NNSA OCIO to be consolidated under the new single GPRA Unit titled NNSA CIO Activities.

Strategic Management

A consolidation of the Cyber security and the IT programs will be more effective. Cyber Initiatives are supported by IT Investments; this change will provide better alignment of resources to focus on the emerging threat. The NNSA CIO 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.

Major Outyear Priorities and Assumptions

In FY 2014, Cyber Security will be deleted and activities managed by the NNSA OCIO to be consolidated under the new single GPRA Unit titled NNSA CIO Activities.

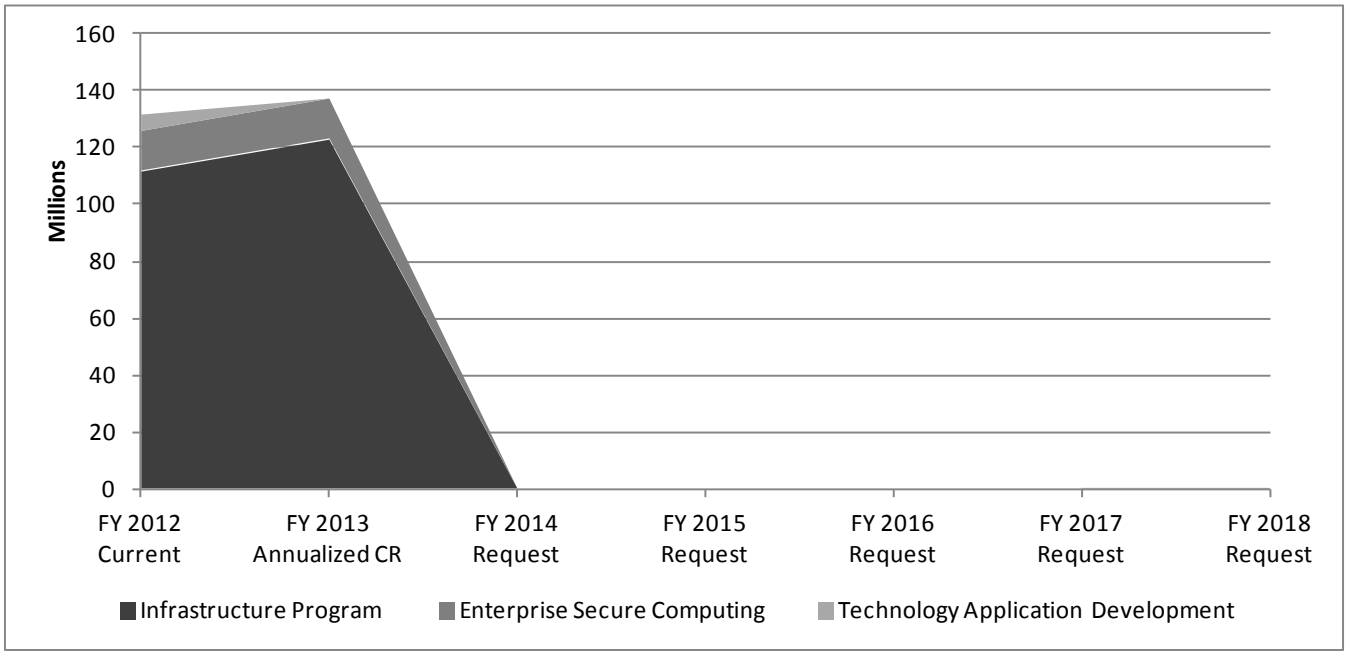
Program Goals and Funding

The existing Cyber Security GPRA unit will be deleted and activities managed by the NNSA OCIO to be consolidated under the new single GPRA Unit titled NNSA CIO Activities.

Performance Measures

Performance Goal (Measure)	**Cyber Security Assessment Reviews** - Annual Percentage of Cyber Security Site Assessment Reviews conducted by the Office of Health, Safety, and Security (HSS) and Office of the Chief Information Officer (OCIO) that resulted in the rating of "effective."		
Fiscal Year	**2012**	**2013**	**2014**
Target	100% of reviews resulting in "effective" rating	100% of reviews resulting in "effective" rating	N/A
Result	**Not Met** - 67		
Endpoint Target	Annually, achieve an effective rating of at least 100% of OCIO SAV Cyber Security reviews. Note: The program name changes from Cyber Security to NNSA CIO Activities in FY 2014.		

Figure 1: Relative Out-Year Funding Priorities in Weapons Activities – Cyber Security



Explanation of Funding and/or Program Changes

In FY 2013, the Cyber Security GPRA unit was requested to be deleted and activities managed by the NNSA OCIO consolidated under the new single GPRA Unit titled NNSA CIO Activities.

(Dollars in Thousands)

	FY 2013 Annualized CR	FY 2014 Request	FY 2014 Request vs. FY 2013 Annualized CR
Cyber Security (Homeland Security)			
· **Infrastructure Program**	**123,022**	**0**	**-123,022**
Reflects realignment of Cyber Security program to NCIO Activities.			
· **Enterprise Secure Computing**	**14,000**	**0**	**-14,000**
Reflects realignment of Cyber Security program to NCIO Activities.			
· **Technology Application Development**	**0**	**0**	**0**
Reflects realignment of Cyber Security program to NCIO Activities.			
Total Funding Change, Cyber Security	**137,022**	**0**	**-137,022**

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 2012	• Federal Virtual Desktop Pilot began December 31, 2011. • Federal Virtual Desktop Phase I Implementation completed on March 31, 2012. • Consolidated Records Management Program began July 1, 2012. • Implemented Federal Cloud on August 31, 2012.	**111,750**
FY 2013	• Initiate the OneNNSA Network. • 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.	**123,022**
FY 2014	• This funding has moved to the NNSA CIO Activities.	**0**
FY 2015	• This funding has moved to the NNSA CIO Activities.	**0**
FY 2016		**0**
FY 2017		**0**
FY 2018		**0**

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 2012	• 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 and to 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 enhanced our capabilities by adding work flow and other automation enhancements to our user management process. • Replaced the Security Event and Incident Management (SEIM) Tool giving 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.	**13,885**
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 SPIRNet. • Complete development of IARC as the Computer Network Defense Service Provider (CNDSP) for the nuclear security enterprise. • Continue integration of Product Realization Integrated Digital Enterprise (PRIDE) applications. • Continue deployment of the Small Site Hub. • Continue development of classified cloud computing for the nuclear security enterprise (2NV).	**14,000**
FY 2014	• This funding has moved to the NNSA CIO Activities.	**0**
FY 2015	• This funding has moved to the NNSA CIO Activities.	**0**
FY 2016		**0**
FY 2017		**0**
FY 2018		**0**

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 2012	• Continued to focus on the enhancement of cyber security capabilities in the areas of incident management and disk encryptions. • Continued to implement risk mitigation processes to provide for improvement in the cyber security architecture. Actions taken to ensure improvements were made which included strengthening the NNSA cyber security architecture for NNSA Headquarters and sites. • Baselined the cyber security controls for confidentiality, integrity, and availability and incorporated the certification and accreditation process into the cyber security architecture life-cycle model. • Continued to employ a layered defense-in-depth cyber security model across the NNSA enterprise to ensure integrated and layered protections are implemented consistently across NNSA computing environments.	**5,735**
FY 2013	• Funding was transferred to higher priorities within Cyber Security.	**0**
FY 2014	• This funding has moved to the NNSA CIO Activities.	**0**
FY 2015	• This funding has moved to the NNSA CIO Activities.	**0**
FY 2016		**0**
FY 2017		**0**
FY 2018		**0**

NNSA CIO Activities
Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
NNSA CIO Activities [a]			
Cyber Security (Homeland Security) [b]			
Infrastructure Program	0	0	105,441
Technology Application Development	0	0	4,000
Enterprise Secure Computing (Homeland Security) [b]	0	0	10,000
Federal Unclassified Information Technology [c]	0	0	29,000
Total, NNSA CIO Activities	**0**	**0**	**148,441**

Out-Year Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
NNSA CIO Activities [a]					
Cyber Security (Homeland Security) [b]					
Infrastructure Program	105,441	135,805	107,661	110,404	113,045
Technology Application Development	4,000	4,000	4,000	4,000	4,000
Enterprise Secure Computing (Homeland Security) [b]	10,000	10,000	10,000	10,000	10,000
Federal Unclassified Information Technology [c]	29,000	30,000	30,000	30,000	30,000
Total, NNSA CIO Activities	**148,441**	**179,805**	**151,661**	**154,404**	**157,045**

[a] This represents the proposed control level.
[b] The Cyber Security program was previously funded under the Safeguards and Security header.
[c] The budget request reflects the consolidation of the Cyber Security program and the functional transfer of the Office of the Administrator Federal Unclassified Information Technology to NCIO.

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
National Defense Authorization Act for FY 2013 (P.L. 112-239)
The Continuing Appropriations Resolution, 2013 (P.L. 112-175)

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 the NNSA and DOE strategic objective "Secure Our Nation" and "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

The Cyber security and the IT programs managed by the NNSA OCIO are requested to be consolidated under the new single Government Performance Results Act (GPRA) unit titled NNSA CIO Activities. Cyber initiatives are supported by IT Investments; this change provides better alignment of resources to focus on the emerging threat. The NCIO 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.

In FY 2012, NCIO achieved significant accomplishments and milestones in program management and 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

NNSA actively participates in the Cyber security Cross Agency Priority Goal with the DOE CIO to achieve 95% use of critical cyber security capabilities for continuous monitoring and Trusted Internet Connections on executive branch information systems and 90% compliance with HSPD-12 strong authentication for DOE users by December 2014. NNSA monitors and reports on the Cyber security measures provided in the DOE CIO FY 2014 budget.

Program Goals

- Develop and Implement OneNNSA network.
- Develop the Laboratories/Plants Cloud Architecture.
- Working with the DOE CIO, contribute to implementation of 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 NCIO or his/her representative, before next steps can be taken.

Program Planning and Management

The NNSA CIO Activities 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. 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.

Strategic Management

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 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, and
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, and
- DOE Risk Management Framework.

Major Priorities and Assumptions

Outyear funding levels (FY 2015 through FY 2018) for the NCIO Activities total $642,915,000. NCIO will transform the computing environment. We will accomplish this with the anticipated increase in funding levels over the next five years by delivering three pillars of our strategy: the NNSA Network Vision (2NV), the Joint Cyber Security Coordination Center (JC3, with the DOE CIO), and the Cyber Sciences Laboratory (CSL). The mission of the CSL is to organize, plan, and execute a coordinated research agenda that addresses current and emerging cyber security challenges with impacts on the operational management of the NNSA nuclear weapons enterprise, the management of nuclear weapons information, and the operational management of the national electric grid. The research results produced by the CSL will be used within DOE/NNSA and shared, as applicable and appropriate, with other agencies and organizations.

Program Goals and Funding

NCIO Programmatic goals for the coming fiscal year include:

- Develop and implement One NNSA network;
- Ensure that sufficient information management security safeguards are implemented;
- Provide the requisite guidance in compliance with the DOE Defense-in-Depth Cyber Security strategy and the NNSA Information management Strategic Plan, and
- Ensure the necessary requirements are provided, which include asset inventory, patch management, configuration management, reporting and network monitoring.

Full Cost Recovery Estimates

(Dollars in Thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Site			
Kansas City Plant	0	0	800
Lawrence Livermore National Laboratory	0	0	3,200
Los Alamos National Laboratory	0	0	3,200
Nevada National Security Site	0	0	0
Pantex Plant	0	0	0
Sandia National Laboratories	0	0	3,200
Y-12 National Security Complex	0	0	0
Total	**0**	**0**	**10,400**

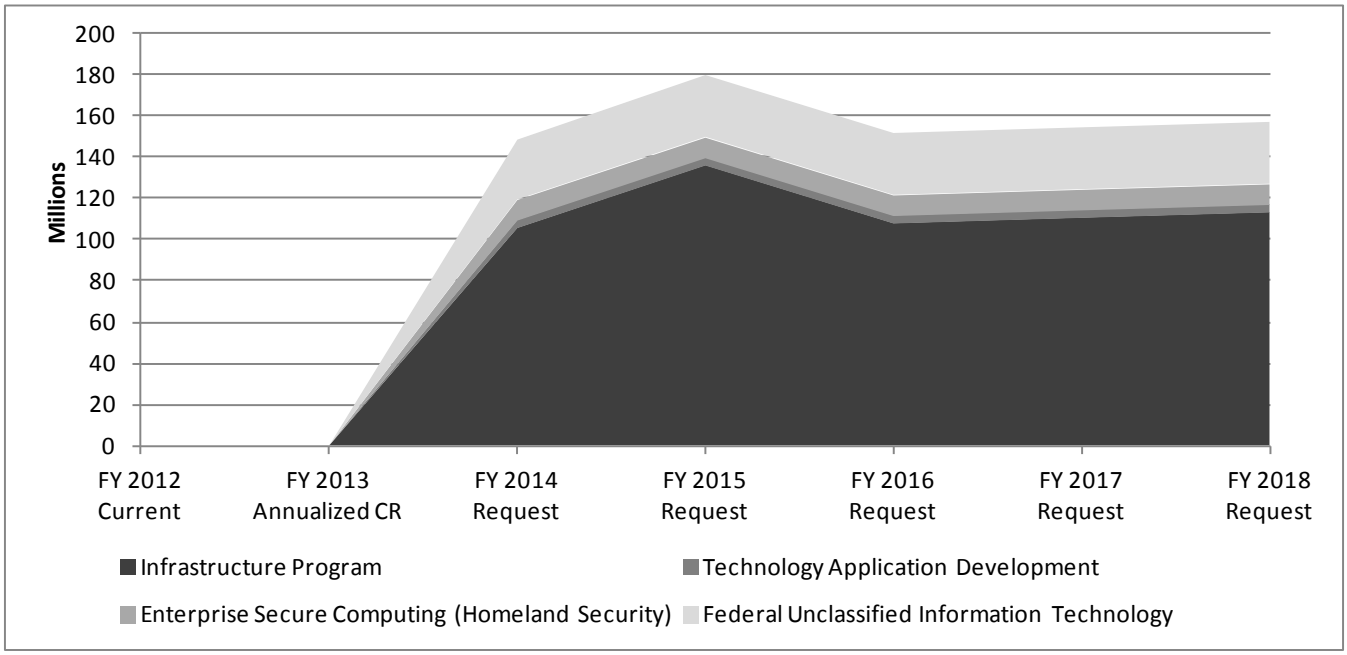
The FY 2014-2018 Request includes a changed approach to funding NNSA's NCIO and the former Cyber Security activities. The Department requests and receives direct appropriations for NCIO funded mission-driven activities focused on research and development of information technology and cyber security solutions. Because some NCIO support is provided to other programs, including Work for Others (WFO), starting in FY 2014, the Department will follow existing policy and begin charging full cost for these materials and services provided to agencies outside the Department. This is consistent with the October 1, 2008 memo from the DOE Chief Financial Officer on Indirect Funded Activity Issues.

An estimate of 20% was used to calculate the amount of full cost recovery of activities that support and/or benefit WFO customers for FY 2014. These costs will be allocated to the WFO customers as work is accomplished at the contractor site. The table above provides an estimate of costs that will be recovered from WFO customers. Work for Others estimates will be tracked during the first year to validate the true full cost recovery amount necessary for future years.

Performance Measures

Performance Goal (Measure)	**Cyber Security Assessment Reviews** - Annual Percentage of Cyber Security Site Assessment Reviews conducted by the Office of Health, Safety, and Security (HSS) and Office of the Chief Information Officer (OCIO) that resulted in the rating of "effective."		
Fiscal Year	**2012**	**2013**	**2014**
Target	N/A	N/A	100% of reviews resulting in "effective" rating
Result			
Endpoint Target	Annually, achieve an effective rating of at least 100% of OCIO site assistance visits (SAV) Cyber Security reviews. Note: The program name changes from Cyber Security to NNSA CIO Activities in FY 2014.		

Figure 1: Relative Out-Year Funding Priorities in Weapons Activities – NNSA CIO Activities



Explanation of Funding and/or Program Changes

	(Dollars in Thousands)		
	FY 2013 Annualized CR	FY 2014 Request	FY 2014 Request vs. FY 2013 Annualized CR
NNSA CIO Activities			
· **Infrastructure Program**	**0**	**105,441**	**+105,441**
Reflects funding transferred from Cyber Security. The comparable decrease (-$14,000) is attributed to completion of initial 2NV work scope and the realignment of funds to support Technology Application Development. This change has been offset by a reduction for anticipated management efficiency and workforce restructuring reductions for Weapons Activities.			
· **Technology Application Development**	**0**	**4,000**	**+4,000**
Funding for Technology Application Development was transferred to higher priority infrastructure activities within the program in FY 2013 only, and is included in the FY 2014 and outyear request. This increase has been offset by a reduction for anticipated management efficiency and workforce restructuring reductions for Weapons Activities.			
Enterprise Secure Computing	**0**	**10,000**	**+10,000**
Reflects funding transferred from Cyber Security. The comparable decrease (-$4,000) for the operational requirement of the Enterprise Secure Network is due to a reduction to outside contracts. This increase has been offset by a reduction for anticipated management efficiency and workforce restructuring reductions for Weapons Activities.			
Federal Unclassified Information Technology	**0**	**29,000**	**+29,000**
Reflects the transfer of funds from the Office of the Administrator appropriation to consolidate programs managed by the NNSA OCIO under a single budget program. The comparable increase from FY 2012 (+$5,700) is due to records management activities and general cost growth of doing business. This increase has been offset by a reduction for anticipated management efficiency and workforce restructuring reductions for Weapons Activities.			
Total Funding Change, NNSA CIO Activities	**0**	**148,441**	**+148,441**

Cyber Security (Homeland Security)
Infrastructure Program and Technology Application Development
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** - 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.
- OMB M-1 1-29, Chief Information Officer Authorities, http://www.whitehouse.gov/sites/default/files/omb/memoranda/2011/mll-29.pdf.
- OMB M-12-10, Implementing PortfolioStat, http://www.whitehouse.gov/sites/default/files/omb/memoranda/2012/m-12-10 l.pdf.
- OMB M-13-09, Fiscal Year 2013 PortfolioStat Guidance: Strengthening Federal IT Portfolio Management-http://www.whitehouse.gov/sites/default/files/omb/memoranda/2013/m-13-09.pdf.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
Cyber Security		
FY 2012		**0**
FY 2013		**0**
FY 2014		**109,441**
FY 2015		**139,805**
FY 2016		**111,661**
FY 2017		**114,404**
FY 2018		**117,045**
Infrastructure Program		
FY 2012	• This activity was transferred from Cyber Security.	**0**
FY 2013	• This activity was transferred from Cyber Security.	**0**
FY 2014	• Leverage Cloud Computing to Enable a Low-Cost Shared Services Model. • Build the Next Generation Mobile Infrastructure. • Contribute to implementation of the Joint Cyber Security Coordination Center (JC3). • Finalize Implementation of the NNSA Continuous Asset Monitoring (CAM) Program. • Develop Supply Chain Management protection strategies. • Identify and document NNSA mission critical information systems and applications. • Aggregate evaluation of site-wide implementation of Cyber Security program requirements.	**105,441**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Continue to maintain and support the infrastructure program that supports the cyber security operations and activities at NNSA M&O sites around a defense-in-depth approach.	**135,805** **107,661** **110,404** **113,045**
Technology Application Development		
FY 2012	• This activity was transferred from Cyber Security.	**0**
FY 2013	• This activity was transferred from Cyber Security.	**0**
FY 2014	• 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. • Contribute to improvement to JC3 Capability and enhancement to the Cyber Sciences Laboratory capability.	**4,000**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Continue to develop and advance policies and initiatives that will support short and long-term solutions to specific cyber security needs at the NNSA sites and headquarters locations and focus on emerging technologies and leverage existing technology resources to create a more secure environment.	**4,000** **4,000** **4,000** **4,000**

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 2012	• This activity was transferred from Cyber Security.	**0**
FY 2013	• This activity transferred from Cyber Security.	**0**
FY 2014	• Continue integration of Product Realization Integrated Digital Enterprise (PRIDE) applications. • Continue deployment of the Small Site Hub. • Continue development of classified cloud computing for the NSE (2NV) Virtual desktop infrastructure. • Two-factor authentication Public Key Infrastructure (PKI). • Implementation of the Department computer network defense service provider. • Implementation of voice over IP within the classified environment.	**10,000**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Continue to maintain and implement enterprise level classified computing infrastructure that enables effective collaboration and information sharing necessary for the NNSA Enterprise.	**10,000** **10,000** **10,000** **10,000**

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. The 2NV is the IT transformation that is a foundational activity towards implementing the "One NNSA" vision established by the Former NNSA Administrator. Each of the investments in the 2NV portfolio directly supports a cyber security outcome. ONEvoice provides an encrypted collaboration suite for multi-site communications; OneNNSA Network provides a secure encrypted wide area network solution over the ESNET network, and Identify Management (IDM) provides secure, single sign on capabilities. In order to think, behave, and respond as one cohesive agency with a shared, critical national security mission, it is necessary to re-engineer our telecommunications networks to remove the technical barriers to collaboration and to outfit our employees with the effective communication tools to maximize their efficiency and lower operational costs.

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 2012	• This activity was transferred from the Office of the Administrator account.	**0**
FY 2013	• This activity was transferred from the Office of the Administrator account.	**0**
FY 2014	• Implementation of current 2NV-related technology. • Increase efficiencies related to the provisioning of the commodity computing infrastructure and IT solutions in order to re-invest savings to generate new efficiencies. • Create a self-sustaining cycle of continuous improvement that creates a best in class business value for the American taxpayer. • Provide Federal desktop services as provisioned by the Department of Energy. • Provide IT technical services and incidental advisory and assistance services.	**29,000**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	• Provide hardware and software licensing, maintenance and refresh. • Provide IT services to site offices provisioned by their M&O.	
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Continue to support current technology implementation which enables effective collaboration and information sharing necessary for NNSA federal employees and support contractors.	**30,000** **30,000** **30,000** **30,000**

National Security Applications
Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
National Security Applications	**10,000**	**18,248**	**0**

Out-Year Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
National Security Applications	**0**	**0**	**0**	**0**	**0**

[a] Funding for FY 2014 through FY 2018 is requested under the Counterterrorism and Counterproliferation Programs.

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
National Defense Authorization Act for FY 2013 (P.L. 112-239)
The Continuing Appropriations Resolution, 2013 (P.L. 112-175)

Overview

National Security Applications (NSA) activities have been substantially revised to align with Counterterrorism and Counterproliferation (CTCP) Programs within the Defense Nuclear Nonproliferation appropriation. This reflects the consolidation of CTCP activities within the Office of Counterterrorism and Counterproliferation. NSA provided the basis for the technical work that materially contributes to the Department's goal of enhancing nuclear security. Funds in this budget were previously spent on key joint activities, such as the Defense Threat Reduction Agency (DTRA)-NNSA Memorandum of Understanding (MOU), signed by the NNSA Former Administrator and the Under Secretary of Defense for Acquisition, Technology, and Logistics (AT&L) in December 2008.

Program Accomplishments and Milestones

In the prior appropriation year, NSA accomplished revised milestones in program development and research and development. These accomplishments include revision and rewording of several focus areas, as defined in the updated DTRA-NNSA Joint Program Plan, as well as the key technical milestones and deliverables for which each NNSA laboratory is responsible. Additionally, the program developed and demonstrated capability and utility of simulators to simulate effects and response in an electromagnetic environment and continued development of a technical nuclear forensics.

Program Planning and Management

No funding is requested for NSA in the outyears.

Strategic Management

NNSA has implemented a new oversight structure for activities previously funded under the NSA line. Under the new structure, program oversight is consolidated under the Office of Counterterrorism and Counterproliferation (CTCP). CTCP has identified relevant lead action officers for each technical focus area from across NNSA program offices to direct and oversee the day-to-day activities.

Major Outyear Priorities and Assumptions

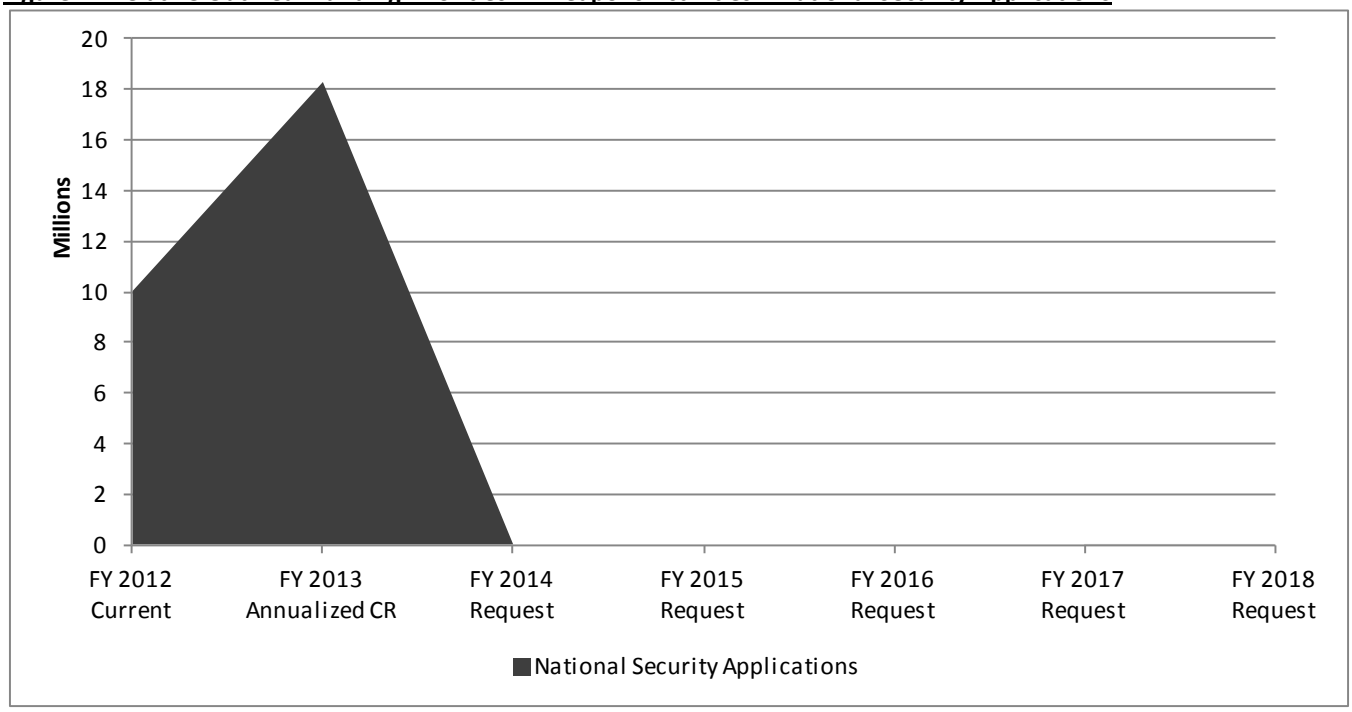
No funding is requested for NSA in the outyears.

Performance Measures

Performance Goal (Measure)	**Tools for Counter Terrorism and Weapons Effects** - Percent complete toward delivery of a new generation of transportable, high-performance radiation source.		
Fiscal Year	**2012**	**2013**	**2014**
Target	5% complete	N/A	N/A
Result	**Met** - 5		
Endpoint Target	Based on continuing HEWD concerns and reductions in the NSA line funding, NNSA re-scoped the technical collaboration with DTRA. NNSA and the NSA line ceased funding of these efforts in FY 2013. DTRA may have continued its efforts, but it did so unilaterally.		

Performance Goal (Measure)	**Tools for Nuclear Nonproliferation** - Percent complete toward delivery of a prototype enhanced particle accelerator that can be used for proton and x-ray radiography diagnostics.		
Fiscal Year	**2012**	**2013**	**2014**
Target	13% complete	N/A	N/A
Result	**Met** - 13		
Endpoint Target	Based on continuing HEWD concerns and reductions in the NSA line funding, NNSA re-scoped the technical collaboration with DTRA. NNSA and the NSA line ceased funding of these efforts in FY 2013. DTRA may have continued its efforts, but it did so unilaterally.		

Figure 1: Relative Out-Year Funding Priorities in Weapons Activities – National Security Applications



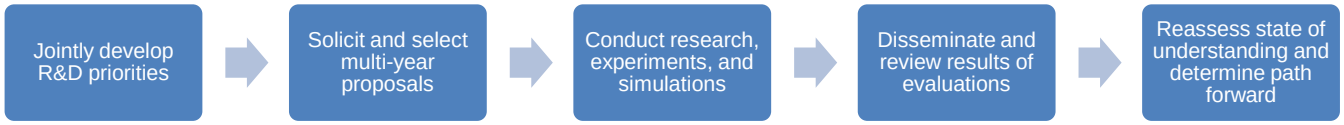
Explanation of Funding and/or Program Changes

	(Dollars in Thousands)		
	FY 2013 Annualized CR	FY 2014 Request	FY 2014 Request vs. FY 2013 Annualized CR
National Security Applications	**18,248**	**0**	**-18,248**
The National Security Applications funding has been moved to the Counterterrorism and Counterproliferation Programs within the Defense Nuclear Nonproliferation appropriation starting in FY 2014. The scope of the surviving NSA technical activities have been revised and refocused to align with the CTCP program for FY 2014.			
Total Funding Change, National Security Applications	**18,248**	**0**	**-18,248**

National Security Applications
Overview

The funds in the National Security Applications (NSA) 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 (USG) 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 capabilities are 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.

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 "FY 2011 Counterterrorism, Survivability, and Weapons Effects Joint Program Plan" for more information.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• Conducted experiments for detecting shielded special nuclear materials and pulsed power-based technology for standoff active interrogation (this activity was discontinued). • Developed and demonstrated capability and utility of circuit, mixed signal, and semiconductor simulators to simulate effects and response in an electromagnetic environment. • Continued development of forensics database, Integrated Knowledge Engine, and Forensics Inversion Tool Suite.	**10,000**
FY 2013	• Conduct electromagnetic pulse electronic damage assessments with complementary modeling and simulation of effects and response. • Maintain and improve experimental capabilities for nuclear forensics, including improved and more-timely attribution methods for analysis, sample irradiation, and subsequent laboratory analysis activities.	**18,248**
FY 2014	• This funding has been transferred to the Counterterrorism and Counterproliferation Programs with substantial revisions to the technical work scope.	**0**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Funding has been moved to the Counterterrorism and Counterproliferation Programs.	**0** **0** **0** **0**

Defense Nuclear Nonproliferation

[redacted]

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, $2,140,142,000, to remain available until expended.

Explanation of Change

Change from the language proposed in FY 2013 consists of a change to the requested funding amount.

Defense Nuclear Nonproliferation

Overview
Appropriation Summary by Program

(Dollars in Thousands)

	FY 2012 Current [a] [b]	FY 2013 Annualized CR [c]	FY 2014 Request
Defense Nuclear Nonproliferation			
Defense Nuclear Nonproliferation Programs			
Global Threat Reduction Initiative	503,453	501,048	424,487
Defense Nuclear Nonproliferation R&D [d]	347,905	456,317	388,838
Nonproliferation and International Security	153,594	154,534	141,675
International Material Protection and Cooperation [e]	575,789	573,415	369,625
Fissile Materials Disposition	685,386	721,784	502,557
Legacy Contractor Pensions	55,823	56,165	93,703
Subtotal, Defense Nuclear Nonproliferation Programs	**2,321,950**	**2,463,263**	**1,920,885**
Nuclear Counterterrorism Incident Response Program (Homeland Security) [f]	**0**	**0**	**181,293**
Counterterrorism and Counterproliferation Programs [f]	**0**	**0**	**74,666**
Use of Prior Year Balances [g]	0	-32,204	-36,702
Rescission of Prior Year Balances [g]	-21,000	-21,129	0
Total, Defense Nuclear Nonproliferation	**2,300,950**	**2,409,930**	**2,140,142**

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

- FY 2012 Transferred: SBIR: $5,504; STTR: $741
- FY 2013 Annualized CR: SBIR: $8,366; STTR: $1,085
- FY 2014 Request: SBIR $6,160; STTR: $880

[a] FY 2012 total includes $5,453,150 in international contributions for the Global Threat Reduction Initiative from the following countries: Canada, $1,520,700; Czech Republic, $26,400; United Kingdom, $3,500,000; and New Zealand, $406,050.

[b] FY 2012 total includes $5,861,940 in international contributions for International Material Protection and Cooperation from the following countries: Republic of Korea, $600,000; United Kingdom, $4,800,000; and Finland, $461,940.

[c] FY 2013 amounts shown reflect the P.L. 112-175 continuing resolution level annualized to a full year.

[d] Formerly Nonproliferation and Verification Research and Development.

[e] Formerly International Nuclear Materials Protection and Cooperation.

[f] Moved from the Weapons Activities appropriation to the Defense Nuclear Nonproliferation appropriation.

[g] The use of prior year balances and rescission of prior year balances are derived from DNN Programs' funds. None are from the NCTIR Program or the CTCP Programs.

Out-Year Appropriation Summary by Program

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
Defense Nuclear Nonproliferation					
Defense Nuclear Nonproliferation Programs					
Global Threat Reduction Initiative	424,487	379,329	428,696	457,928	505,620
Defense Nuclear Nonproliferation R&D	388,838	391,000	405,375	430,903	442,042
Nonproliferation and International Security	141,675	147,422	149,768	156,801	167,618
International Material Protection and Cooperation	369,625	369,165	382,392	379,332	310,718
Fissile Materials Disposition	502,557	221,695	228,904	245,408	239,487
Legacy Contractor Pensions	93,703	101,321	97,571	79,625	66,019
Subtotal, Defense Nuclear Nonproliferation Programs	**1,920,885**	**1,609,932**	**1,692,706**	**1,749,997**	**1,731,504**
Nuclear Counterterrorism Incident Response Program (Homeland Security)	**181,293**	**172,318**	**174,555**	**179,508**	**184,981**
Counterterrorism and Counterproliferation Programs	**74,666**	**74,166**	**75,497**	**78,159**	**80,686**
Use of Prior Year Balances [a]	-36,702	0	0	0	0
Rescission of Prior Year Balances [a]	0	0	0	0	0
Total, Defense Nuclear Nonproliferation	**2,140,142**	**1,856,416**	**1,942,758**	**2,007,664**	**1,997,171**

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

- FY 2014 Request: SBIR $6,160; STTR: $880
- FY 2015 Request: SBIR $6,403; STTR: $883
- FY 2016 Request: SBIR $6,866; STTR: $1,030
- FY 2017 Request: SBIR $7,723; STTR: $1,086
- FY 2018 Request: SBIR $7,926; STTR: $1,115

[a] The use of prior year balances and rescission of prior year balances are derived from DNN Programs' funds. None are from the NCTIR Program or the CTCP Programs.

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
National Defense Authorization Act for FY 2013 (P.L. 112-239)
The Continuing Appropriations Resolution, 2013 (P.L. 112-175)

Overview

In FY 2014, NNSA is proposing to transfer the Nuclear Counterterrorism Incident Response Program (NCTIR) and the Counterterrorism and Counterproliferation (CTCP) Programs from the Weapons Activities appropriation to the Defense Nuclear Nonproliferation appropriation. This move aligns all NNSA funding for reducing global nuclear dangers in one appropriation. The Defense Nuclear Nonproliferation (DNN) appropriation includes funding for seven programs managed by three different organizations within NNSA: the Office of Defense Nuclear Nonproliferation (DNN): the Office of Emergency Operations (which manages the NCTIR Program), and the Office of Counterterrorism and Counterproliferation Programs. Together these organizations provide policy and technical leadership to limit or prevent the spread of materials, technology, and expertise relating to weapons of mass destruction; advance technologies that detect the proliferation of weapons of mass destruction worldwide; eliminate or secure inventories of surplus materials and infrastructure usable for nuclear weapons; and provide a technically trained response to incidents worldwide and address the danger that hostile nations or terrorist groups may acquire nuclear devices and weapons-usable material, dual-use production technology, or weapons of mass destruction expertise.

By drawing together these three NNSA programs, we strengthen the existing synergies and cooperation among these offices. In doing so, we provide priority and emphasis to NNSA programs that are responsible for implementing the President's nuclear security priorities and the 2010 Nuclear Posture Review (NPR) which "outlines the Administration's approach to promoting the President's agenda for reducing nuclear dangers and pursuing the goal of a world without nuclear weapons, while simultaneously advancing broader U.S. security interests." Based on the fundamental and continuing changes in both the domestic and the international security environments, the NPR report identifies preventing nuclear proliferation and nuclear terrorism as the highest of five key areas of focus. This change in budget structure presents with greater clarity the total funding and level of activity undertaken by NNSA in this increasingly important area. At the same time, this realignment ensures that the Weapons Activities appropriation is now entirely focused on the United States (U.S.) nuclear stockpile and related activities.

The DNN Programs supports NNSA's goals of reducing nuclear dangers, modernizing the NNSA infrastructure, and strengthening the science, technology, and engineering base. DNN's mission is to develop and implement policy and technical solutions to eliminate proliferation-sensitive materials and limit or prevent the spread of materials, technology, and expertise related to nuclear and radiological weapons and programs around the world. It implements these missions by drawing on its core competencies to: remove, eliminate or minimize nuclear and radiological materials; detect and prevent the proliferation of nuclear and radiological materials, technologies and expertise; secure and safeguard nuclear and radiological materials; research and develop new technologies to support nonproliferation and arms control missions, and a policy and planning function.

DNN carries out this mission in a dynamic global security environment characterized by the persistence and escalation of regional conflicts; continued diffusion of dual-use technology and information; continued expansion of civilian nuclear energy; ongoing challenges related to managing existing nuclear and radiological materials; increased sophistication of trafficking networks; continued evidence of terrorist interest in procuring nuclear materials; challenges to the nonproliferation regime, and the growth of cyber threats that can directly affect nuclear safeguards and security.

DNN is responsible for implementing key U.S. Government nuclear security, nonproliferation, and arms control activities. It draws on its core competencies to: remove, eliminate and minimize the use of proliferation-sensitive materials; detect and prevent the illicit trafficking of nuclear/radiological materials, technology, information and expertise; safeguard and secure materials, technologies, and facilities, and provide R&D technology solutions for unilateral and cooperative monitoring of foreign nuclear weapons activities, detecting illicit diversions of material, and detecting nuclear detonations. The core competencies are supported by DNN's capacity for international outreach and engagement and its project management, implementation, and technical/policy expertise.

DNN is a strong contributor to interagency and international nuclear security efforts. In the U.S., DNN works in partnership with the Departments of State and

Defense, the Nuclear Regulatory Commission, and many others. Internationally, DNN has a strong and long-established partnership with the International Atomic Energy Agency (IAEA), and has active bilateral and multilateral programs, including through the Global Partnership.

DNN manages the following within the appropriation: Global Threat Reduction Initiative (GTRI), DNN Research and Development (R&D), Nonproliferation and International Security (NIS), International Material Protection and Cooperation (IMPC), and Fissile Materials Disposition (FMD).

The Office of Emergency Operations manages the Nuclear Counterterrorism Incident Response Program (NCTIR) that applies technical assets from the nuclear security enterprise to resolve or manage nuclear and radiological incidents, especially those involving terrorism. It addresses this threat by maintaining essential components of the Nation's capability to respond to and manage the consequences domestically or internationally should an attack result in radiation exposure to the public. The NCTIR Program contributes to the capability by maintaining response teams comprised of technical specialists and conducting programs to train and equip response organizations on the technical aspects of nuclear counterterrorism.

The CTCP Programs advance U.S. Government counterterrorism and counterproliferation goals through innovative science, technology, and policy-driven solutions. Funds in this budget are primarily spent on the science to understand nuclear threat devices, including Improvised Nuclear Devices, and their constituents (namely nuclear and energetic materials). Key CTCP technical activities sustain and exercise the U.S. Government's ability to understand and prevent nuclear terrorism and to counter nuclear device proliferation.

Program Accomplishments and Milestones

Significant DNN appropriation accomplishments in FY 2012 included:

REMOVE/SECURE/ELIMINATE MATERIALS

1) Removed or eliminated 337 kilograms of highly enriched uranium (HEU) and plutonium from countries such as Ukraine, Uzbekistan, Poland and Mexico;
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 approximately 775 nuclear weapons based on IAEA significant quantities of fissile material;
3) Converted or verified shutdown of six HEU-fueled research reactors to allow removal of the HEU;
4) Downblended a cumulative 141 MT of surplus U.S. HEU;
5) Converted 200 kg of plutonium metal to oxide in support of plutonium disposition;
6) Made considerable progress on the construction of the U.S. MOX Fuel Fabrication Facility while achieving more than 11 million safe work hours;
7) 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;
8) Completed security upgrades at 301 buildings with high priority radiological materials;
9) Installed radiation detection equipment at a cumulative total of 493 border crossing sites and 44 Megaports;
10) Monitored the downblending of 30 MT of Russian weapons-origin HEU from dismantled nuclear weapons to LEU – enough for 1,200 nuclear weapons;
11) Monitored the shutdown status of 10 weapons-grade plutonium production reactors in Russia, and
12) Monitored the non-weapons use of over 9MT of Russian weapons-grade plutonium oxide.

PREVENTING PROLIFERATION

1) Hosted the 2012 Nuclear Supplies Group (NSG) Plenary in Seattle, Washington, which resulted in significant changes to the NSG's control lists for reactor and enrichment technologies;
2) Continued expansion of the Nuclear Science and Security Consortium to link graduate student researchers, including HBCU and MSI graduates, with National Laboratory researchers to meet future nonproliferation technology challenges;
3) Provided technical support to Nuclear Security Centers of Excellence in South Korea and Japan;
4) Conducted 5,700 statutorily mandated reviews of U.S. export license applications, DOE projects with foreign nationals, and nuclear software code requests to control the spread of WMD-related (excludes chemical and biological) materials, equipment, technology and expertise;
5) Worked with 29 partner countries to develop sustainable national export control systems that meet critical requirements;
6) Conducted 2,400 technical reviews of foreign WMD-related technology procurements;
7) Provided technical assistance to U.S. Government interdiction working groups on WMD

technologies/activities and sanctions under the Iran, North Korea and Syria Nonproliferation Act, and
8) Met Nuclear Security Summit commitments expanding nuclear forensics engagement with countries and international partners including the IAEA.

ADVANCING NONPROLIFERATION TECHNOLOGIES

1) Established and demonstrated a noble gas migration experimental test bed and developed related inspection technologies to develop nuclear test verification and monitoring capabilities;
2) Established and demonstrated warhead measurements and chain-of-custody test beds to develop technologies and concepts of operations for arms reduction monitoring and transparency initiatives;
3) Conducted the third experiment of the source physics test bed to develop new capabilities to detect and identify extremely low-yield nuclear detonations at increasing levels of confidence;
4) Conducted the first three proliferation detection experiments within the newly established joint research and experimental test bed with the Defense Threat Reduction Agency, and
5) Jointly with DoD, completed a major review of the nation's space-based nuclear detonation detection system.

NUCLEAR COUNTERTERRORISM INCIDENT RESPONSE

1) Deployed multiple field teams to 40 high-profile events and 28 emergency responses resulting in deployments around the world, an additional 20 responses that did not result in deployments;
2) Participated in 13 international counterterrorism exercises and provided 20 training courses, including I-RAPTER, I-MEDICAL, and I-Consequence Management for more than 920 international emergency response personnel, and
3) Completed OCONUS Emergency Communications Network (ECN) installations of two new nodes in France and the United Kingdom.

COUNTERING NUCLEAR TERRORISM

1) Validated render safe models through Tier Threat Modeling Archive;
2) Completed materials characterization shots at various stockpile-related experimental facilities;
3) Reached year-end goal of 10,200 cumulative local, state, and federal counterterrorism officials trained in WMD prevention and response, and
4) Continued to foster bilateral international collaboration and technical exchanges through the Nuclear Threat Reduction (NTR) channel.

Milestones	**Date**
Nuclear Material Removal/ Elimination	
Fully achieve NNSA's portion of the President's 4-year effort to secure vulnerable material; U.S. disposition of excess defense materials; continue remaining planned material/facility security activities and high priority HEU research reactor conversions and HEU removals beyond the 4- year effort. This includes:	
Global Threat Reduction Initiative	
• Converting or verifying as shutdown four additional HEU research reactors for a cumulative total of 92 reactors.	Sept. 2014
• Remove or eliminating 565 additional kilograms of highly enriched uranium (HEU)/Plutonium (Pu)) for a cumulative total of 4,400 kilograms.	Sept. 2014
• Complete security upgrades at an additional 105 buildings with high priority radiological materials for a cumulative total of 1,708 buildings.	Sept. 2014
DNN R&D	
• Demonstrate technologies for special nuclear material movement detection.	Dec. 2013
• Complete the Domestic Uranium Enrichment RD&D program.	Dec. 2013
NIS	
• Complete successful monitoring of downblending of 500 MT of Russian weapons origin HEU to LEU for use in U.S. civil nuclear reactors (8 MT in FY 2014).	Dec. 2013
• Deliver 5 technologies to foreign partners to meet identified safeguards needs.	Sept. 2014

Milestones	Date
IMPC	
• Complete MPC&A upgrades on eleven additional buildings containing weapons-usable nuclear material (cumulative 229).	Dec. 2013
Fissile Material Disposition	
• Complete physical construction of the WSB.	Oct. 2013
• Begin plutonium oxide production in H-Canyon.	Oct. 2013
Nuclear Counterterrorism Incident Response Program	
• Train, equip and exercise teams of nuclear experts to respond to a nuclear or radiological incident worldwide.	Ongoing
• Continued partnerships with the FBI and DoD.	Ongoing
• Maintain the national capability to render safe a nuclear device.	Ongoing
Counterterrorism and Counterproliferation Programs	
• Continued execution of the Materials Characterization Campaign including Diamond Anvil Cell, Gas-gun, and Z experimental activities.	Sept. 2014
• Continued execution of experimental activities supporting validation of non-US device modeling capabilities.	Sept. 2014

Explanation of Changes

A total of $2.140 billion is requested for the DNN appropriation, which is a 7.0 percent decrease from the FY 2012 Current level. The FY 2014 request increases the levels for: DNN R&D (+$40,933,000) to permit production of nuclear detection satellite payloads; assume satellite-payload integration costs formerly paid by DoD, and to advance national test bed capabilities to develop and demonstrate capabilities for nuclear nonproliferation; test monitoring, arms control and threat reduction; Legacy Contractor Pensions (+$37,880,000) due to changes in demographic and mortality assumptions, and for the addition of the NCTIR Program (+$181,293,000) and CTCP Programs (+$74,666,000). Both NCTIR and CTCP increases have been offset by a reduction for anticipated management efficiency and workforce restructuring reductions. The FY 2014 request decreases the levels for: FMD (-$182,829,000) reflects slowing-down the MFFF project and activities associated with the current plutonium disposition strategy while the Administration is conducting an assessment of alternative plutonium disposition strategies; IMPC (-$206,164,000) to reduce the scope of Second Line of Defense efforts and reduce funding for Russia MPC&A; GTRI (-$78,966,000) consistent with the completion of nuclear removal efforts in the four-year plan; and NIS (-$11,919,000) consistent with the reduction in activity for HEU Transparency as the program nears completion as well as the reduction in pace of the transition of Global Initiatives for Proliferation Prevention to Global Security through Science Partnerships.

Strategic Management

National security priorities articulated in the National Security Strategy and relevant Presidential Policy Directives, 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 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, acquisition, or use 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.

Major Outyear Priorities and Assumptions

Outyear funding levels for the Defense Nuclear Nonproliferation appropriation total $7,804,009,000 for FY 2015 through FY 2018. NNSA developed the outyear programs based on the following 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 and to continue remaining planned activities beyond the four-year effort.

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 security.
We will begin development of a OneNNSA engagement strategy for countries/regions based on a tailored partnership (cost sharing) approach.

Russia will agree to convert or shut-down its HEU-fueled research reactors.

We will continue to reduce nuclear danger through nuclear nonproliferation, test monitoring, arms control and threat reduction field experimentation and research spirals per Section 8115(a) of Public Law 111-118 for meeting the Administration's nuclear nonproliferation and arms control goals (Department of Defense Appropriations Act for Fiscal Year 2010).

We will contribute to the nation's space based global nuclear detonation detection capability per Public Law 110-181; Sec 1065 & Public Law 111-383; Sec 913. (National Defense Authorization Acts for Fiscal Years 2008 and 2011).

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 U.S.-Russian HEU Purchase Agreement will be completed and not extended beyond December 2013.

The network of nuclear security centers of excellence that sprung from the 2010 Nuclear Security Summit will continue. We will develop and provide platforms for expanded dialogue with China, India, and other countries.

Partnership with Russia to collaborate on nuclear security improvements will continue.

Exchanges of nuclear security best practices and training/exercises will continue.

Proliferation expertise continues to be a significant risk and that risk has expanded globally.

NNSA remains committed to the plutonium disposition mission. However, considering the preliminary cost increase and the current budget environment, the Administration is conducting an assessment of alternative plutonium disposition strategies in FY 2013. As a result, NNSA will slow down the MOX project and other activities associated with the current plutonium disposition strategy during the assessment period.

Outyear funding levels for the NCTIR Program total $711,362,000 for FY 2015 through FY 2018. The outyear numbers for NCTIR reflect major program priorities for the FYNSP: Sustain our mission, maintain readiness and recapitalize equipment to maintain state of the art capabilities; adapt to factors such as increasing demand for nuclear/radiological expertise, emergence of new technologies, expanding threats of proliferation and nuclear terrorism, and sustainment of stabilization capability. Continue international efforts in radiological search training, and provide detection equipment and technical support for radiological and nuclear incidents and counter terrorism.

Outyear funding levels for the CTCP Programs total $308,508,000 for FY 2015 through FY 2018. We will continue to advance counterterrorism and counterproliferation goals by supporting support science to understand nuclear threat devices, including Improvised nuclear devices, and their constituents (namely nuclear and energetic materials). We also will continue to support interagency efforts through jointly-coordinated, long-term research and development (R&D) on selected counterterrorism, survivability, and weapons-effects activities. Finally, we will continue to perform national and international outreach to strengthen nuclear counterterrorism capabilities through table-top exercises, bilateral dialogues, and collaborative technical exchanges.

The NCT and the CTCP Capability Development subprogram priorities are focused on increasing experimental programs that impact its core assessment mission while expanding our knowledge to measurably inform policy-relevant decision-making. One key assumption for the program is that key nuclear security enterprise experimental facilities will be available for the duration of current nuclear and energetic materials roadmap needs. CTCP would need to adjust funding priorities should key facilities be identified for closure before experimental activities are completed.

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 remove additional materials, 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, the IAEA continues to be a vital platform through which to advance our nuclear nonproliferation and nuclear security objectives. DNN coordinates closely with the IAEA's Office of Nuclear Security, Department of Safeguards, Department of Nuclear Energy, and Department of Management through the U.S. Mission to International Organizations in Vienna. DNN supports a number of activities and initiatives through the IAEA's Office of Nuclear Security to strengthen nuclear security worldwide. DNN's support to the Department of Safeguards is crucial to enhancing the effectiveness and efficiency of IAEA safeguards systems. Programs such as the Peaceful Uses Initiative allow the United States to meet its commitment to promote peaceful uses of nuclear technology, while preparing the safety, security, and nonproliferation infrastructure for nuclear energy in countries planning to develop nuclear power.

Promoting transparent arms reductions and implementing nonproliferation treaties, including developing the required verification technologies and approaches and associated transparency monitoring tools, is critical to reducing proliferation concerns. DNN's efforts on arms controls reinforces the 2010 Nuclear Posture Review's call for a bold arms control agenda to demonstrate U.S. leadership and mobilize international support.

The NCTIR Program serves as the Department of Energy/National Nuclear Security Administration lead for all emergency management activities. The Program will train, equip and exercise teams of nuclear experts to respond to a nuclear or radiological incident worldwide, continue partnerships with the FBI and DoD, and maintain the national capability to render safe any nuclear device threat.

The CTCP Programs Goals are centered on improving NCT's ability to assess nuclear threat devices and inform national and international policy decision making processes to minimize the possibility of a nuclear detonation or nuclear terrorist event. The program continues to sustain its outreach to the US Government and the governments of the United Kingdom and the Republic of France.

Figure 1: Relative Out-Year Funding Priorities in the Defense Nuclear Nonproliferation Programs

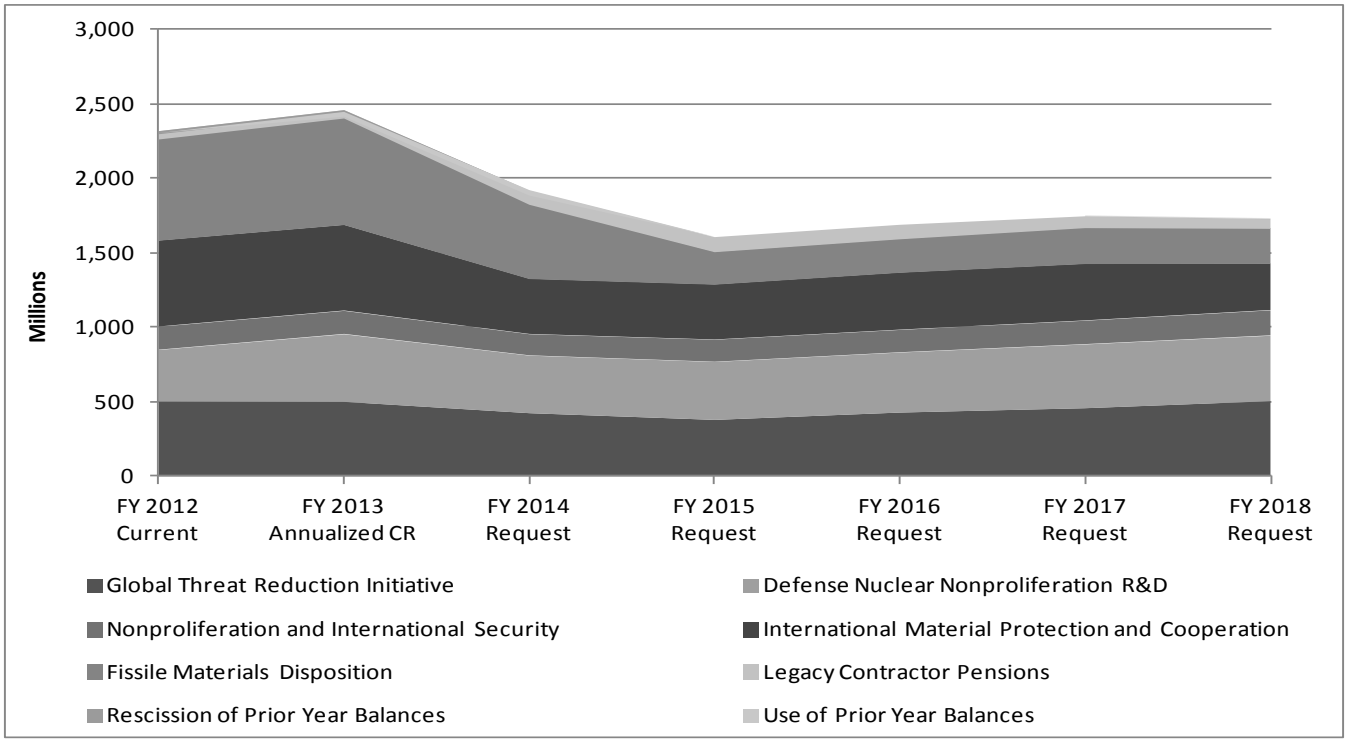
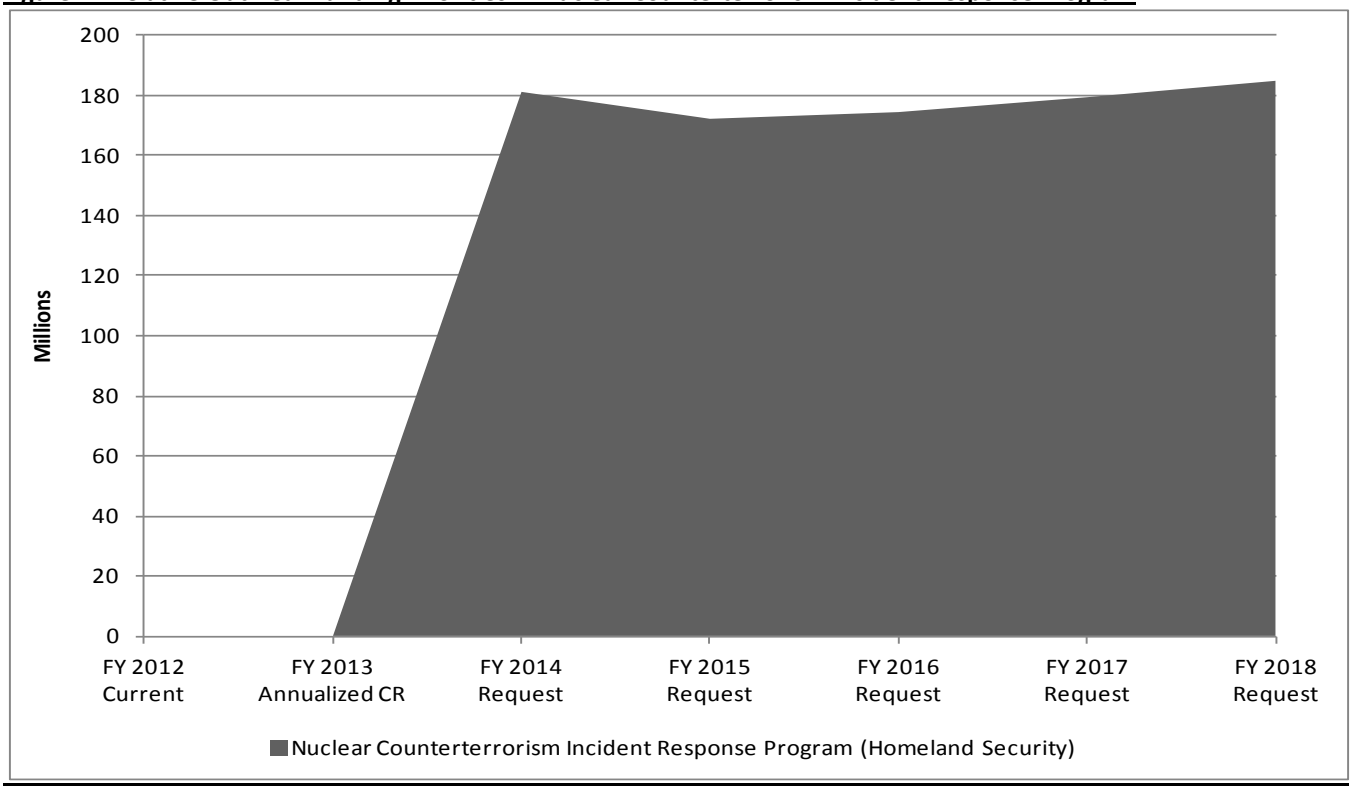
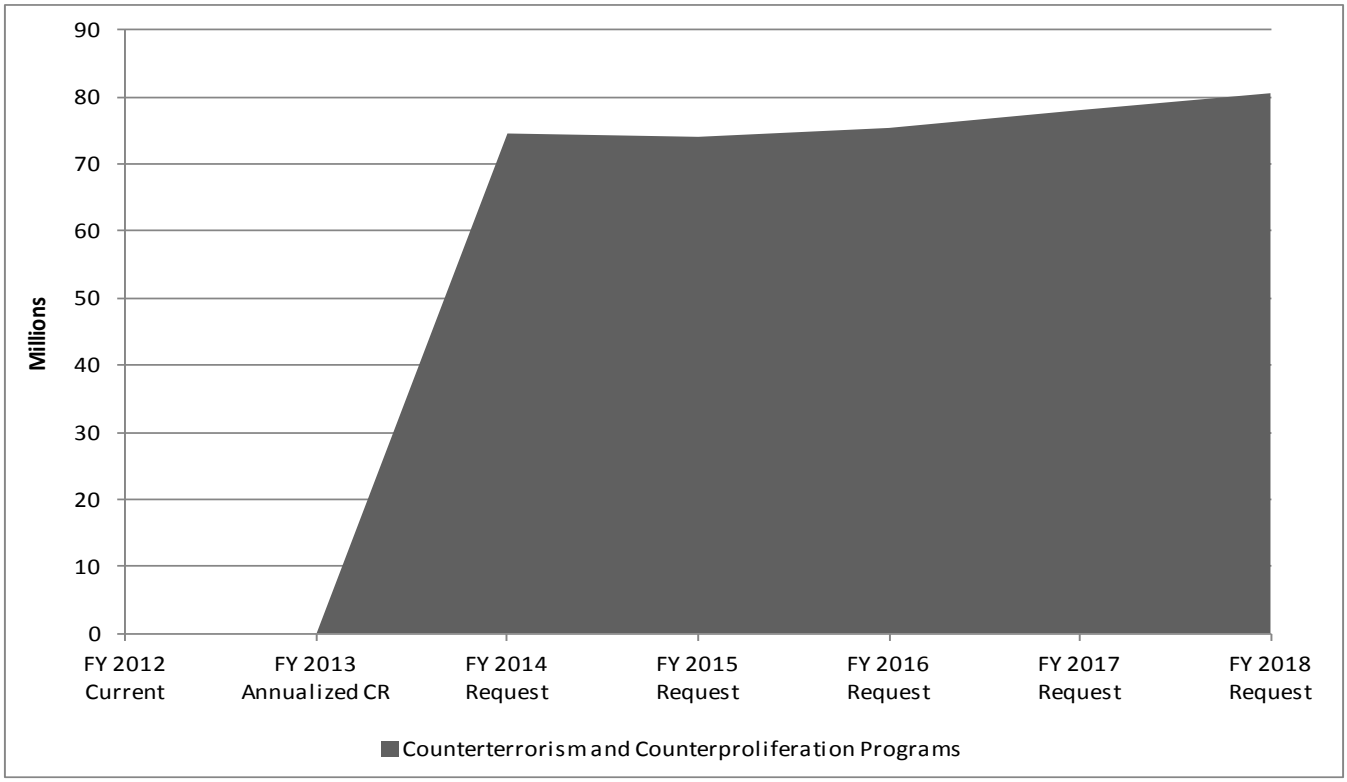


Figure 1: Relative Out-Year Funding Priorities in Nuclear Counterterrorism Incident Response Program[a]



[a] Funding prior to FY 2014 was in the Weapons Activities Appropriation.

Figure 1: Relative Out-Year Funding Priorities in Counterterrorism and Counterproliferation Programs [4]



[4] Funding prior to FY 2014 was in the Weapons Activities account Appropriation.

Explanation of Funding and/or Program Changes

	(Dollars in Thousands)		
	FY 2012 Current	FY 2014 Request	FY 2014 Request vs. FY 2012 Current
Defense Nuclear Nonproliferation Programs			
Global Threat Reduction Initiative	**503,453**	**424,487**	**-78,966**
The decrease in funding for nuclear efforts is consistent with the four-year plan. Funding was requested in FY 2013 for removal efforts that will occur in early FY 2014 to meet the President's goal.			
Defense Nuclear Nonproliferation Research and Development	**347,905**	**388,838**	**+40,933**
This increase permits production of nuclear detection satellite payloads at the rate in accordance with the delivery schedule negotiated with the USAF, and reflects NNSA's assumption of satellite-payload integration costs formerly paid by DOD. These sensor payloads provide the capability to monitor nuclear threats to the U.S. such as surface and above-ground nuclear detonations. The increase also allows us to advance the R&D goals to reduce nuclear danger through nuclear nonproliferation, test monitoring, arms control and threat reduction and through national test bed field experiments and research. The funding level also represents the completion of the Domestic Uranium Enrichment Research, Development, and Demonstration (RD&D) Project, which was a one-time addition in FY 2013.			
Nonproliferation and International Security	**153,594**	**141,675**	**-11,919**
The majority of the decrease reflects a reduction in activity for HEU Transparency as the program nears completion in FY 2015, coupled with a reduction in the pace of transition to the transformed Global Security through Science Partnerships program. While monitoring in Russia is anticipated to end in December, 2013, the agreement under which monitoring is allowed concludes in 2015. There are significantly reduced funds planned for HEU in FY 2014 and FY 2015. These funds are not for monitoring in Russia, but are for data analysis, closeout costs and potential Russian monitoring trips in the United States. These decreases are offset by smaller increases for statutorily mandated activities, including additional bilateral physical protection assessments at facilities overseas containing U.S.-obligated nuclear material and domestic export license reviews of WMD-related dual-use items, as well as for additional technology development and deployment related to spent fuel non-destructive assay and enhanced in-field detection capabilities; and increased support for WMD interdiction through the Interdiction Technical Analysis Group.			

	(Dollars in Thousands)		
	FY 2012 Current	FY 2014 Request	FY 2014 Request vs. FY 2012 Current
International Material Protection and Cooperation	**575,789**	**369,625**	**-206,164**
The FY 2014 Request decreases funding for MPC&A activities as the program shifts to a sustainability phase with the Russian Federation and security costs are increasingly transitioned to the Russian side. The FY 2014 funding request also reflects a reduction from the FY 2012 Current level in funding for Second Line of Defense, but allows for the implementation of activities consistent with the outcome of NNSA's strategic review of SLD.			
Fissile Materials Disposition	**685,386**	**502,557**	**-182,829**
This decrease reflects slowing down construction of the MFFF project and associated supporting activities during assessment of alternative plutonium disposition strategies.			
Nuclear Counterterrorism Incident Response Program	**0**	**181,293**	**+181,293**
This increase reflects the transfer of NCTIR Program from Weapons Activities. When compared to the FY 2012 Current level for these activities (net of the Nuclear Counterterrorism subprogram moved to CTCP), the request reflects an increase of $10.1 million. In FY 2014, the program will invest in leverage at a distance capability for NEST, maintain training of the Consequence Management Home Team, sustain stabilization cities, complete improvements to U12 P-tunnel, address and sustain emergency management requirements, maintain the Emergency Communications Network, and continue supporting international partners. This increase has been offset by a reduction for anticipated management efficiency and workforce restructuring reductions.			
Counterterrorism and Counterproliferation Programs	**0**	**74,666**	**+74,666**
CTCP is a proposed new GPRA unit for FY 2014. It combines the Nuclear Counterterrorism (NCT) Program (formerly within NCTIR) with refocused enduring projects from the discontinued National Security Applications (NSA) GPRA from Weapons Activities appropriation. When compared to the FY 2012 Current level for these activities as included in the NCTIR and NSA Programs, this request represents an increase of approximately $14.4 million, but is a slight decrease from the annualized FY 2013 Annualized CR level. Funding will support accelerated experimental activities in support of non-stockpile nuclear weapons assessments supporting both the Intelligence Community and DoD's combatant command needs. These experiments improve and validate the current stockpile modeling tools ability to predict the behavior of non-stockpile threat problems. They also support the design and execution of larger full-scale experiments supporting intelligence, policy and operational needs. This increase has been offset by a			

	(Dollars in Thousands)		
	FY 2012 Current	FY 2014 Request	FY 2014 Request vs. FY 2012 Current
reduction for anticipated management efficiency and workforce restructuring reductions.			
Legacy Contractor Pensions	**55,823**	**93,703**	**+37,880**
Increase reflects changes in demographic and mortality assumptions for former University of California employees and annuitants who worked at LANL and LLNL.			
Use of Prior Year Balances	**0**	**-36,702**	**-36,702**
Rescission for contractor pay freeze	**-21,000**	**0**	**+21,000**
Total Funding Change, Defense Nuclear Nonproliferation	**2,300,950**	**2,140,142**	**-160,808**

Supporting Information

Capital Operating Expenses[a]

Capital Operating Expenses Summary

(dollars in thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Capital Operating Expenses			
Operating Expenses	1,795,497	1,868,341	1,765,097
Capital Equipment	40,062	40,944	41,845
General Plant Projects	12,637	12,916	13,200
Construction	452,754	487,729	320,000
Total, Capital Operating Expenses	**2,300,950**	**2,409,930**	**2,140,142**

Outyear Capital Operating Expenses Summary

(dollars in thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
Capital Operating Expenses					
Operating Expenses	1,765,097	1,818,670	1,904,181	1,968,237	1,956,878
Capital Equipment [b]	41,845	34,183	34,935	35,704	36,489
General Plant Projects [b]	13,200	3,563	3,642	3,723	3,804
Construction	320,000	0	0	0	0
Total, Capital Operating Expenses	**2,140,142**	**1,856,416**	**1,942,758**	**2,007,664**	**1,997,171**

[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.

[b] Schedules, dates and costs will be updated to reflect the decision resulting from the Fissile Materials Disposition assessment in the outyears.

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 2014 is $6.9 million. DOE is working to achieve economies of scale through an enhanced Working Capital Fund (WCF).

Legacy Contractor Pensions

This program provides the annual Defense Nuclear Nonproliferation share of the Department of 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.

Global Threat Reduction Initiative (GTRI)
Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Global Threat Reduction Initiative [a]			
Highly Enriched Uranium (HEU) Reactor Conversion	**139,537**	**161,000**	**162,000**
Nuclear and Radiological Material Removal			
Russian-Origin Nuclear Material Removal	145,124	102,000	78,000
U.S.-Origin Nuclear Material Removal	2,958	5,000	5,000
Gap Nuclear Material Removal	10,598	61,000	30,000
Emerging Threats Nuclear Material Removal	13,375	5,000	11,000
International Radiological Material Removal	29,878	8,000	13,000
Domestic Radiological Material Removal (Homeland Security) [b]	19,118	19,000	18,000
Subtotal, Nuclear and Radiological Material Removal	**221,051**	**200,000**	**155,000**
Nuclear and Radiological Material Protection			
BN-350 Nuclear Material Protection	5,173	0	0
International Material Protection	62,938	70,000	51,000
Domestic Material Protection (Homeland Security) [b]	69,301	70,048	56,487
Subtotal, Nuclear and Radiological Material Protection	**137,412**	**140,048**	**107,487**
International Contributions [c]	**5,453**	**0**	0
Total, Global Threat Reduction Initiative	**503,453**	**501,048**	**424,487**

[a] This represents the proposed control level.
[b] Office of Management and Budget (OMB) Homeland Security designation.
[c] International contributions for GTRI include $26,400 from Czech Republic, $3,500,000 from United Kingdom, $1,520,700 from Canada, and $406,050 from New Zealand.

Out-Year Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
Global Threat Reduction Initiative [a]					
Highly Enriched Uranium (HEU) Reactor Conversion	**162,000**	**145,000**	**146,000**	**170,000**	**213,000**
Nuclear and Radiological Material Removal					
Russian-Origin Nuclear Material Removal	78,000	51,000	45,000	40,000	40,000
U.S.-Origin Nuclear Material Removal	5,000	5,000	7,000	7,000	7,000
Gap Nuclear Material Removal	30,000	24,000	48,000	43,000	16,000
Emerging Threats Nuclear Material Removal	11,000	6,000	11,000	6,000	11,000
International Radiological Material Removal	13,000	10,000	16,000	18,000	25,000
Domestic Radiological Material Removal (Homeland Security) [b]	18,000	18,000	19,000	19,000	20,000
Subtotal, Nuclear and Radiological Material Removal	**155,000**	**114,000**	**146,000**	**133,000**	**119,000**
Nuclear and Radiological Material Protection					
BN-350 Nuclear Material Protection	0	0	0	0	0
International Material Protection	51,000	59,000	67,000	77,000	88,000
Domestic Material Protection (Homeland Security) [b]	56,487	61,329	69,696	77,928	85,620
Subtotal, Nuclear and Radiological Material Protection	**107,487**	**120,329**	**136,696**	**154,928**	**173,620**
Total, Global Threat Reduction Initiative	**424,487**	**379,329**	**428,696**	**457,928**	**505,620**

[a] This represents the proposed control level.

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

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
National Defense Authorization Act for FY 2013 (P.L. 112-239)
The Continuing Appropriations Resolution, 2013 (P.L. 112-175)

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 objective by enhancing nuclear security and reducing global nuclear dangers through efforts to improve nuclear and radiological material security.

Program Accomplishments and Milestones

Through September 2012, GTRI accelerated threat reduction efforts by: 1) converting or verifying the shutdown of a cumulative 82 research reactors from use of Highly Enriched Uranium (HEU) fuel to Low Enriched Uranium (LEU) fuel; 2) removing a cumulative 3,462 kilograms of HEU and plutonium, enough material to make over 135 nuclear bombs; 3) removing a cumulative 31,252 excess and unwanted radiological sources in the United States, and 4) protecting a cumulative 1,488 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, and March 2012 Nuclear Security Summits.

Program Planning and Management

GTRI's supports the NNSA and DOE strategic objective "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 FY 2014 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

Outyear funding levels for the GTRI program total $1,771,573,000 for FY 2015 through FY 2018. 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 and March 2012 Nuclear Security Summits. GTRI works in over 100 countries around the world to implement nuclear and radiological threat reduction in line with this goal. By the end of 2018, GTRI will have converted or verified the shutdown of 112 (56 percent) of the 200 HEU reactors, removed 5,244 (98 percent) of the estimated 5,350 kilograms of excess and vulnerable weapons-useable materials, and protected 2,393 (28 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 nuclear bombs, radiological dispersal devices 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.

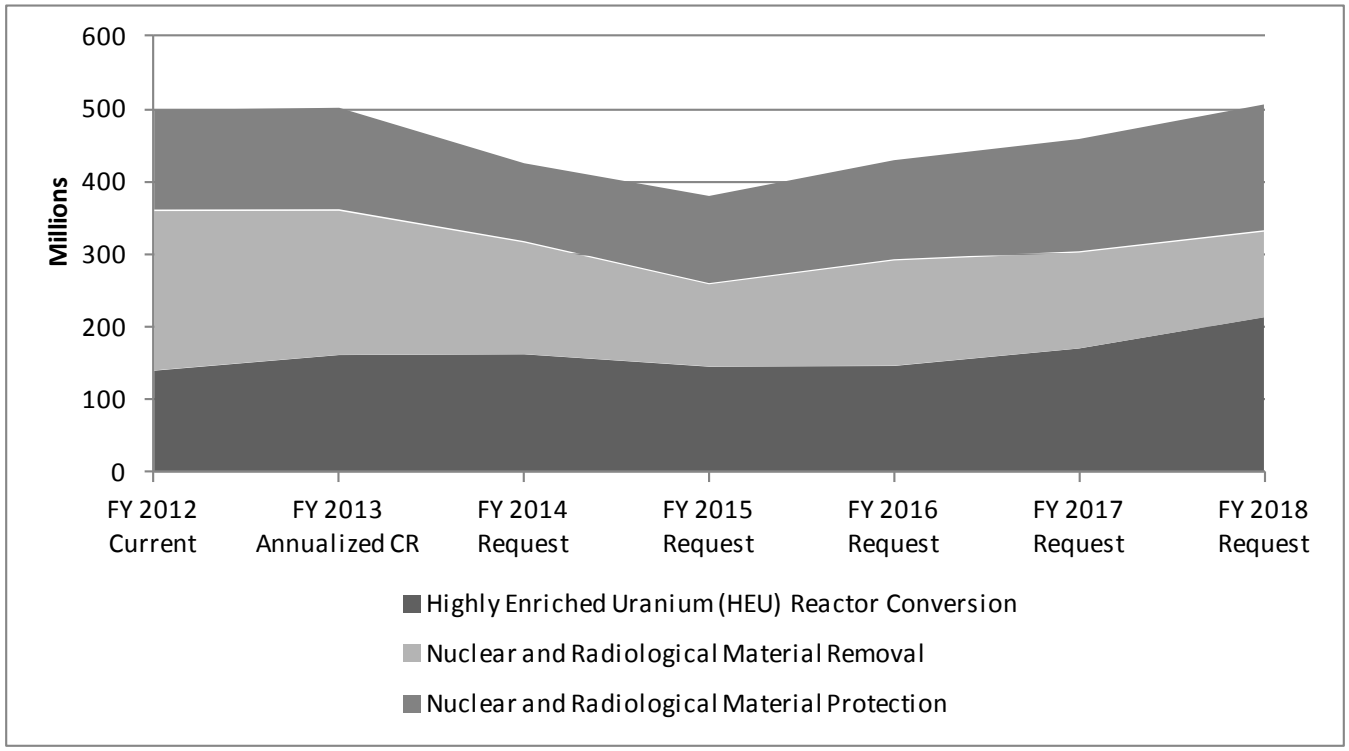
Performance Measures

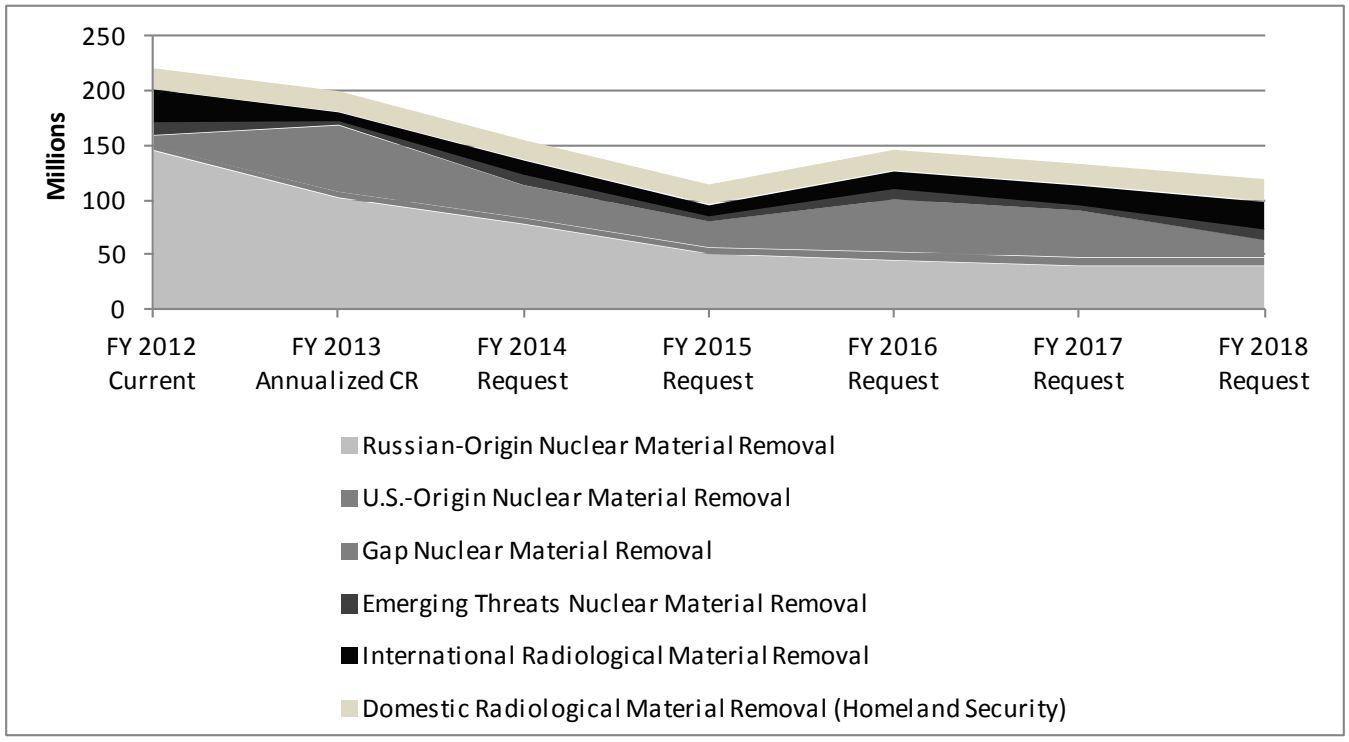
Performance Goal (Measure)	**Highly Enriched Uranium (HEU) Reactors Converted or Shutdown** - Cumulative number of HEU reactors converted or verified as shutdown prior to conversion.		
Fiscal Year	**2012**	**2013**	**2014**
Target	81 reactors	88 reactors	92 reactors
Result	**Exceeded** - 82		
Endpoint Target	By 2030, convert or verify the shutdown prior to conversion of 200 HEU reactors.		

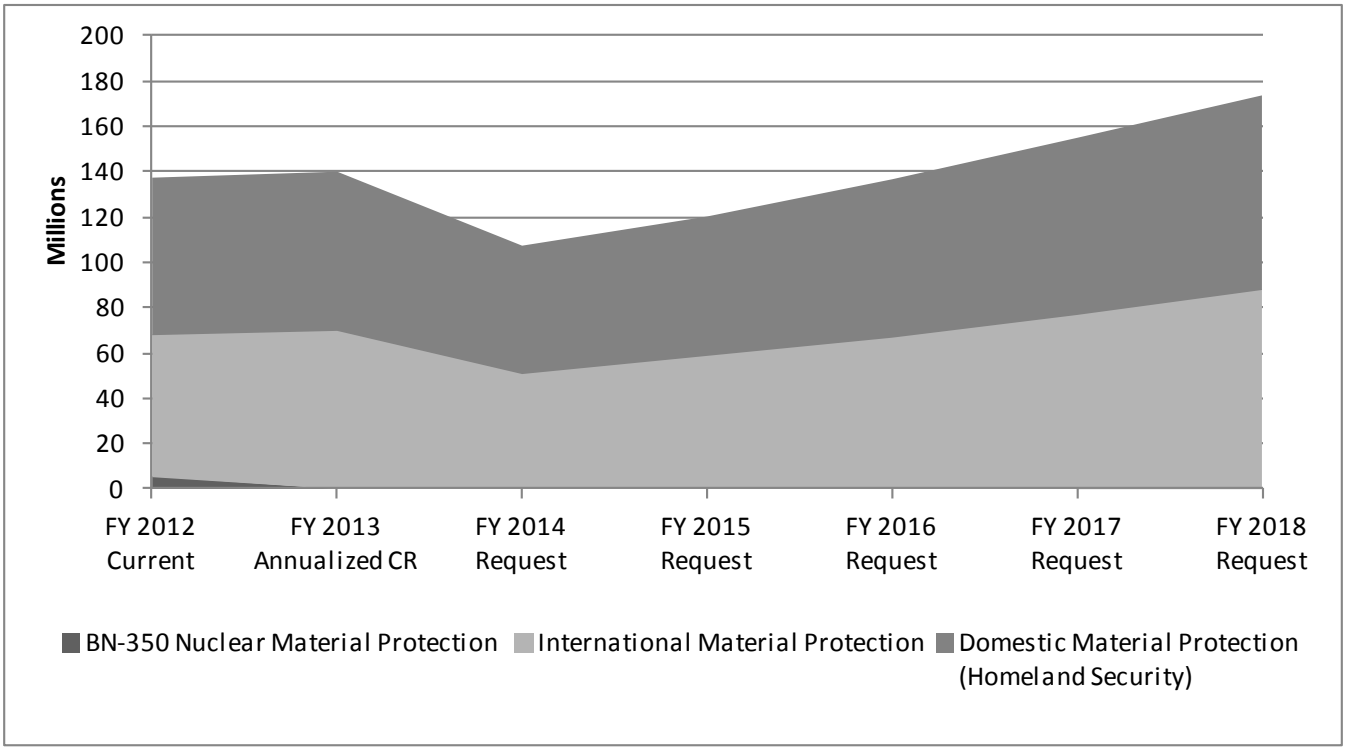
Performance Goal (Measure)	**Nuclear Material Removed** - Cumulative number of kilograms of vulnerable nuclear material (HEU and plutonium) removed or disposed.		
Fiscal Year	**2012**	**2013**	**2014**
Target	3,555 kg	3,835 kg	4,400 kg
Result	**Not Met** - 3,462		
Endpoint Target	By 2019, remove or dispose of 5,350 kilograms of vulnerable nuclear material (HEU and plutonium), enough for more than 210 nuclear bombs.		

Performance Goal (Measure)	**Nuclear and Radiological Buildings Protected** - Cumulative number of buildings with high priority nuclear and radiological materials secured.		
Fiscal Year	**2012**	**2013**	**2014**
Target	1,355 buildings	1,603 buildings*	1,708 buildings
Result	**Exceeded** - 1,488		
Endpoint Target	By 2044 protect an estimated 8,500 buildings with high-priority nuclear and radiological materials. *Note: NNSA has increased its FY 2013 target by 98 buildings above the original FY 2013 target of 1,505 cumulative buildings planned in the FY 2013 budget. NNSA is increasing this target because: 1) NNSA protected 133 buildings more than it had targeted in FY 2012 due to use of available funds originally budgeted for other activities, and 2) NNSA expects to protect 35 fewer buildings during FY 2013 than originally planned due to the increased costs needed to sustain security at the additional buildings secured in FY 2012. The net of the increase of cumulative buildings completed in 2012 and the decrease in planned scope in 2013 is 98.		

Figure 1: Relative Out-Year Funding Priorities in Defense Nuclear Nonproliferation – Global Threat Reduction Initiative






200
180
160
140
120
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80
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Millions
FY 2012 Current
FY 2013 Annualized CR
FY 2014 Request
FY 2015 Request
FY 2016 Request
FY 2017 Request
FY 2018 Request
BN-350 Nuclear Material Protection
International Material Protection
Domestic Material Protection (Homeland Security)

Explanation of Funding and/or Program Changes

	(Dollars in Thousands)		
	FY 2012 Current	FY 2014 Request	FY 2014 Request vs. FY 2012 Current
Global Threat Reduction Initiative			
Highly Enriched Uranium (HEU) Reactor Conversion	**139,537**	**162,000**	**+22,463**
Increase in funding supports the establishment of a reliable domestic production capability for the critical medical isotope Molybdenum-99 (Mo-99) without the use of HEU.			
Nuclear and Radiological Material Removal	**221,051**	**155,000**	**-66,051**
Decrease in funding for nuclear efforts is consistent with the four-year plan. Funding was requested in FY 2013 for removal efforts that will occur in early FY 2014 to meet the President's goal.			
Nuclear and Radiological Material Protection	**137,412**	**107,487**	**-29,925**
Decrease in funding is partially off-set by an estimated increase in cost-sharing with our domestic protection partners. The requested funding level reflects fewer buildings secured in FY 2014.			
International Contributions	**5,453**	**0**	**-5,453**
Decrease in funding as GTRI cannot project future international contributions.			
Total Funding Change, Global Threat Reduction Initiative	**503,453**	**424,487**	**-78,966**

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 and March 2012 Nuclear Security Summits.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• Converted, or verified as shutdown, an additional 6 HEU research reactors, bringing the cumulative total to 82. • 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. • Provided 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.	**139,537**
FY 2013	• Convert, or verify as shutdown, an additional 6 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 cannot convert with existing LEU.	**161,000**
FY 2014	• Convert, or verify as shutdown, an additional 4 reactors, for a cumulative total of 92. • Provide technical and financial support to the U.S. private sector to accelerate the establishment of a reliable domestic production capability for the critical medical isotope Mo-99 without the use of HEU. • 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.	**162,000**

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2015	• Convert, or verify as shutdown, an additional 20 reactors, for a cumulative total of 112 HEU research reactors converted or verified as shutdown by the end of FY 2018.	**145,000**
FY 2016		**146,000**
FY 2017		**170,000**
FY 2018	• 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.	**213,000**

Nuclear and Radiological Material Removal
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 and the March 2012 Nuclear Security Summits.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
Nuclear and Radiological Material Removal		
FY 2012		**221,051**
FY 2013		**200,000**
FY 2014		**155,000**
FY 2015		**114,000**
FY 2016		**146,000**
FY 2017		**133,000**
FY 2018		**119,000**
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 2012	• Returned to Russia and disposed of an additional 253 kilograms of Russian-origin HEU from facilities located in Ukraine, Uzbekistan and Poland, resulting in a cumulative total of 1,876 kilograms of HEU removed; enough material for 75 nuclear bombs. Funds were also used for preparatory activities for removals planned for 2013.	**145,124**
FY 2013	• Return to Russia and dispose of an additional 132 kilograms of Russian-origin HEU from facilities located in the Czech Republic, Hungary, Uzbekistan, and Vietnam, resulting in a cumulative total of 2,008 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	• Return to Russia and dispose of an additional 57 kilograms of Russian-origin HEU from facilities located in Belarus and Hungary for a cumulative total of 2,065 kilograms; enough material for over 80 nuclear bombs. Funds will also be used for preparatory activities for removals planned for 2015.	**78,000**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Nuclear and Radiological Material Removal		
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Return to Russia and dispose of an additional 377 kilograms of Russian-origin HEU from facilities located in Kazakhstan and Poland, for a cumulative total of 2,442 kilograms; enough material for over 95 nuclear bombs.	**51,000** **45,000** **40,000** **40,000**
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 2012	• Returned to the United States an additional 12 kilograms of U.S.-origin HEU primarily from Mexico resulting in a cumulative total of 1,262 kilograms of HEU removed, enough material for 50 nuclear bombs. Funds were also used for preparatory activities for removals planned for 2013.	**2,958**
FY 2013	• Return to the United States an additional 2 kilograms of U.S.-origin HEU resulting in a cumulative total of 1,264 kilograms of HEU removed, enough material for over 50 nuclear bombs. Funds will also be used for preparatory activities for removals planned for 2014.	**5,000**
FY 2014	• Return to the Unites States an additional 77 kilograms of U.S. Origin HEU from Japan and Canada, resulting in a cumulative total of 1,341 kilograms of HEU removed enough material for over 50 nuclear bombs.	**5,000**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Return to the United States, an additional 340 kilograms of U.S.-origin HEU, for a cumulative total of 1,681 kilograms; enough material for over 65 nuclear bombs.	**5,000** **7,000** **7,000** **7,000**
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 2012	• Removed or facilitated disposition of an additional 72 kilograms of Gap HEU and plutonium from several countries resulting in a cumulative total of 324 kilograms of HEU and plutonium removed, enough material for over 10 nuclear bombs. Funds were also used for preparatory activities for removals planned in 2013.	**10,598**
FY 2013	• Remove or facilitate the disposition of an additional 239 kilograms of Gap HEU and plutonium from several countries, resulting in a cumulative total of 563 kilograms of HEU and plutonium removed; enough material for over 20 nuclear bombs. Funds will also be used for preparatory activities for removals planned for 2014.	**61,000**
FY 2014	• Continue to remove or facilitate the disposition of an additional 431 kilograms of Gap HEU and plutonium, for a cumulative total of 994 kilograms; enough material for over 35 nuclear bombs.	**30,000**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Remove or facilitate the disposition of an additional 127 kilograms of Gap HEU and plutonium for a cumulative total of 1,121 kilograms; enough material for over 40 nuclear bombs.	**24,000** **48,000** **43,000** **16,000**

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 2012	• Conducted a mock deployment at the Nevada National Security Site. • Maintained a short-term readiness posture to deploy assets rapidly to assist in recovery of nuclear materials by conducting preventative equipment maintenance, conducting limited scope performance tests, and replacing equipment to maintain state-of-the-art technical capability.	**13,375**
FY 2013	• Ensure a short-term readiness posture to deploy assets rapidly to assist in recovery of nuclear materials by conducting preventative equipment maintenance, conducting limited scope performance tests, and replacing equipment to maintain state-of-the-art technical capability.	**5,000**
FY 2014	• Conduct a mock deployment at the Idaho National Laboratory. • Ensure a short-term readiness posture to deploy assets rapidly to assist in recovery of nuclear materials by conducting preventative equipment maintenance, conducting limited scope performance tests, and replacing equipment to maintain state-of-the-art technical capability.	**11,000**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Ensure a short-term readiness posture to deploy assets rapidly to assist in recovery of nuclear materials by conducting preventative equipment maintenance, conducting limited scope performance tests, and replacing equipment to maintain state-of-the-art technical capability. • Conduct mock deployments in FY 2016 and FY 2018.	**6,000** **11,000** **6,000** **11,000**
International Radiological Material Removal This activity supports the removal and disposal of excess or abandoned radiological materials in other countries. This includes Russian radioisotope thermoelectric generators (RTGs), U.S.-origin sealed sources in other countries, and other orphaned radiological materials.		
FY 2012	• Completed the removal of an additional 34 RTGs, resulting in a cumulative total of 430 RTGs removed by GTRI through direct funding and Russian cost-sharing. Attesting to the cooperative nature of these tasks, at the end of FY 2012, our international partners have funded the recovery of an additional cumulative 305 RTGs for a grand total of 735 of 820 RTGs completed. • Funds will also be used to recover and dispose of orphaned radioactive sources in other countries.	**29,878**
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 Russian cost-sharing. Attesting to the cooperative nature of these tasks, by the end of FY 2013, our international partners are expected to have funded the recovery of an additional cumulative 311 RTGs for a grand total of 749 of the 820 RTGs being completed. • Funds will also be used to recover and dispose of orphaned radioactive sources in other countries.	**8,000**
FY 2014	• Complete the removal of an additional 20 RTGs, resulting in a cumulative total of 458 RTGs removed by GTRI through direct funding and Russian cost-sharing. Attesting to the cooperative nature of these tasks, by the end of FY 2014, our	**13,000**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Nuclear and Radiological Material Removal		
	international partners are expected to have funded the recovery of an additional cumulative 327 RTGs for a grand total of 785 of the 820 RTGs being completed. • Funds will also be used to recover and dispose of orphaned radioactive sources in other countries.	
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• GTRI and its international partners will complete the removal of the remaining 35 RTGs resulting in all 820 RTGs removed. • Funds will also be used to recover and dispose of orphaned radioactive sources in other countries.	**10,000** **16,000** **18,000** **25,000**
Domestic Radiological Material Removal (Homeland Security) 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 2012	• Removed an additional 2,509 excess and unwanted sealed sources from locations in the United States, resulting in a cumulative total of 31,252 excess sealed sources removed.	**19,118**
FY 2013	• Remove an additional 1,900 excess and unwanted sealed sources from locations in the United States, resulting in a cumulative total of over 33,100 excess sealed sources removed.	**19,000**
FY 2014	• Remove an additional 1,800 excess and unwanted sealed sources from locations in the United States, resulting in a cumulative total of over 34,900 sources removed.	**18,000**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Remove an additional 7,500 excess and unwanted sealed sources from locations in the United States, resulting in a cumulative total of over 42,400 sources removed.	**18,000** **19,000** **19,000** **20,000**

Nuclear and Radiological Material 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 2012		**137,412**
FY 2013		**140,048**
FY 2014		**107,487**
FY 2015		**120,329**
FY 2016		**136,696**
FY 2017		**154,928**
FY 2018		**173,620**
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 minimal funds in FY 2012 supported the project close out activities and verification that all security systems were fully operational.		
FY 2012	• The BN-350 shipments were completed in November 2010; minimal funds were used to support the project close out activities and verify all security systems were fully operational.	**5,173**
FY 2013	• Project ended in FY 2012.	**0**
FY 2014	• Project ended in FY 2012.	**0**
FY 2015	• Project ended in FY 2012.	**0**
FY 2016		**0**
FY 2017		**0**
FY 2018		**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 2012	• Completed security upgrades at an additional 140 research reactor and radiological buildings, resulting in a cumulative total of 992 international buildings secured.	**62,938**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Nuclear and Radiological Material Protection		
	• Worked with the International Atomic Energy Agency (IAEA), foreign regulators, and sites to support the sustainability of previously installed security upgrades at 852 buildings.	
FY 2013	• Complete security upgrades at an additional 25 research reactor and radiological buildings, resulting in a cumulative total of 1,017 international buildings secured. • Work with the IAEA, foreign regulators, and sites to support the sustainability of previously installed security upgrades at 992 buildings.	**70,000**
FY 2014	• Complete security upgrades at an additional 25 research reactor and radiological buildings, resulting in a cumulative total of 1,042 international buildings secured. • Work with the IAEA, foreign regulators, and sites to support the sustainability of previously installed security upgrades at 1,017 buildings.	**51,000**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Complete security upgrades at an additional 290 research reactor and radiological buildings, resulting in a cumulative total of 1,332 international buildings secured. • Work with the IAEA, foreign regulators, and sites to support the sustainability of previously installed security upgrades.	**59,000** **67,000** **77,000** **88,000**
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. GTRI implements a cost-sharing approach for domestic site security enhancements.		
FY 2012	• Completed security upgrades at an additional 161 research reactor and radiological buildings, resulting in a cumulative total of 496 domestic buildings secured. • Worked with Federal, State, and local authorities and the sites to support the sustainability of previously installed security upgrades at 335 buildings.	**69,301**
FY 2013	• Complete security upgrades at an additional 90 research reactor and radiological buildings, resulting in a cumulative total of 586 domestic buildings secured. • Work with Federal, State, and local authorities and the sites to support the sustainability of previously installed security upgrades at 496 buildings.	**70,048**
FY 2014	• Complete security upgrades at an additional 80 research reactor and radiological buildings, resulting in a cumulative total of 666 domestic buildings secured. • Work with Federal, State, and local authorities and the sites to support the sustainability of previously installed security upgrades at 586 buildings.	**56,487**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Complete security upgrades at an additional 395 research reactor and radiological buildings, resulting in a cumulative total of 1,061 domestic buildings secured. • Work with Federal, State, and local authorities and the sites to support the sustainability of previously installed security upgrades.	**61,329** **69,696** **77,928** **85,620**

Supporting Information

Capital Operating Expenses[a]

Capital Operating Expenses Summary

(Dollars in Thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Capital Operating Expenses			
General Plant Projects	1,525	1,559	1,593
Capital Equipment	4,990	5,100	5,212
Total, Capital Operating Expenses	**6,515**	**6,659**	**6,805**

Outyear Capital Operating Expenses Summary

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
Capital Operating Expenses					
General Plant Projects	1,593	1,628	1,664	1,701	1,738
Capital Equipment	5,212	5,327	5,444	5,564	5,686
Total, Capital Operating Expenses	**6,805**	**6,955**	**7,108**	**7,265**	**7,424**

[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.

Defense Nuclear Nonproliferation Research and Development (DNN R&D)
Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Defense Nuclear Nonproliferation R&D [a]			
Proliferation Detection (PD)	216,790	223,510	230,977
Homeland Security-Related Proliferation Detection [Non-Add]	[50,000]	[50,000]	[50,000]
Nuclear Detonation Detection (NDD)	131,115	132,807	157,861
Domestic Uranium Enrichment RD&D	0	100,000	0
Total, Defense Nuclear Nonproliferation R&D [b]	**347,905**	**456,317**	**388,838**

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

- FY 2012 Transferred: SBIR: $5,504; STTR: $741
- FY 2013 Annualized CR: SBIR: $8,366; STTR: $1,085
- FY 2014 Request: SBIR: $6,160; STTR: $880

Out-Year Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
Defense Nuclear Nonproliferation R&D [a]					
Proliferation Detection (PD)	230,977	231,616	240,104	252,419	259,133
Homeland Security-Related Proliferation Detection [Non-Add]	[50,000]	[50,000]	[50,000]	[50,000]	[50,000]
Nuclear Detonation Detection (NDD)	157,861	159,384	165,271	178,484	182,909
Domestic Uranium Enrichment RD&D	0	0	0	0	0
Total, Defense Nuclear Nonproliferation R&D [b]	**388,838**	**391,000**	**405,375**	**430,903**	**442,042**

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

- FY 2014 Request: SBIR: $6,160; STTR: $880
- FY 2015 Request: SBIR: $6,403; STTR: $883
- FY 2016 Request: SBIR: $6,866; STTR: $1,030
- FY 2017 Request: SBIR: $7,723; STTR: $1,086
- FY 2018 Request: SBIR: $7,926; STTR: $1,115

[a] This represents the proposed control level.
[b] Formerly Nonproliferation and Verification R&D.

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
National Defense Authorization Act for FY 2013 (P.L. 112-239)
The Continuing Appropriations Resolution, 2013 (P.L. 112-175)

Overview

In support of the Secretary's Strategic Goal to enhance nuclear security through defense, nonproliferation, and environmental efforts, the Defense Nuclear Nonproliferation Research and Development (DNN R&D) program (formerly Nonproliferation and Verification Research and Development) drives the innovation of unilateral and multi-lateral technical capabilities to detect, identify, and characterize: 1) foreign nuclear weapons programs; 2) illicit diversion of special nuclear materials, and 3) foreign nuclear detonations. DNN R&D changed its name to reflect a stronger alignment with its mission space, as expressed in both the NNSA and DOE strategic plans, and more clearly communicate the scope of its R&D activities.

To meet national and Departmental nuclear security requirements, DNN R&D leverages the unique facilities and scientific skills of the NNSA nuclear security enterprise, other DOE national laboratories, academia, and industry for the performance of research, conduct of technology demonstrations, and development of prototypes for integration into operational systems.

Program Accomplishments and Milestones

In FY 2012, DNN R&D accomplished five significant milestones in program management and program development. These were:

1) Established and demonstrated a noble gas migration experimental test bed and developed related inspection technologies to develop nuclear test verification and monitoring capabilities;
2) Established and demonstrated a warhead chain-of-custody test bed to develop technologies and concepts of operations for arms reduction monitoring and transparency initiatives;
3) Conducted the third experiment of the source physics test bed to develop new capabilities to detect and identify extremely low nuclear detonations at increasing levels of confidence;
4) Conducted the first three proliferation detection experiments within the newly established joint research and experimental test bed with the Defense Threat Reduction Agency, and
5) Jointly with DoD, conducted a major review of the nation's space-based nuclear detonation detection system.

Program Planning and Management

DNN R&D supports the NNSA and DOE strategic objective "Secure Our Nation" and "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, 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.

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 for the least cost. Our operating principles are: Maintain a Disciplined, Robust, and Transparent approach to R&D Management; Engage 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

Outyear funding levels for the R&D program total $1,669,320,000 for FY 2015 through FY 2018. This funding will support DNN R&D in leading the detection capabilities that address current and projected threats to national security posed by the proliferation of nuclear weapons and diversion of special nuclear material. The funding contributes substantially to the success of international nuclear treaties and agreements, which depend, in part, upon having the technical means and policy context to support negotiations and detect non-compliance. Additionally, approximately one-third of this

funding is for production of sensors to support the nation's operational nuclear detonation detection and reporting infrastructure through joint programs with the DoD. Finally, this request does not contain funding for the Domestic Uranium Enrichment RD&D Project, though this request does ask for authority to transfer up to $48 million from other Department of Energy funds to this project.

Program Goals and Funding

DNN 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 meeting not only U.S.-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 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.

Performance Measures

Performance Goal (Measure)	**Plutonium Production Detection** - Cumulative percentage of progress toward demonstrating the next generation of technologies and methods to detect Plutonium production activities. (Progress is measured against the baseline criteria and milestones published in the "FY 2006 R&D Requirements Document".)		
Fiscal Year	**2012**	**2013**	**2014**
Target	75% of progress	90% of progress	95% of progress
Result	**Met** - 75		
Endpoint Target	By the end of FY 2015, demonstrate the next generation of technologies and methods to detect Plutonium production activities.		

Performance Goal (Measure)	**Nuclear Detonation Detection** - Annual index that summarizes the status of all NNSA nuclear detonation detection R&D deliveries that improve the nation's ability to detect nuclear detonations.		
Fiscal Year	**2012**	**2013**	**2014**
Target	90% index	90% index	90% index
Result	**Met** - 90		
Endpoint Target	Annually achieve timely delivery of NNSA nuclear detonation detection products (90% target reflects good on-time delivery. Index considers factors beyond NNSA's control and impact on customer schedules.)		

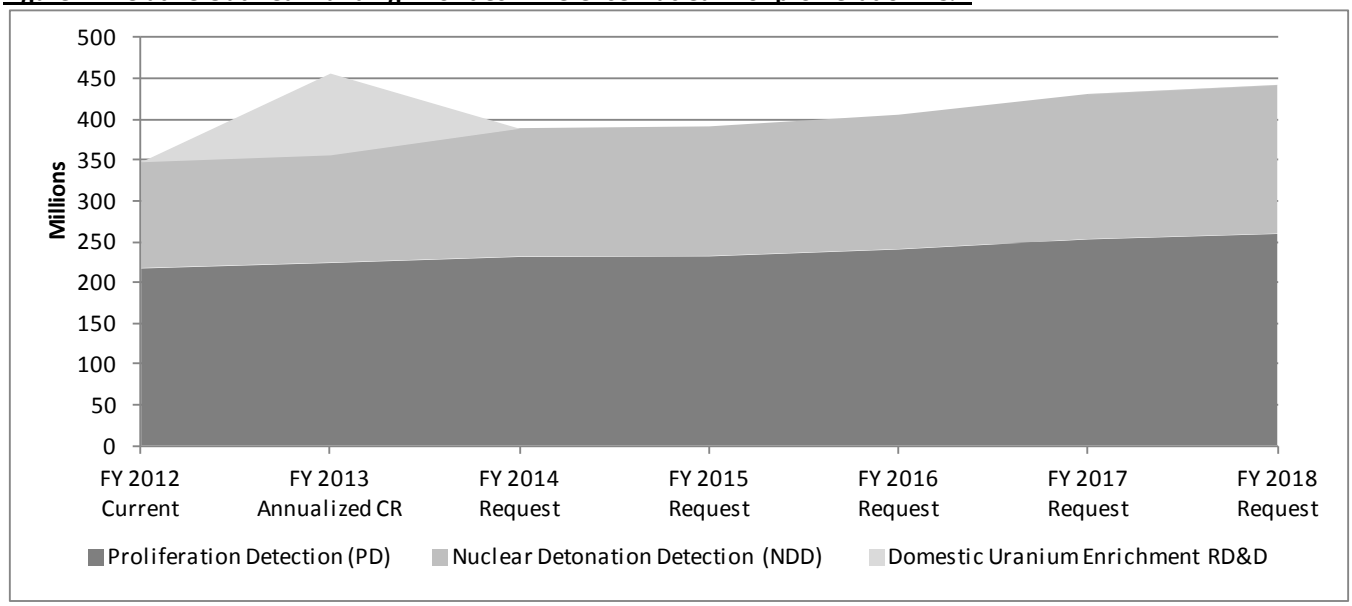
Performance Goal (Measure)	**Uranium-235 Production Detection** - Cumulative percentage of progress toward demonstrating the next generation of technologies and methods to detect Uranium-235 Enrichment activities. (Progress is measured against the baseline criteria and milestones published in the "FY 2006 R&D Requirements Document".)		
Fiscal Year	**2012**	**2013**	**2014**
Target	60% of progress	75% of progress	90% of progress
Result	**Met** - 60		
Endpoint Target	By the end of FY 2016, demonstrate the next generation of technologies and methods to detect Uranium-235 production activities.		

Performance Goal (Measure)	**Nuclear Weapons and Material Security** - The cumulative percentage of progress towards demonstrating improvements in Special Nuclear Material detection, warhead monitoring, chain-of-custody monitoring, safeguards, and characterization capabilities.		
Fiscal Year	**2012**	**2013**	**2014**
Target	N/A	N/A	20% progress
Result			
Endpoint Target	By the end of FY 2018, achieve 100% cumulative progress toward demonstrating new capabilities for warhead monitoring, warhead chain-of-custody, Special Nuclear Material movement detection, and nuclear safeguards.		

Performance Goal (Measure)	**Nuclear Weaponization and Material Production Detection** - Cumulative percentage of progress toward demonstrating improvements in detection and characterization capabilities of nuclear weapons production activities.		
Fiscal Year	**2012**	**2013**	**2014**
Target	N/A	N/A	20% progress
Result			
Endpoint Target	By the end of FY 2018, achieve 100% cumulative progress toward demonstrating new capabilities detecting uranium and plutonium production and nuclear weaponization processes.		

Performance Goal (Measure)	**Special Nuclear Material Detection** - Cumulative percentage of progress toward demonstrating the next generation of technologies and methods to detect Special Nuclear Material movement. (Progress is measured against the baseline criteria and milestones published in the "FY 2006 R&D Requirements Document".)		
Fiscal Year	**2012**	**2013**	**2014**
Target	90% of progress	100% of progress	N/A
Result	**Met** - 90		
Endpoint Target	By the end of FY 2013, demonstrate the next generation of technologies and methods to detect Special Nuclear Material movement.		

Figure 1: Relative Out-Year Funding Priorities in Defense Nuclear Nonproliferation R&D



Explanation of Funding and/or Program Changes

	(Dollars in Thousands)		
	FY 2012 Current	FY 2014 Request	FY 2014 Request vs. FY 2012 Current
Defense Nuclear Nonproliferation Research and Development			
Proliferation Detection	**216,790**	**230,977**	**+14,187**
The increase allows Proliferation Detection (PD) to achieve annual milestones for meeting the R&D goals to reduce nuclear danger through nuclear nonproliferation, test monitoring, arms control, and threat reduction as identified in the Nuclear Posture Review, as contained in Section 8115(a) of Public Law 111-118, and as described in the 2011 NNSA Strategic Plan. The increase allows PD to enhance effectiveness of the National test bed field experiments critical for nuclear nonproliferation, warhead monitoring and material accounting, and test monitoring.			
Nuclear Detonation Detection	**131,115**	**157,861**	**+26,746**
The increase permits production of nuclear detection satellite payloads at a rate in accordance with the delivery schedule negotiated with the U.S. Air Force (USAF), and reflects NNSA's assumption of sensor-satellite integration costs that the Department of Defense formerly paid. These sensor payloads provide 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). These funds also support development of seismic and radionuclide nuclear detonation detection capabilities and nuclear forensics.			
Total Funding Change, Defense Nuclear Nonproliferation Research and Development	**347,905**	**388,838**	**+40,933**

Proliferation Detection
Overview

The Proliferation Detection (PD) subprogram develops technologies to detect foreign nuclear weapons programs; supports nuclear arms control treaty verification and monitoring for compliance, and supports national nuclear security. The PD efforts are aligned along three functional areas: (1) Nuclear Weaponization and Material Production Detection efforts are targeted towards the detection and characterization of foreign weapons program activities; (2) Nuclear Weapons and Material Security supports the development of nuclear security and nuclear arms control treaty monitoring and verification tools and applications, and supports operational interdiction and nuclear security efforts across NNSA; and (3) Nonproliferation Enabling Capabilities supports a broad base to bring new, cross-cutting technologies to multiuse applications in NNSA and the interagency community. This includes the National Center for Nuclear Security (NCNS) and a university research program. The NCNS is an integrating function for DNN R&D 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. PD's university program includes directed university research and the Nuclear Science and Security Consortium (NSSC), which supports nuclear nonproliferation-related research by university graduate and post-graduate technical talent and efficiently links university and laboratory research in nonproliferation technology development.

Sequence

Benefits

- Provides technical expertise and leadership toward the development of next-generation nuclear sensor capabilities to detect foreign nuclear materials and weapons production.
- Develops capabilities to detect, locate, and analyze Special Nuclear Material (SNM) movement and diversion, and develops safeguards and source replacement technologies that inhibit proliferation of materials.
- Develops capabilities to monitor foreign nuclear weapons program activities and to verify foreign compliance with nuclear security and arms control treaties.
- 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 2012	• **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. Began operation of sensor development test bed. • **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 (SNM), conducted the research necessary to demonstrate next-generation detection capabilities for warhead monitoring, SNM detection, chain-of-custody, and the illicit diversion of SNM. Established warhead measurement campaign for developing potential future transparency regime.	**216,790**

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** - conducted operational demonstrations and research that supported U.S. capabilities to monitor and verify international treaties and cooperative agreements. Established three additional test beds to focus research and development in chain-of-custody, gas migration physics, and forensics. • **University Program** - supported university research that complements laboratory research and research fellowships in nuclear science and security. First full year of support for National Science and Security Consortium (NSSC) fellows.	
FY 2013	• **Fissile Material Production and Weapons Development Detection** - provide 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 fourth operational cycle of the sensor development test bed. • **Radiation Sensing and Warhead Monitoring** - provide technical expertise and leadership in addressing the most challenging problems related to detection, localization, and characterization of Special Nuclear Material (SNM), and 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 technologies for SNM movement detection. Conclude first collection phase for warhead measurement campaign with the Office of Defense Programs. • **Nonproliferation Enabling Technologies** - develop and validate 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** - conduct operational demonstrations and research that support U.S. capabilities to monitor and verify international treaties and cooperative agreements. Expand field experimentation and associated laboratory supporting research, especially in nuclear forensics and high explosive testing detection. • **University Program** - support 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. Initiate assessment planning for measuring how well the program is meeting its goals and objectives.	**223,510**
FY 2014	• **Nuclear Weaponization and Material Production 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 first phase of operational testing of expanded sensor development test bed.	**230,977**

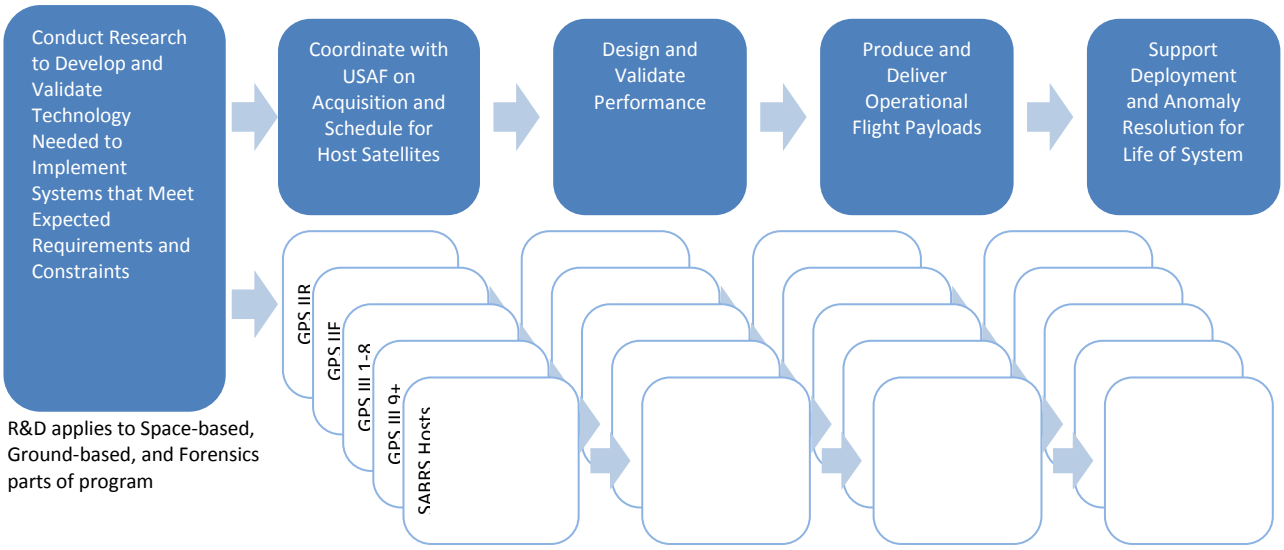
Fiscal Year	Activity	Funding (Dollars in Thousands)
	• **Nuclear Weapons and Material Security** - provides technical expertise and leadership in addressing the most challenging problems related to detection, localization, and characterization of (SNM); conducts the research necessary to demonstrate next-generation detection capabilities for warhead monitoring, SNM detection, warhead chain-of-custody, safeguards, radiological source replacement, and the illicit diversion of SNM. Demonstrate infrastructure backbone and CONOPS for meeting 2016 NNSA Strategic Plan goal to demonstrate warhead monitoring and chain-of-custody capabilities. • **Nonproliferation Enabling Capabilities** - 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. This includes the National Center for Nuclear Security (NCNS), which conducts operational demonstrations and research that supports U.S. capabilities to monitor and verify international treaties and cooperative agreements. Within NCNS, conclude research at the first source physics experiment test bed and move the test bed to a more complex geology, in accordance with the long-term test plan, and R&D-centric experiments that expand developments in arms control chain-of-custody, test monitoring gas migration physics, and forensics will continue. Complete initial long-term planning of R&D spiral for weapons development detection. Nonproliferation Enabling Capabilities also includes PD's University Program, which supports university research that complements applied national laboratory research and supports research fellowships in nuclear science and security. Third full year of support for National Science and Security Consortium (NSSC) research fellows will continue assessment of how program is meeting goals and program objectives.	
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• **Nuclear Weaponization and Material Production Detection** - provides technical expertise and leadership in the development of next generation nuclear detection technologies, with focus on advanced technologies and approaches for detecting foreign proliferant activities, including nuclear material and weapon production facilities, equipment, and processes. Provides for advanced sensor and algorithm development around operational testing at the sensor development test bed. Achieve (2015) NNSA Strategic Plan goals to demonstrate technologies and methods for plutonium production detection. • **Nuclear Weapons and Material Security** - provides technical expertise and leadership in addressing the most challenging problems related to detection, localization, and characterization of Special Nuclear Material (SNM), and conducts the research necessary to demonstrate next-generation detection capabilities for warhead monitoring, SNM detection, chain-of-custody, safeguards, radiological source replacement, and the illicit diversion of SNM. Implement and test stand-alone capability and demonstrate feasibility on way to achieving 2016 NNSA Strategic Plan goal to demonstrate initial warhead monitoring and end-to-end chain-of-custody capabilities in support of new arms control commitments. Demonstrate feasibility on way to achieving 2016 NNSA Strategic Plan initiative to demonstrate remote monitoring capabilities for reactor operations.	**231,616** **240,104** **252,419** **259,133**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	• **Nonproliferation Enabling Capabilities** - 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. This includes the National Center for Nuclear Security (NCNS), which conducts operational demonstrations and research that supports U.S. capabilities to monitor and verify international treaties and cooperative agreements. Within NCNS, will begin nuclear test monitoring experimentation for seismic source physics in the second and third test beds, of increasingly complex geologies, as per long-term test plan; and ramp up high explosive testing campaign, as per the 2013 roadmapping documents. Nonproliferation Enabling Capabilities also includes PD's University Program, which supports university research that complements applied national laboratory research and supports research fellowships in nuclear science and security. Conclude assessment of the university program and the final year under the current Cooperative Agreement of the National Science and Security Consortium (NSSC) and solicit proposals for follow-on consortia, if required.	

Nuclear Detonation Detection
Overview

The Nuclear Detonation Detection (NDD) subprogram develops and builds space sensors for the nation's operational nuclear test treaty monitoring and Integrated Threat Warning/Attack Assessment capabilities; conducts R&D to advance analytic forensic capabilities related to nuclear detonations; and produces and updates the regional geophysical datasets and analytical understanding to enable operation of the nation's ground-based nuclear detonation monitoring networks.

Sequence



Benefits

- Designs, builds, and supports the satellite sensors that constitute 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 detonation detection technologies.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• **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 GBDs IIF #11 and III #1. Accelerated delivery of GBD IIF #12 to conform to Air Force schedules. Completed System Requirements Review (SRR). Conducted SABRS #2 Critical Design review (CDR) to conform to Air Force schedules. Supported launch and initialization of GBD IIF #2.	**131,115**

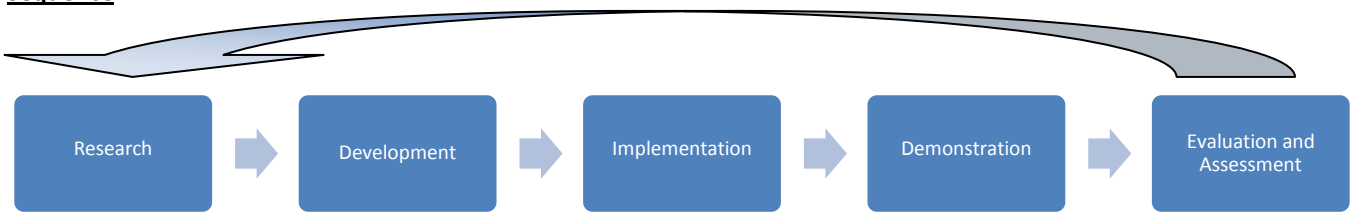
Fiscal Year	Activity	Funding (Dollars in Thousands)
	• **Nuclear Forensics Research** - conducted research, technology development, and related science to improve post-detonation technical nuclear forensic capabilities. Initiated forensics collaboration with NCNS effort in Proliferation Detection. • **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. Supported tech-transfer of Regional Seismic Travel Time code to both National Data Center and international monitoring partners.	
FY 2013	• **Surface, Atmospheric, and Space Detonation Detection (using Satellite-Based systems)** - builds the GBD and 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. Support design and payload delivery milestones and launch in coordination with host satellite schedules. • **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.	**132,807**
FY 2014	• **Surface, Atmospheric, and Space Detonation Detection (using Satellite-Based systems)** - builds the GBD and SABRS payloads for detecting and reporting nuclear detonations. Supports the integration, initialization, and operation of these payloads. Supports the research, development, and engineering efforts to prepare next generation sensors. Anticipates delivery of payloads at a rate in accordance with the delivery schedule negotiated with the USAF, will conduct necessary engineering reviews to support subsequent satellite blocks for GBDs and SABRS payloads. • **Nuclear Forensics Research** - conducts research, technology development, and related science to improve pre- and post-detonation technical nuclear forensic capabilities. Develop and test decision-making tools to aid in nuclear forensics evaluation, collection, and analyses. • **Underground, Underwater, and Atmospheric Detonation Detection (using Ground-Based systems)** - provides research products, with appropriate testing, demonstration, verification, and technical support for use in the U.S. National Data Center and U.S. Atomic Energy Detection System. Integrate products from NCNS source physics experiments and other field and laboratory test campaigns into methods to improve event discrimination.	**157,861**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• **Surface, Atmospheric, and Space Detonation Detection (using Satellite-Based systems)** - Delivers GBD nuclear detonation detection payloads for Global Positioning System (GPS) block III satellites in accordance with negotiated schedule with USAF. Support payload-side technical integration, pre-launch and on-orbit testing activities for previously delivered payloads in accordance with host satellite schedules. Continues development of treaty monitoring	**159,384** **165,271** **178,484** **182,909**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	focused payload and support integration onto its designated satellite. Continues required engineering development work and satellite interface coordination to support payload design update for subsequent satellite blocks for GBDs and treaty monitoring focused payloads. • **Nuclear Forensics Research** - conducts research, technology development, and related science to improve pre- and post-detonation technical nuclear forensic capabilities. Develop and test technical means to assess recent origins of bulk samples of special nuclear material. • **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. Continue to integrate products of NCNS source physics experiments and other field and laboratory test campaigns into methods to improve event discrimination. Additionally, develop analytical improvements that enable sustained level of performance with reduced operator time.	

Domestic Uranium Enrichment RD&D
Overview

The Domestic Uranium Enrichment RD&D project increases understanding of uranium enrichment technologies for enhanced efficiency. The project supports development of a domestic enrichment capability, and is focused on meeting the following performance objectives by December 2013: overall plant availability; consistency in manufacturing; material stress, and redundancy and resiliency in plant support systems. New budget authority for the project is not requested in FY 2014, but authority to transfer up to $48 million to the project from other funds in the Department of Energy is requested. This request for transfer authority is due to the possibility that appropriated funds and planned barter in FY 2013 may be below the Department of Energy's planned contributions needed to meet the project's objectives.

Sequence



Benefits

- Allows the U.S. 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 domestic LEU for meeting the continuing, recurring requirement to maintain a nuclear deterrent.
- 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 U.S. Government for the foreseeable future.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
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.	**100,000**
FY 2014	No funding requested, but authority to transfer up to $48 million to the project from other Department of Energy funds is requested.	**0**
FY 2015	No funding requested.	**0**
FY 2016		**0**
FY 2017		**0**
FY 2018		**0**

Supporting Information

Capital Operating Expenses [a]

Capital Operating Expenses Summary

(Dollars in Thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Capital Operating Expenses			
General Plant Projects	0	0	0
Capital Equipment	27,032	27,627	28,235
Total, Capital Operating Expenses	**27,032**	**27,627**	**28,235**

Outyear Capital Operating Expenses Summary

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
Capital Operating Expenses					
General Plant Projects	0	0	0	0	0
Capital Equipment	28,235	28,856	29,491	30,140	30,803
Total, Capital Operating Expenses	**28,235**	**28,856**	**29,491**	**30,140**	**30,803**

[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.

Nonproliferation and International Security
Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Nonproliferation and International Security [a]			
Nuclear Verification	39,969	40,213	27,911
Nuclear Controls	47,444	47,735	45,699
Nuclear Safeguards and Security	54,897	55,233	59,000
Nonproliferation Policy	11,284	11,353	9,065
Total, Nonproliferaiton and International Security	**153,594**	**154,534**	**141,675**

Out-Year Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
Nonproliferation and International Security [a]					
Nuclear Verification	27,911	27,119	26,900	28,500	29,600
Nuclear Controls	45,699	49,375	50,850	52,883	56,450
Nuclear Safeguards and Security	59,000	61,273	61,868	64,568	69,468
Nonproliferation Policy	9,065	9,655	10,150	10,850	12,100
Total, Nonproliferaiton and International Security	**141,675**	**147,422**	**149,768**	**156,801**	**167,618**

[a] This represents the proposed control level.

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
National Defense Authorization Act for FY 2013 (P.L. 112-239)
The Continuing Appropriations Resolution, 2013 (P.L. 112-175)

Overview

The Nonproliferation and International Security (NIS) program directly contributes to meeting the DOE strategic goal to "Secure 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 WMD (excludes chemical and biological), 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 and arms control 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.

Program Accomplishments and Milestones

In the prior appropriation year, NIS programs accomplished a number of significant milestones.

Highlights include: (1) led U.S. Government outreach efforts to implement revised international guidelines on the physical protection of nuclear material and nuclear facilities (International Atomic Energy Agency INFCIRC/225/Rev.5); (2) delivered five safeguards technologies to international partners for use in international safeguards systems; (3) trained over 400 foreign nationals on safeguards methods, practices, and technologies; (4) conducted 5,700 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; (5) trained over 2,500 frontline enforcement officers, licensing officials, and manufacturers in preventing proliferators from acquiring WMD-sensitive goods; (6) negotiated implementing agreements for the New START Treaty during sessions of the treaty's Bilateral Consultative Commission with the Russian Federation; (7) monitored the down-blending of 30 metric tons of Russian weapons-origin highly enriched uranium (HEU) under the U.S.-Russia HEU Transparency Program and conducted 24 annual Special Monitoring Visits to Russian HEU processing facilities under the U.S.-Russia HEU Transparency Program; (8) further developed and maintained existing capabilities to verify declarations about key elements of the nuclear fuel cycle in countries of concern; (9) strengthened Nuclear Suppliers Group (NSG) guidelines restricting the transfer of sensitive enrichment and reprocessing technology, and (10) published for public notice and comment a draft revision to the technology control regulations in 10 CFR Part 810.

Program Planning and Management

NIS's targets and goals are aligned to NNSA and DOE's strategic objective "Secure Our Nation". NIS measures are compiled and provided in the FY 2014 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. NIS 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 (SMART) facilitates communication and project oversight.

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. To accomplish its mission to prevent and counter the proliferation or use of 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 leverage 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 of NIS's direct control strongly impact the overall achievement of the program's strategic goals. 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

Outyear funding levels for NIS total $621,609,000 for FY 2015 through FY 2018. The NIS will place increasing emphasis on strengthening IAEA safeguards, revitalizing the U.S. technical and human capital base that supports them and ensuring the application of physical protection norms and best practices internationally. The NIS will also support the applied development and evaluation of negotiating positions for future nuclear reduction treaties and technologies to support U.S. arms control and nonproliferation initiatives, including advanced radiation measurement technologies that could be applied under the New START Treaty, as well as other technologies for future treaty verification, transparency, and nonproliferation purposes. Finally, the NIS funding profile 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 statutory export control and safeguards requirements; implement nuclear arms reduction and associated agreements; strengthen international nonproliferation agreements and standards; encourage global adherence to and implementation of international nonproliferation requirements, and support high-priority diplomatic initiatives.

Program Goals and Funding

The NIS directly contributes to meeting the DOE strategic goal to "Secure 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.

Performance Measures

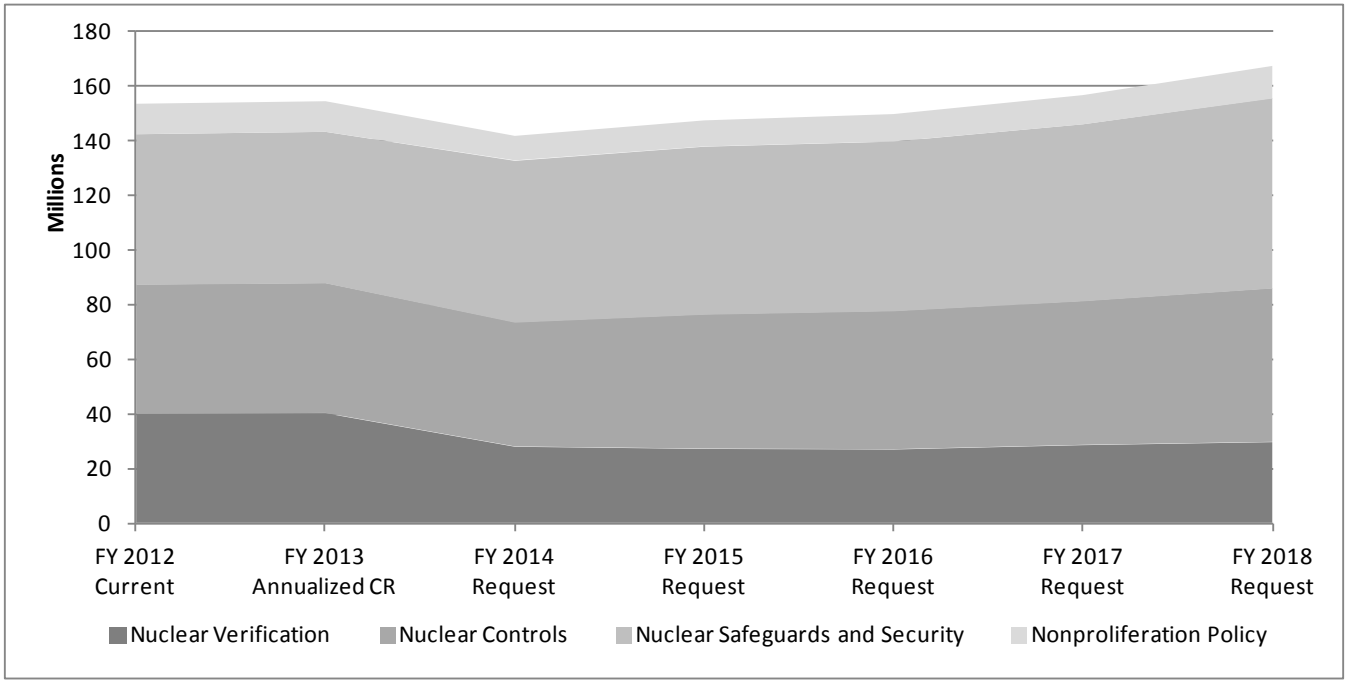
Performance Goal (Measure)	**International Nonproliferation Export Control Program** - Cumulative number of countries where International Nonproliferation Export Control Program (INECP) is engaged that have export control systems that meet critical requirements.		
Fiscal Year	**2012**	**2013**	**2014**
Target	29 countries	31 countries	34 countries
Result	**Met** - 29		
Endpoint Target	By the end of FY 2020, 38 of 41 countries where INECP is engaged have export control systems that meet critical requirements, defined as having: (1) control lists consistent with the WMD regimes; (2) initiated outreach to producers of WMD-related commodities; (3) developed links between technical experts and license reviewers and front-line enforcement officers; and (4) begun customization of WMD, Commodity Identification Training (WMD CIT) materials and technical guides.		

Performance Goal (Measure)	**Russian Weapons-Usable Highly Enriched Uranium (HEU)** - Cumulative metric tons of Russian weapons-usable HEU that U.S. experts have confirmed as permanently eliminated from the Russian stockpile under the HEU Purchase Agreement.		
Fiscal Year	**2012**	**2013**	**2014**
Target	462 metric tons	492 metric tons	500 metric tons
Result	**Exceeded** - 463		
Endpoint Target	By the end of calendar year 2013 (1st quarter FY 2014), confirm that 500 metric tons of weapons-usable HEU have been permanently eliminated from the Russian stockpile.		

Performance Goal (Measure)	**Safeguards Systems** - Annual number of safeguards systems deployed and used in international regimes and other countries that address an identified safeguards deficiency.		
Fiscal Year	**2012**	**2013**	**2014**
Target	5 systems	5 systems	5 systems
Result	**Met** - 5		
Endpoint Target	By the end of FY 2015, 38 technologies are deployed and used in international regimes and other countries that address an identified safeguards deficiency.		

Performance Goal (Measure)	**Reduce Nuclear Terrorism Threat** - In order to reduce the threat of nuclear terrorism, evaluate the physical security of U.S. obligated nuclear material located at foreign facilities by conducting bilateral physical security assessment reviews designed to evaluate the adequacy of existing security measures and provide recommendations for enhancing security if necessary.		
Fiscal Year	**2012**	**2013**	**2014**
Target	N/A	N/A	6 assessments
Result			
Endpoint Target	Annually review the physical security of U.S. obligated nuclear material located at foreign facilities in order to reduce the threat of nuclear terrorism.		

Figure 1: Relative Out-Year Funding Priorities in Defense Nuclear Nonproliferation – Nonproliferation and International Security



Explanation of Funding and/or Program Changes

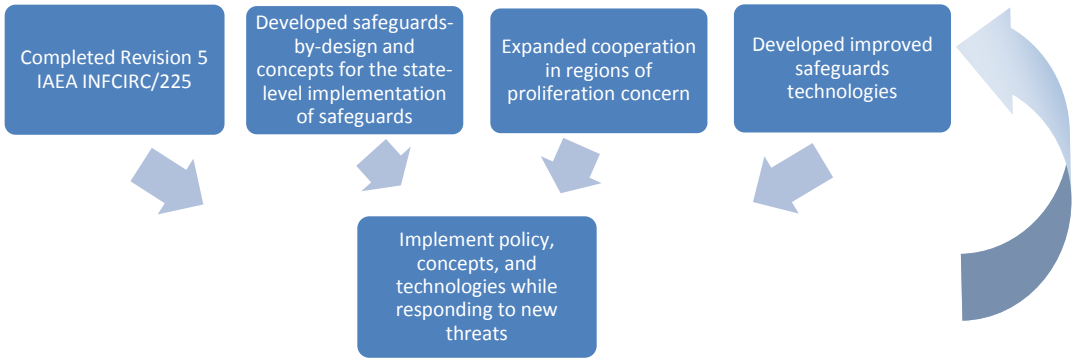
	(Dollars in Thousands)		
	FY 2012 Current	FY 2014 Request	FY 2014 Request vs. FY 2012 Current
Nonproliferation and International Security			
Nuclear Safeguards and Security	**54,897**	**59,000**	**+4,103**
The funding increase is due primarily to an increase in the number of partnerships with international entities and the IAEA to ensure that states are implementing nuclear safeguards and security measures; additional bilateral physical protection assessments at facilities overseas containing U.S.-obligated nuclear material; and additional technology development and deployment related to spent fuel non-destructive assay and enhanced in-field detection capabilities.			
Nuclear Controls	**47,444**	**45,699**	**-1,745**
The funding decrease is due primarily to a reduction in activity associated with the transition to the Global Security through Science Partnerships program and the lead-time required for the development of new engagement mechanisms and partnering opportunities.			
Nuclear Verification	**39,969**	**27,911**	**-12,058**
The funding decrease results primarily from a reduction in HEU Transparency activities as the HEU Purchase Agreement nears completion.			
Nonproliferation Policy	**11,284**	**9,065**	**-2,219**
The funding decrease results from a reduction in the number of priority policy studies undertaken and reduced support to the Track II South Asia Missile Elimination program.			
Total Funding Change, Nonproliferation and International Security	**153,594**	**141,675**	**-11,919**

Nuclear Safeguards and Security
Overview

The Nuclear Safeguards and Security (NSS) subprogram strengthens the nuclear nonproliferation and security regimes. NSS manages the Next Generation Safeguards Initiative (NGSI), oversees support for the U.S. Support Program (USSP) to IAEA Safeguards, collaborates with the IAEA and other partners to enhance the application of safeguards and physical protection norms and best practices, assesses the physical protection of U.S.-obligated nuclear material overseas, and oversees implementation of U.S. Additional Protocol (AP) and Voluntary Offer Agreement (VOA) Safeguards activities at DOE/NNSA sites and facilities.

This subprogram consists of four activities: Safeguards Policy; Safeguards Engagement; Safeguards Technology Development, and International Nuclear Security.

Sequence



Benefits

- Strengthens IAEA capabilities and partner states' ability to meet safeguards obligations, thereby assuring the international community that states are not diverting nuclear material from peaceful activities to nuclear weapons programs.
- Ensures the security of U.S.-obligated nuclear material at facilities abroad and helps partner states to protect their own nuclear material and facilities against theft and sabotage through implementation of training on physical protection norms and best practices.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
Nuclear Safeguards and Security		
FY 2012		**54,897**
FY 2013		**55,233**
FY 2014		**59,000**
FY 2015		**61,273**
FY 2016		**61,868**
FY 2017		**64,568**
FY 2018		**69,468**
Safeguards Policy		
FY 2012	• Investigated new safeguards concepts and approaches, including safeguards at gas centrifuge enrichment plants, and developed safeguards by design to improve IAEA efficiency and effectiveness, including supporting the IAEA's transition to information-driven safeguards.	**15,750**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Nuclear Safeguards and Security		
	• Supported 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.	
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.	**15,846**
FY 2014	• Develop concepts and approaches for the application of safeguards at gas centrifuge enrichment plants and demonstrate proof of concept for global monitoring of uranium hexafluoride (UF6) cylinders. • Implement U.S.-IAEA safeguards obligations at all DOE facilities. • Support/lead the IAEA's transition to the State Level Concept-an approach to safeguards implementation that considers a State and its nuclear activities and capabilities as a whole, rather than focusing on a checklist of criteria for specific types of facilities. • Develop the next generation of National Laboratories and IAEA safeguards staff.	**15,250**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Demonstrate proof-of-concept for global monitoring of uranium hexafluoride cylinders and field test and finalize advanced safeguards concepts for gas centrifuge enrichment plants for transfer to the IAEA. • Maintain qualified and knowledgeable safeguards staff at the National Laboratories and IAEA in support of the international safeguards regime. • Ensure continued compliance with the requirements of U.S.-IAEA safeguards agreements at all DOE sites, locations, and facilities.	**15,850** **16,300** **16,800** **17,850**
Safeguards Engagement		
FY 2012	• Collaborated with international partners to identify and analyze safeguards issues related to electrochemical processing. • Expanded 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. • Established 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 Uranium Ore Concentrate production facilities.	**17,286**
FY 2014	• In accordance with statutory mandate, provide customized training to more than 20 countries to ensure effective implementation of Comprehensive Safeguards Agreements and Additional Protocols.	**17,750**

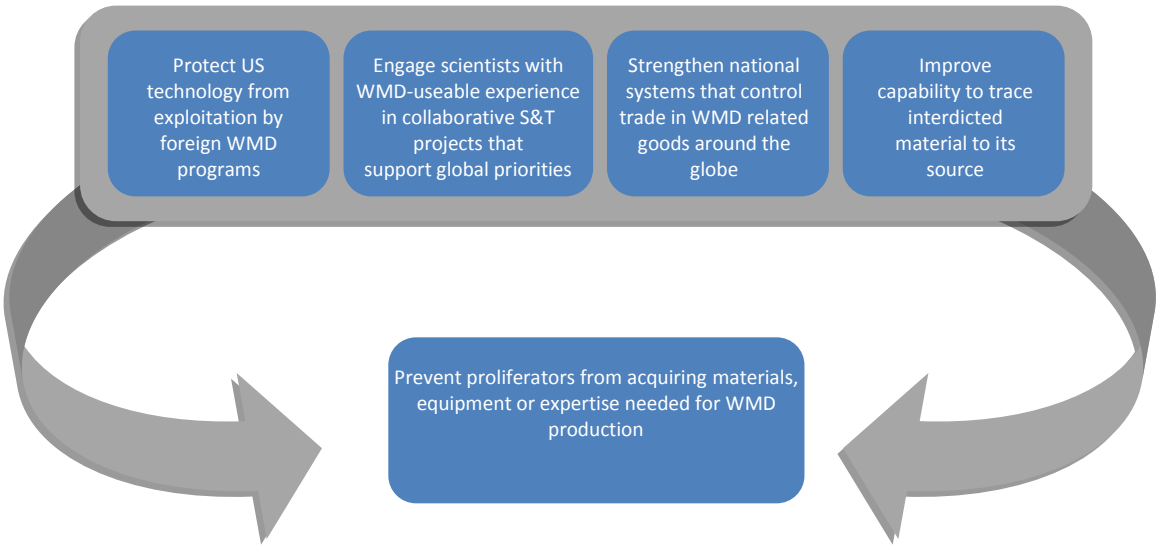
Fiscal Year	Activity	Funding (Dollars in Thousands)
Nuclear Safeguards and Security		
	• Conduct more than 15 advanced safeguards technology development and testing activities with advanced fuel cycle states.	
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Develop an integrated safeguards concept for electrochemical processing based on R&D conducted with international partners. • Increase coordination with advanced nuclear partners to conduct joint safeguards outreach to "nuclear newcomer" states. • Institutionalize uranium ore concentrate management and controls practices in select uranium mining states.	**18,100** **17,742** **18,709** **20,150**
Safeguards Technology Development		
FY 2012	• Initiated production of new non-destructive assay instruments for measurements of plutonium in spent fuel. • Developed new safeguards technologies for nuclear fuel cycle facilities. • Initiated improvements in safeguards technical and infrastructure capabilities across the nuclear security enterprise. • Addressed 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.	**15,567**
FY 2014	• Manage the U.S. Support Program (USSP) to IAEA Safeguards. • Develop and deploy two new instruments for spent fuel non-destructive assay and other fuel cycle facilities with domestic and foreign partners. • Demonstrate five new technologies designed to enhance in-field detection capabilities of safeguards inspectors, particularly for detection of undeclared activities. • Initiate development of new secure information and communication technologies to the IAEA to facilitate its transition to the State Level Concept.	**17,500**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Transfer spent fuel non-destructive assay technologies to foreign partners and deploy new technologies designed to enhance in-field detection of undeclared activities. • Test and transfer secure information and communication technologies to the IAEA to facilitate its transition to the State-Level Concept.	**18,050** **18,026** **18,959** **20,468**
International Nuclear Security		
FY 2012	• Conducted training on the new provisions of IAEA INFCIRC/225/Revision 5 (IAEA guidelines on the physical protection of nuclear material and nuclear facilities) and worked with international partners to ensure that applied physical protection measures were consistent with internationally agreed-upon physical protection standards.	**6,494**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Nuclear Safeguards and Security		
	• Provided technical support to international partners, including centers of excellence, to fulfill 2010 Nuclear Security Summit commitments and supported the 2012 Nuclear Security Summit. • Conducted 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.	
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 international effort to secure all vulnerable nuclear material worldwide.	**6,534**
FY 2014	• In accordance with statutory mandates: lead six to eight U.S. Government assessments of the physical protection of U.S.-obligated nuclear materials at foreign facilities, and collaborate with the IAEA and at least 10 partners to enhance the application of physical protection norms and best practices in line with international guidance.	**8,500**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Engage 15-20 international partners per year to help them implement international nuclear security standards (INFCIRC/225/Rev.5). • Conduct six to eight bilateral assessments per year to ensure the security of U.S.-obligated nuclear material at foreign facilities.	**9,273** **9,800** **10,100** **11,000**

Nuclear Controls
Overview

The Nuclear Controls (NC) subprogram builds global capacity to prevent the spread of WMD materials, equipment, technology 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; strengthening knowledge security awareness and control capacity through science and technology (S&T) collaboration and partnerships, and strengthening foreign partner nuclear forensics analytical capability and best practices to deter illicit trafficking through more effective attribution of material sources and seismic monitoring. This subprogram consists of the following 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

- Strengthens U.S. and foreign export control systems to prevent the proliferation of sensitive equipment and technology.
- Enhances U.S. Government interdiction capacity and counters WMD proliferation acquisition networks by reviewing transfers of U.S. goods and technology to screen for diversion risk and providing real-time technical support to the U.S. Government interdiction community.
- Reduces WMD expertise proliferation risk and vulnerability of WMD-capable experts to exploitation by providing S&T partnerships, education outreach and training in knowledge security and information protection systems at the facility level.
- Improves international capability to trace interdicted nuclear and radiological material to its source through improved analysis, development of national nuclear forensics libraries and improved communication networks.

[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

Fiscal Year	Activity	Funding (Dollars in Thousands)
Nuclear Controls		
FY 2012		**47,444**
FY 2013		**47,735**
FY 2014		**45,699**
FY 2015		**49,375**
FY 2016		**50,850**
FY 2017		**52,883**
FY 2018		**56,450**
International Nonproliferation Export Control Program		
FY 2012	• **U.S. Enforcement:** Conducted investigations-based training and consultations for Department of Homeland Security/Immigration and Customs Enforcement's (DHS/ICE) newly established Counterproliferation Centers; conducted Commodity Identification Training (CIT) courses for DHS/Customs and Border Protection (CBP); conducted training and provided support to CBP's National Targeting Center, and conducted training at major U.S. ports that combined localized targeting support with CIT for CBP inspectors and ICE investigators. • **Foreign Partner Engagement:** Expanded cooperation to include new partners on CIT in Africa and the Middle East, and launched and sustained 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.	**14,192**
FY 2014	• Engage 38-42 foreign partners to strengthen national export control systems and prevent illicit trafficking in WMD commodities through export licensing and enforcement training. • Train U.S. export enforcement officials in partnership with the newly created Export Enforcement Coordination Center (E2C2) established under the President's Export Control Reform Initiative.	**12,500**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Engage 38-42 foreign partners per year to strengthen national export control systems and prevent illicit trafficking in WMD commodities through export licensing and enforcement training programs. • Train U.S. export enforcement officials in partnership with the newly created E2C2 that was established under the Export Control Reform Initiative.	**12,750** **13,000** **13,500** **14,250**
Global Security through Science Partnerships (formerly Global Initiatives for Proliferation Prevention)		
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	**14,972**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Nuclear Controls		
	approach to expertise proliferation and is initiating a global effort with a new methodology to address the expertise proliferation threat. In Russia, existing projects utilizing the old model were closed out by the end of FY 2012. GIPP increased the level of activity in the rest of the former Soviet Union and continued activities based on assessed risk in Iraq.	
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.	**15,064**
FY 2014	• Mitigate the risk of expertise proliferation by: engaging key stakeholder communities in cost-shared S&T partnerships; conducting global outreach to exchange best technical and management practices related to the development and implementation of enhanced knowledge security cultures, and providing knowledge security training to establish or enhance security cultures and best practices at the facility level. • This program will engage 10-15 partners across these activities.	**13,000**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Continue to mitigate the risk of expertise proliferation by engaging key stakeholder communities in cost-shared S&T partnerships; conducting global outreach to exchange best technical and management practices related to the development and implementation of enhanced knowledge security cultures; and providing knowledge security training at the facility level to establish or enhance security cultures and best practices. • The program will engage 15-25 partners annually across these activities.	**15,000** **15,750** **16,500** **17,500**
Confidence Building Measures		
FY 2012	• Expanded cooperation in nuclear forensics with multiple partners on bilateral capacity-building and research and development activities as well as multilateral training. • Sponsored 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 Comprehensive Nuclear-Test-Ban Treaty (CTBT). • Restructured efforts with the Middle East Scientific Institute for Security (MESIS), to facilitate its transition into a fully self-sufficient and financially independent partner in the Middle East.	**2,751**

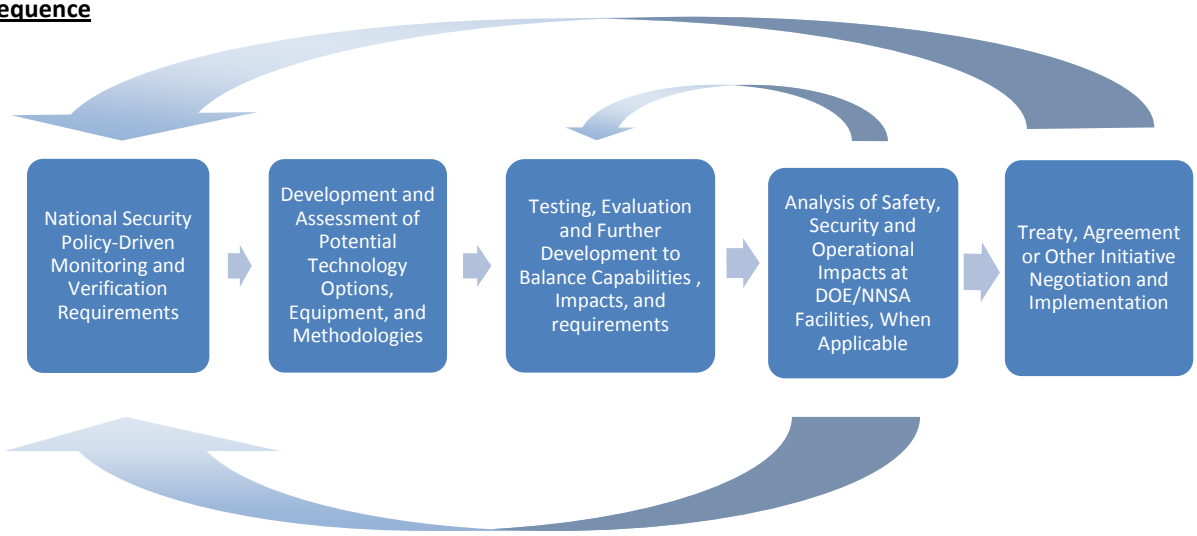
Fiscal Year	Activity	Funding (Dollars in Thousands)
Nuclear Controls		
FY 2013	• Build on multilateral and regional capacity-building efforts to strengthen core nuclear forensics capabilities in priority areas in advance of the 2014 Nuclear Security Summit. • Continue to partner with the Comprehensive 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.	**2,768**
FY 2014	• Engage 11 partners to strengthen foreign partner core nuclear forensic capabilities. • Support an ongoing seismic monitoring initiative in the Middle East that strengthens International Monitoring System and CTBT implementation capabilities, while fostering data and information sharing.	**2,677**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Engage 13 partners per year to strengthen foreign partner core nuclear forensic capabilities. • Support an ongoing seismic monitoring initiative in the Middle East that strengthens International Monitoring System and CTBT implementation capabilities, while fostering data and information sharing.	**3,050** **3,100** **3,200** **3,400**
Export Control Review and Compliance		
FY 2012	• Continued implementing the statutory interagency export licensing process for WMD-related dual-use and certain munitions items, nuclear software codes, and international projects. This included maintaining multilateral control regime information sharing networks for the NSG and the AG, and specialized computer directories and databases. • Continued serving in a technical advisory role supporting the State Department and interagency in the multilateral control regimes, including the Australia Group (AG), the Missile Technology Control Regime (MTCR) and the Wassenaar Arrangement (WA). This ensured evolving export control policy adequately reflected the latest technology advancements, and export control initiatives advanced the capacity of the U.S. Government to promote and achieve strengthened multilateral control norms. • Conducted 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. • Deployed the Nonproliferation Policy Analysis and Interdiction Resource (NPAIR) system, which allowed for enhanced efficiency and effectiveness of export control analysis that was conducted for all aspects of the activity area.	**12,360**
FY 2013	• Continue to provide recommendations, guidance and technical support for statutory export control reviews. • Continue a technical advisory role supporting the multilateral control regimes, including the Nuclear Suppliers Group (NSG), AG, and the MTCR, to ensure evolving policy adequately reflects the latest technology.	**12,436**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Nuclear Controls		
	• Continue to provide nonproliferation seminars for the U.S. Government, and 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.	
FY 2014	• In accordance with statutory mandates: perform approximately 6,000 technical reviews of export licenses for dual-use commodities; provide state-of-the-art technology assessments to the multilateral control regimes; and provide training courses for DOE and USG officials regarding changing export controlled technologies and proliferation concerns.	**14,000**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Perform approximately 6,000 technical reviews of export licenses for dual-use commodities per year; provide state-of-the-art technology assessments to the multilateral control regimes; and provide training courses for DOE and USG officials regarding changing export controlled technologies and proliferation concerns.	**14,316** **14,500** **15,033** **16,000**
Weapons of Mass Destruction Interdiction		
FY 2012	• Continued the WMD Interdiction activity, which supports U.S. Government interdiction efforts through the Interdiction Technical Analysis Group (ITAG), an inter-laboratory technical team that provides critical technical support, real-time "reach-back" capabilities, 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.	**3,275**
FY 2014	• In accordance with statutory mandate: provide approximately 3,000 comprehensive and real-time technical analyses to the U.S. Government's WMD interdiction community; and provide unique analytical products regarding proliferation trends and commodity gaps.	**3,522**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Provide approximately 3,000 comprehensive and real-time technical analyses per year; and provide unique analytical products regarding proliferation trends and commodity gaps through the Interdiction Technical Analysis Group.	**4,259** **4,500** **4,650** **5,300**

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 consists of three activities: Warhead Dismantlement and Fissile Material Transparency; Nuclear Noncompliance Verification, and Highly Enriched Uranium (HEU) Transparency Implementation.

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, 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, on 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

Fiscal Year	Activity	Funding (Dollars in Thousands)
Nuclear Verification		
FY 2012		**39,969**
FY 2013		**40,213**
FY 2014		**27,911**
FY 2015		**27,119**
FY 2016		**26,900**
FY 2017		**28,500**
FY 2018		**29,600**
Warhead Dismantlement and Fissile Material Transparency		
FY 2012	• Continued the development and assessment of advanced concepts for warhead and fissile material transparency, monitoring and verification, including the design of authenticatable material measurement equipment, and the initiation	**16,012**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Nuclear Verification		
	of measurements on NNSA assets to enable consideration of potential future verification approaches. • Supported New START implementation, including activities associated with the use of radiation detection equipment under the treaty. • Supported 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. • Completed exercise activities with the United Kingdom relating to possible future warhead and material monitoring and verification approaches. • Conducted Plutonium Production Reactor Agreement (PPRA) monitoring activities to ensure Russian plutonium oxide remains in secure storage and shutdown Russian plutonium production reactors remain in a non-operational status. Prepared for experts' familiarization visits to the last three shutdown Russian plutonium production reactors, in order to bring those reactors into the PPRA monitoring regime. • Completed accreditation activities for the Organization for the Prohibition of Chemical Weapons (OPCW) analysis laboratory at Lawrence Livermore National Laboratory (LLNL).	
FY 2013	• Continue measurements and modeling of NNSA assets to support analysis of potential monitoring and verification initiatives, consistent with NNSA considerations regarding operations, safety, and security. Continue development of authenticatable measurement 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 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.	**16,110**
FY 2014	• Develop advanced technologies and concepts for warhead and fissile material transparency and verification to support the implementation of the New START Treaty and potential future arms control initiatives. • Collaborate with the United Kingdom and possibly other partner countries to develop potential common approaches to verification challenges. • Complete monitoring visits in Russia under the terms of the PPRA to ensure the secure storage of Russian plutonium oxide and shutdown Russian plutonium production reactors remain in a non-operational status. • Maintain accreditation of OPCW laboratory at LLNL.	**15,000**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Continue to develop advanced technologies and concepts for warhead and fissile material transparency and verification to support the implementation of the New START Treaty and potential future arms control initiatives. • Collaborate with the United Kingdom and other partner countries to develop potential common approaches to verification challenges.	**16,750** **18,250** **19,000** **19,350**

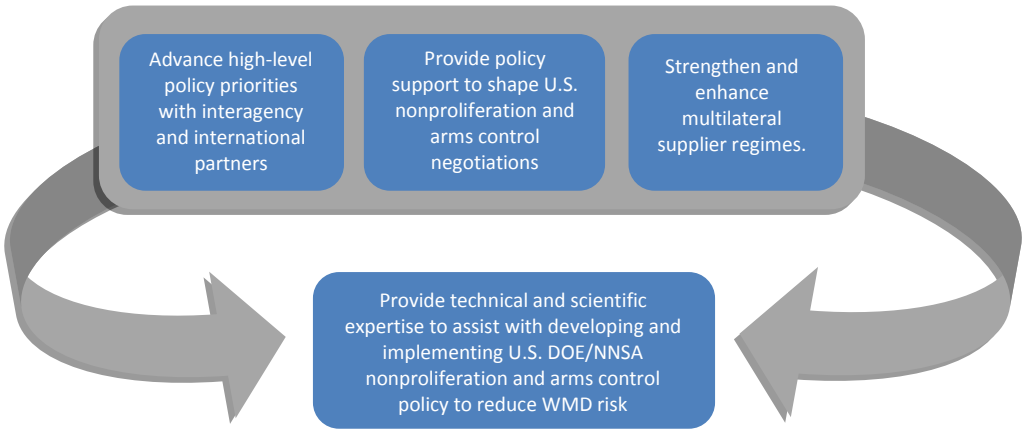
Fiscal Year	Activity	Funding (Dollars in Thousands)
Nuclear Verification		
	• Complete monitoring visits in Russia under the terms of the PPRA to ensure the secure storage of Russian plutonium oxide and shutdown Russian plutonium production reactors remain in a non-operational status. • Maintain accreditation of OPCW laboratory at LLNL.	
Nuclear Noncompliance Verification		
FY 2012	• Began development of a capability for age dating UF_6 in cylinders to verify declarations of the uranium fuel cycle in countries of concern. • Further developed nuclear fuel cycle analyses and provided suggestions for verification activities for select countries of concern as requested by IAEA. • Provided training to the IAEA on verification techniques developed by Nuclear Noncompliance Verification. • Continued to improve and maintain existing capabilities to verify, on short notice, 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 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 verify, on short notice, 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.	**7,434**
FY 2014	• Maintain readiness capabilities to verify declarations and denuclearization activities in countries of concern, on short notice. • Address outstanding needs in verification technical capabilities for the uranium and plutonium fuel cycles. • Provide planning and readiness to support verifiable dismantlement of nuclear programs in countries of proliferation concern.	**6,511**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Maintain readiness capabilities to verify declarations and denuclearization activities in countries of concern, on short notice. • Address outstanding needs in verification technical capabilities for the uranium and plutonium fuel cycles. • Provide planning and readiness to support verifiable dismantlement of nuclear programs in countries of proliferation concern.	**8,143** **8,650** **9,500** **10,250**
HEU Transparency Implementation		
FY 2012	• Completed 24 monitoring visits to Russian nuclear facilities. • Monitored the conversion of 30 MT of Russian weapons-origin HEU to LEU for a cumulative total of 462 MT downblended and verifiably eliminated. • Supported a Russian monitoring visit to the United States. • Continued to monitor and assess Russian HEU to LEU processing data.	**16,568**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Nuclear Verification		
FY 2013	• Complete 24 monitoring visits to Russian nuclear facilities. • Monitor the conversion of 26 MT of Russian weapons-origin HEU to LEU for a cumulative total of 488 MT downblended and verifiably eliminated. • Support a Russian monitoring visit to the United States. • Continue to monitor and assess Russian HEU to LEU processing data.	**16,669**
FY 2014	• Complete all remaining monitoring visits to four Russian HEU processing facilities. • Monitor the conversion of the final quantity of Russian weapons-origin HEU to LEU for a cumulative total of 500 MT downblended and verifiably eliminated.	**6,400**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Complete all transparency monitoring provisions under the U.S.-Russia HEU Purchase Agreement. • Complete assessments of Russian HEU to LEU processing data. • Provide U.S. LEU processing data and forms to Russia. • Support Russian monitoring visits to the USEC Paducah facility and four U.S. nuclear fuel fabrication facilities.	**2,226** **0** **0** **0**

Nonproliferation Policy
Overview

The Nonproliferation Policy (NP) subprogram develops and implements DOE/NNSA nonproliferation and arms control policy and supports implementation of bilateral and multilateral, Presidentially-directed, or Congressionally-mandated nonproliferation and international security requirements stemming from high-level nonproliferation initiatives, agreements, and treaties. Specifically, the NP subprogram develops policy and provides program oversight on nonproliferation and international security issues; supports the development and negotiation of nuclear treaties and agreements; provides DOE/NNSA nonproliferation policy guidance on nuclear fuel cycle issues, and undertakes activities to improve and update multilateral nuclear supplier arrangements and identify supplier vulnerabilities and potential gaps in supplier arrangements. 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.
- Strengthens multilateral supplier regimes to limit the spread of sensitive technologies, such as enrichment and reprocessing, and to shut down illicit and clandestine procurement.
- 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

Fiscal Year	Activity	Funding (Dollars in Thousands)
Nonproliferation Policy		
FY 2012		**11,284**
FY 2013		**11,353**
FY 2014		**9,065**
FY 2015		**9,655**
FY 2016		**10,150**
FY 2017		**10,850**
FY 2018		**12,100**
Global Regimes		
FY 2012	• Provided statutorily-mandated technical assistance to negotiations supporting agreements for cooperation and their administrative arrangements, focusing on	**4,641**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Nonproliferation Policy		
	the conclusion of Administrative Arrangements with Canada, India, and Russia. • Represented DOE/NNSA in negotiations on a Fissile Material Cutoff Treaty (FMCT). • Developed positions and represented DOE in bilateral/multilateral discussions at the First Preparatory Committee Meeting to the Nuclear Nonproliferation Treaty Review Conference. • Provided technical support in the development of the IAEA Nuclear Fuel Bank, as part of the President's new framework for civil nuclear cooperation.	
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. • Finalize entry-into-force of new 10 CFR Part 810 nuclear technology transfer regulations. • Develop web-based industry application process along with process efficiencies designed to make NIS Part 810 implementation process ISO 9001 compliant, with special emphasis on enhancements to NIS application processing.	**4,670**
FY 2014	• In accordance with statutory mandates, provide technical assistance to the negotiation of at least five Section 123 Agreements for Cooperation and their administrative arrangements, and support the development and implementation of a new framework for civil nuclear cooperation as called for by the President to reduce reliance on indigenous development of enrichment and reprocessing efforts by recipient states. • Finalize development of web-based industry application process along with process efficiencies designed to make NIS Part 810 implementation process ISO 9001 compliant, with special emphasis on enhancements to NIS application processing.	**3,494**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• In accordance with statutory mandates, provide technical assistance to two or three administrative arrangements per year; and conclude development of a new international framework for civil nuclear cooperation and proceed to implement such framework in government and with industry.	**3,755** **3,800** **3,800** **4,200**
Regional Analysis and Engagement		
FY 2012	• 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. • Provided 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	**2,515**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Nonproliferation Policy		
	build capacity for greater regional, government-to-government cooperation in arms control, non-proliferation, and disarmament issues.	
FY 2014	• Conduct Track 1.5 and Track II engagements in priority areas, including the Middle East, South Asia, Northeast Asia, and Southeast Asia, and leverage these efforts to build capacity for greater regional, government-to-government cooperation in arms control, non-proliferation, and disarmament issues.	**1,800**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Conduct Track 1.5 and Track II engagements in priority areas, including the Middle East, South Asia, Northeast Asia, and increasingly China 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** **2,200** **2,750** **3,000**
Multilateral Supplier Policy		
FY 2012	• Continued 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. • Supported the U.S. Government hosting and chairing the NSG. • Implemented NSG controls on transit and brokering of nuclear materials and technology. • Updated 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. • 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.	**4,168**
FY 2014	• In accordance with statutory mandates, launch 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, and support implementation of the concept of industry self-regulation within the NSG Guidelines.	**3,771**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• In accordance with statutory mandates, the United States will continue to review and propose modifications to the NSG's Guidelines and Control Lists to reflect an evolving globalized nuclear industry and evolving proliferation concerns. The United States also will conduct technical studies to determine new technologies of proliferation concern that should be controlled by the NSG, and lead the effort to have the NSG control lists implemented within the model IAEA Additional Protocol Annex for import/export reporting.	**3,900** **4,150** **4,300** **4,900**

International Material Protection and Cooperation (IMPC)
Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
International Material Protection and Cooperation [a] [b]			
Navy Complex [c]	33,664	33,870	0
Strategic Rocket Forces/12th Main Directorate [c]	59,105	59,467	0
Nuclear Warhead Protection [c]	0	0	23,173
Weapons Material Protection	80,735	81,229	36,357
Civilian Nuclear Sites [d]	59,117	59,479	0
Material Consolidation and Conversion [d]	14,306	14,394	0
Material Consolidation and Civilian Sites [d]	0	0	132,299
National Infrastructure and Sustainability Program	60,928	61,301	37,796
Second Line of Defense	262,072	263,675	140,000
International Contributions [e]	5,862	0	0
Total, International Material Protection and Cooperation [f]	**575,789**	**573,415**	**369,625**

[a] This represents the proposed control level.
[b] This program was formerly known as International Nuclear Materials Protection and Cooperation (INMP&C).
[c] The Navy Complex and Strategic Rocket Forces/12th Main Directorate subprograms, with essentially the same mission, have been merged into a new subprogram titled Nuclear Warhead Protection (NWP).
[d] The Civilian Nuclear Sites and Material Consolidation and Conversion subprograms, which were highly interconnected, have been merged into a new subprogram titled Material Consolidation and Civilian Sites.
[e] The FY 2012 total includes international contributions of $461,940 from Finland, $600,000 from South Korea, and $4,800,000 from the United Kingdom.
[f] The FY 2013 portion of the Funding and Activity Schedule is consistent with the President's FY 2013 Congressional Budget Request and the program's current baseline.

Out-Year Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
International Material Protection and Cooperation [a] [b]					
Nuclear Warhead Protection [c]	23,173	23,237	23,266	23,512	18,980
Weapons Material Protection	36,357	22,148	18,960	21,506	32,944
Material Consolidation and Conversion Sites [c]	132,299	155,974	160,447	160,922	72,670
National Infrastructure and Sustainability Program	37,796	37,806	39,719	32,816	31,302
Second Line of Defense	140,000	130,000	140,000	140,576	154,822
International Contributions [d]	0	0	0	0	0
Total, International Material Protection and Cooperation [e]	**369,625**	**369,165**	**382,392**	**379,332**	**310,718**

[a] This represents the proposed control level.

[b] Change International Nuclear Materials Protection and Cooperation (INMP&C) to International Material Protection and Cooperation (IMPC).

[c] Combined two highly interconnected subprograms, Civilian Nuclear Sites and Material Consolidation and Conversion, into new subprogram titled Material Consolidation and Civilian Sites.

[d] FY 2012 total includes international contributions of $461,940 from Finland, $600,000 from South Korea, and $4,800,000 from the United Kingdom.

[e] The FY 2013 portion of the Funding and Activity Schedule is consistent with the President's FY 2013 Congressional Budget Request and the program's current baseline.

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
National Defense Authorization Act for FY 2013 (P.L. 112-239)
The Continuing Appropriations Resolution, 2013 (P.L. 112-175)

Overview

The Office of International Material Protection and Cooperation (IMPC) 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. The program changed its name to reflect its efforts to prevent proliferation of both nuclear and radiological materials.

IMPC works cooperatively with partner countries to improve security at nuclear facilities as a first line of defense under the Material Protection Control and Accounting (MPC&A) Program. MPC&A teams may provide a suite of physical security system and nuclear material control and accounting upgrades as well as support training and best practices technical exchanges. To complement efforts to secure materials at their source, IMPC supports the consolidation of nuclear materials into fewer, more defensible and more sustainable locations and supports down-blending non-weapons-origin, highly-enriched uranium (HEU) to low-enriched uranium (LEU).

IMPC'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 by deploying fixed site and mobile radiation detection systems and providing training, maintenance and sustainability assistance to support the mission of the global nuclear detection architecture to deter and detect the illicit trafficking of nuclear material.

Improvement in a partner country's ability to secure, reduce, and interdict nuclear materials must be sustained by the country in the long term. Therefore, IMPC works to improve indigenous nuclear security infrastructure at the site and national level by also supporting regulations and procedures, inspections, training, maintenance, performance testing, life-cycle planning, and nuclear security culture.

Program Accomplishments and Milestones

In FY 2012, IMPC accomplished significant milestones including: 1) deploying SLD radiation detection systems at 33 sites; 2) downblending 1.3 metric tons of HEU to LEU; 3) supporting the enactment of a major regulation in Russia designed to modernize material control and accounting requirements; 4) completing a nuclear security training center for the Ministry of Defense protective forces in cooperation with Canada and the Russian Federation, and 5) completing a radiation detection training center in partnership with Chinese Customs Service.

Program Planning and Management

IMPC supports NNSA and DOE Goal "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 former Soviet Union (FSU), and other countries. IMPC regularly revalidates 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.

IMPC 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;
- improve efforts to deter, detect, and interdict the illicit trafficking of weapons-usable material.
- emphasize increased proportions of cost-sharing with international partners, and
- 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 program's strategic goal:

- foreign partner commitment to remain engaged with the United States,
- new agreements needed, such as a successor agreement to 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

Outyear funding levels for the IMPC program total $1,441,607,000 for FY 2015 through FY 2018. IMPC will continue to implement identified actions from the 2012 Nuclear Security Summit and work cooperatively with international partners through the G8 Global Partnership on nuclear security. MPC&A assistance to Russia will continue but with a focus on generating opportunities to accelerate the transition of a greater share of the costs of upgrades and sustainability to Russia and to partner with Russia in third countries. SLD will complete identified international nuclear detection fixed deployments, expand mobile detection initiatives and maintain sustainability programs consistent with and supporting the strategies identified in the interagency Global Nuclear Detection Architecture Implementation Plan.

Program Goals and Funding

IMPC 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) (excludes chemical and biological) or other acts of terrorism. To meet the NNSA strategic long-term goal of Nuclear Nonproliferation, IMPC provides a first line of defense by securing warheads and weapons-useable nuclear materials at their source, and a second line of defense by preventing pathways and deterring and detecting the illicit transfer of nuclear materials: (1) complete upgrades to 229 buildings containing weapons-useable nuclear material and transitioning 63 initiatives to the Russian Federation through FY 2018; (2) downblend a cumulative total of approximately 20 MTs of HEU by the end of fiscal year 2018, and (3) install radiation detection equipment at a cumulative total of 622 ports and border crossings by the end of FY 2018.

Performance Measures

Performance Goal (Measure)	**MPC&A Upgrades - Buildings** - Cumulative number of buildings containing weapons-usable material with completed MPC&A upgrades.		
Fiscal Year	**2012**	**2013**	**2014**
Target	221 buildings	229 buildings	229 buildings
Result	**Not Met** - 218		
Endpoint Target	By the end of FY 2013, complete MPC&A upgrades on a cumulative total of 229 buildings containing weapon-usable nuclear material including Post Bratislava work-scope. Note: The goal of completing upgrades at a cumulative 229 buildings by the end of FY 2013 will not be met because the targeted completion of material protection, control, and accounting upgrades to three buildings in FY 2012 was delayed due to prolonged contract negotiations. However, the program's objective is to achieve the cumulative priority goal (229 buildings) by the end of the first quarter FY 2014. This timeframe is consistent with the President's initiative to secure the most vulnerable nuclear material by December 31, 2013.		

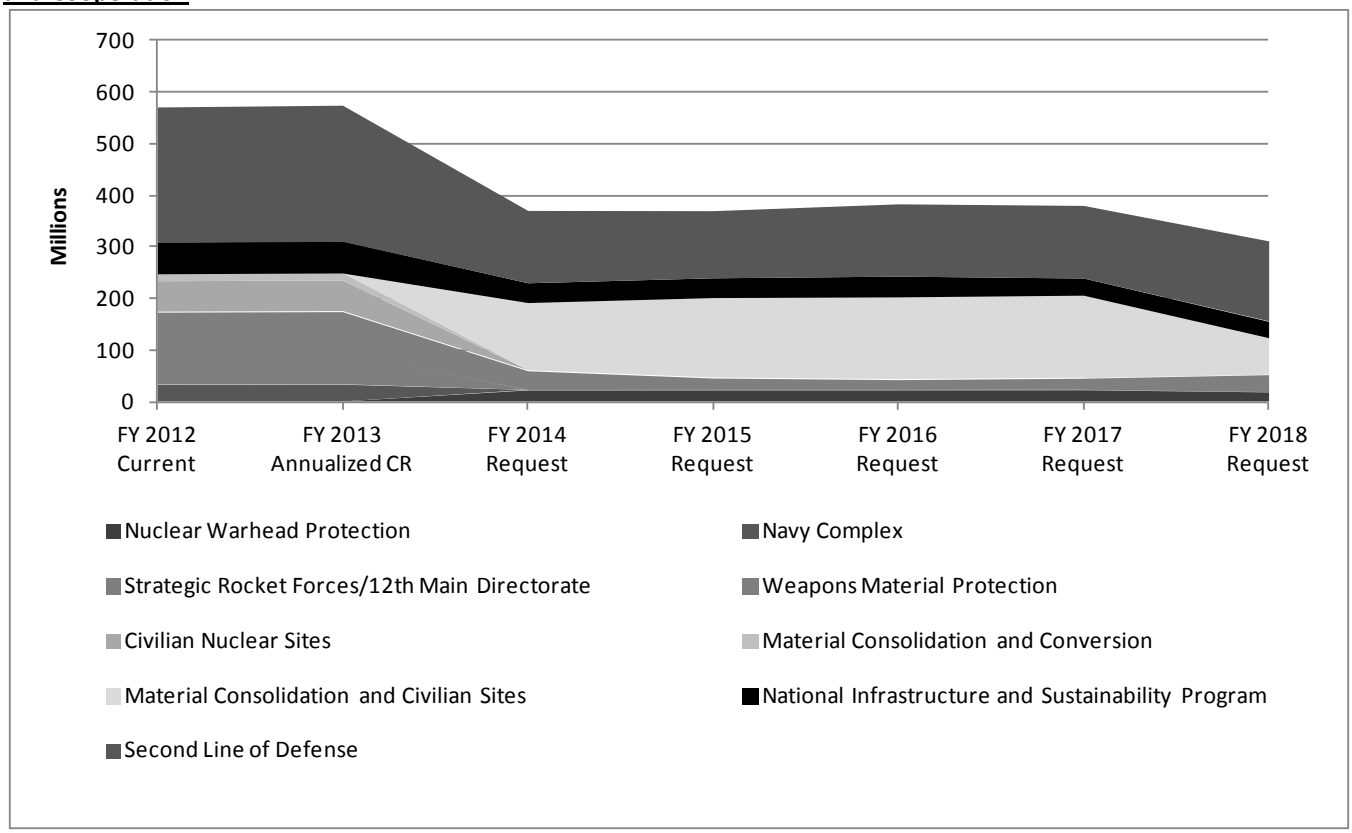
Performance Goal (Measure)	**MPC&A Initiatives** - Annual number of total upgrade and sustainability initiatives completed and transitioned to host country.		
Fiscal Year	**2012**	**2013**	**2014**
Target	N/A	N/A	12 initiatives completed
Result			
Endpoint Target	By the end of FY 2018, complete the sustainability phase of 63 MPC&A initiatives with foreign partners.		

Performance Goal (Measure)	**Second Line of Defense (SLD) Sites** - Cumulative number of Second Line of Defense (SLD) sites with nuclear detection equipment installed.		
Fiscal Year	**2012**	**2013**	**2014**
Target	496 sites (45 Megaports)	513 sites (45 Megaports)	538 sites
Result	**Not Met** - 493 (44)		
Endpoint Target	By the end of FY 2018, provide radiation detection equipment to 622 cumulative SLD sites. Note: The FY 2013 target was decreased from 531 sites (45 Megaports) to 513 sites (45 Megaports) as a result of a strategic review in FY 2013. Previous FY 2013 targets reflected the funding profile for Second Line of Defense prior to the strategic review noted in the FY 2013 Request. The above FY 2013 targets reflect program goals under the new funding profile. The FY 2013 target was changed in accordance with OMB Circular A-11.240.6 and DOE policy. Beginning in FY 2014, the program will report the cumulative number of SLD sites; Megaports will not be reported separately.		

Performance Goal (Measure)	**Second Line of Defense (SLD) Sustainability** - Cumulative number of Second Line of Defense (SLD) sites that are being indigenously sustained.		
Fiscal Year	**2012**	**2013**	**2014**
Target	N/A	N/A	431 sites
Result			
Endpoint Target	By the end of FY 2018, transition 531 SLD sites to indigenous sustainment.		

Performance Goal (Measure)	**Second Line of Defense (SLD) Mobile Detection System (MDS):** Cumulative number of Mobile Detection Systems deployed and (number of new countries hosting the systems).		
Fiscal Year	**2012**	**2013**	**2014**
Target	N/A	N/A	68 MDS (23 countries)
Result			
Endpoint Target	By the end of FY 2018, deploy 148 Mobile Detection Systems in 44 countries.		

Figure 1: Relative Out-Year Funding Priorities in Defense Nuclear Nonproliferation – International Material Protection and Cooperation



Explanation of Funding and/or Program Changes

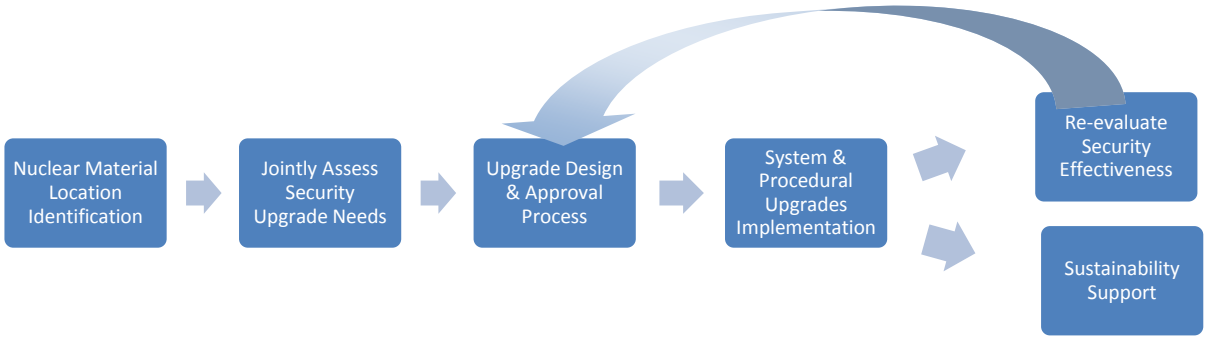
	(Dollars in Thousands)		
	FY 2012 Current	FY 2014 Request	FY 2014 Request vs. FY 2012 Current
International Material Protection and Cooperation			
Navy Complex	**33,664**	**0**	**-33,664**
The decrease results from combining the Navy Complex and Strategic Rocket Forces/12th Main Directorate (SRF/12MD) subprograms under Nuclear Warhead Protection.			
Strategic Rocket Forces/12th Main Directorate	**59,105**	**0**	**-59,105**
The decrease results from combining the Navy Complex and SRF/12MD subprograms under Nuclear Warhead Protection.			
Nuclear Warhead Protection	**0**	**23,173**	**+23,173**
The increase reflects the combining of the Navy Complex and SRF/12MD subprograms. The cumulative level for the combined programs represents a decrease of $69,596 from the FY 2012 level. The majority of this decrease reflects the completion of a number of major initiatives. Additionally, some costs associated with sustainability and some equipment modernizations have been transitioned to the Russian side.			
Weapons Material Protection	**80,735**	**36,357**	**-44,378**
The decrease for this subprogram reflects the completion of a number of major initiatives, transfer of costs to Russia, and reduction of funding for training support for India due to lack of momentum in cooperation.			
Civilian Nuclear Sites	**59,117**	**0**	**-59,117**
The decrease results from combining the Civilian Nuclear Sites and Material Consolidation and Conversion subprograms under Material Consolidation and Civilian Sites.			
Material Consolidation and Conversion	**14,306**	**0**	**-14,306**
The decrease results from combining the Civilian Nuclear Sites and Material Consolidation and Conversion subprograms under Material Consolidation and Civilian Sites.			

	(Dollars in Thousands)		
	FY 2012 Current	FY 2014 Request	FY 2014 Request vs. FY 2012 Current
Material Consolidation and Civilian Sites	**0**	**132,299**	**+132,299**
The increase reflects the combining of the Civilian Nuclear Sites and Material Consolidation and Conversion subprograms into a single line item, to better reflect how they are managed organizationally. The cumulative level for the combined programs represents a $58,876 increase, which reflects significant workscope increase for MPC&A work outside of Russia.			
National Infrastructure and Sustainability Program	**60,928**	**37,796**	**-23,132**
The decrease for this subprogram reflects the completion of some major initiatives.			
Second Line of Defense	**262,072**	**140,000**	**-122,072**
The strategic review resulted in the reorganization of SLD Core and Megaports programs under a joint implementation program and sustainability effort, combined in this line. The cumulative level of the combined subprograms represents a decrease of $122,072,000. Funding decrease results in the suspension of new installations at large container seaports as well as reductions in the installation of fixed systems at some border sites.			
International Contributions	**5,862**	**0**	**-5,862**
Decrease in funding as IMPC cannot project future international contributions.			
Total Funding Change, International Materials Protection and Cooperation	**575,789**	**369,625**	**-206,164**

Navy Complex
Overview

The Navy Complex subprogram 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 47 sites include 39 Russian Navy nuclear warhead sites and 8 Russian Navy fuel and other nuclear material storage sites. Beginning in FY 2014, this subprogram will be reflected under the Nuclear Warhead Protection subprogram.

Sequence



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.

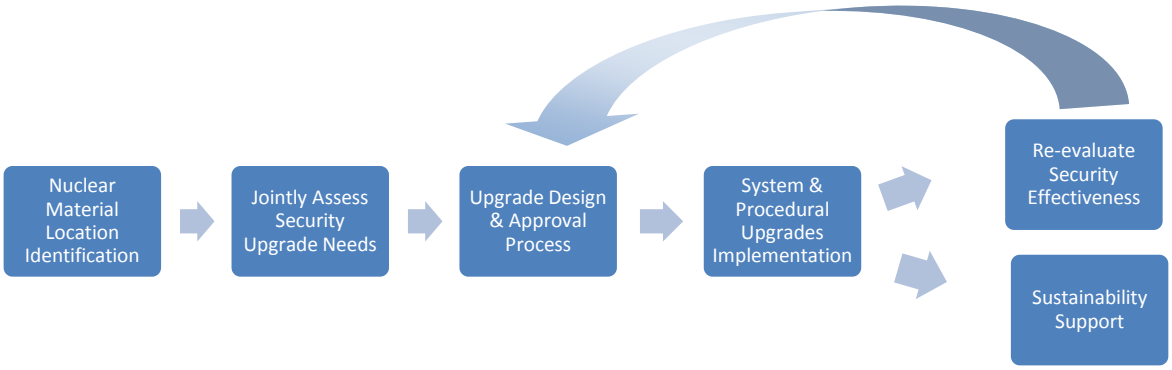
Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• 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. • Completed security upgrades at 2 additional checkpoints. • Provided sustainability support at 2 previously upgraded checkpoints. • Continued 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 its serviceable life. • Implement additional upgrades to bring Navy sites to the level of upgrades established at 12th Main Directorate's Bratislava Initiative sites.	**33,870**
FY 2014	• Reflects realignment of this subprogram to the Nuclear Warhead Protection subprogram.	**0**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Reflects realignment of this subprogram to the Nuclear Warhead Protection subprogram.	**0** **0** **0** **0**

Strategic Rocket Forces/12th Main Directorate
Overview

The Strategic Rocket Forces (SRF)/12th Main Directorate subprogram 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 34 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. Beginning in FY 2014, this subprogram will be reflected under the Nuclear Warhead Protection subprogram.

Sequence



Benefits

- Reduces the risk of theft by terrorists 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.
- 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 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 weapons.

Funding and Activity Schedule

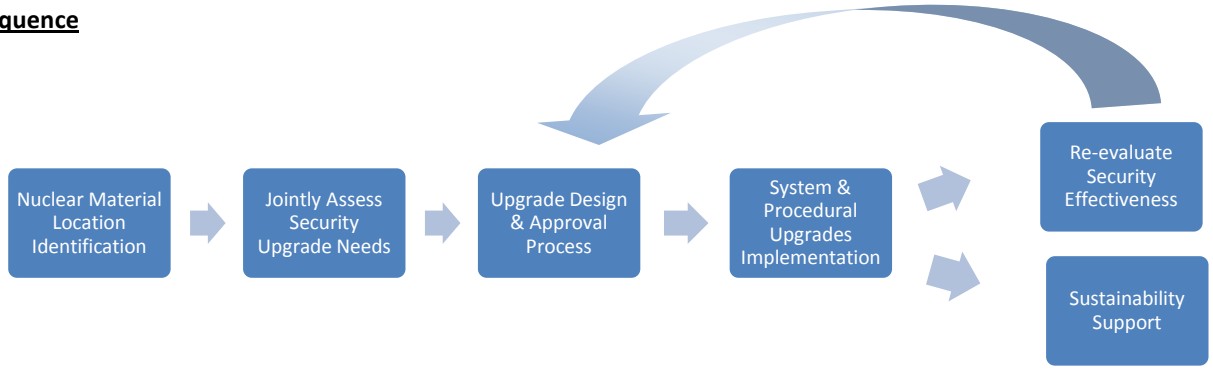
Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• Provided sustainability support at 23 SRF sites and 3 12th Main Directorate sites. • Completed/supported 3 training and maintenance centers to ensure sustainability of upgrades installed at the sites. • Provided additional MPC&A upgrades to other SRF sites that will provide additional protection from theft and/or diversion of warheads from these sites.	**59,105**
FY 2013	• 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 its serviceable life at up to 11 sites.	**59,467**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	• 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.	
FY 2014	• Reflects realignment of this subprogram to the Nuclear Warhead Protection subprogram.	**0**
FY 2015	• Reflects realignment of this subprogram to the Nuclear Warhead Protection subprogram.	**0**
FY 2016		**0**
FY 2017		**0**
FY 2018		**0**

Nuclear Warhead Protection
Overview

Nuclear Warhead Protection (formerly Navy Complex and Strategic Rocket Forces/12th Main Directorate) works in cooperation with the Russian Federation's Ministry of Defense (MOD) to improve the nuclear material security of Russian Navy, Strategic Rocket Forces (SRF) and the 12th Main Directorate warhead sites, and sites where weapons-useable material is located such as highly enriched uranium (HEU) fuel storage facilities (fresh and damaged fuel) and shipyards where nuclear materials are present. The basic MPC&A upgrade objective is to employ a cost-effective, graded approach with an initial focus on co-financing security upgrades for highly attractive nuclear material at each site. Rapid MPC&A upgrades are installed to mitigate the immediate risk of theft and diversion until long-term, more comprehensive MPC&A upgrades are designed, installed, and placed into operation. Follow-on collaboration is focused on improving systems and practices that support sustainability, and identifying gaps in the protection strategy.

Sequence



Benefits

- Reduces the risk of theft by terrorists of nuclear warheads and weapons-exploitable nuclear propulsion fuel by upgrading, strengthening, and modernizing security systems deployed at Russian Federation (RF) Navy nuclear warheads and nuclear propulsion fuel storage sites.
- Reduces the likelihood that upgraded systems will fail to protect nuclear warheads and materials by helping to ensure that necessary training and maintenance capabilities are incorporated into RF Navy, SRF, and 12th Main Directorate standard operating procedures.
- Reduces the risk of theft by terrorists of Russian nuclear warhead stockpiles under the command of the RFMOD by upgrading, strengthening, and modernizing security systems deployed at Russian Federation Strategic Rocket Forces and 12th Main Directorate nuclear weapon sites.
- Reduces the threat posed by insiders by strengthening human reliability programs used to vet military personnel with access to nuclear weapons.
- Emphasizes increased cost sharing with Ministry of Defense elements, focused on continued modernization and sustainability of security systems.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• Activities were conducted under the Navy Complex and Strategic Rocket Forces/12th Main Directorate subprograms.	**0**
FY 2013	• Activities were conducted under the Navy Complex and Strategic Rocket Forces/12th Main Directorate subprograms.	**0**

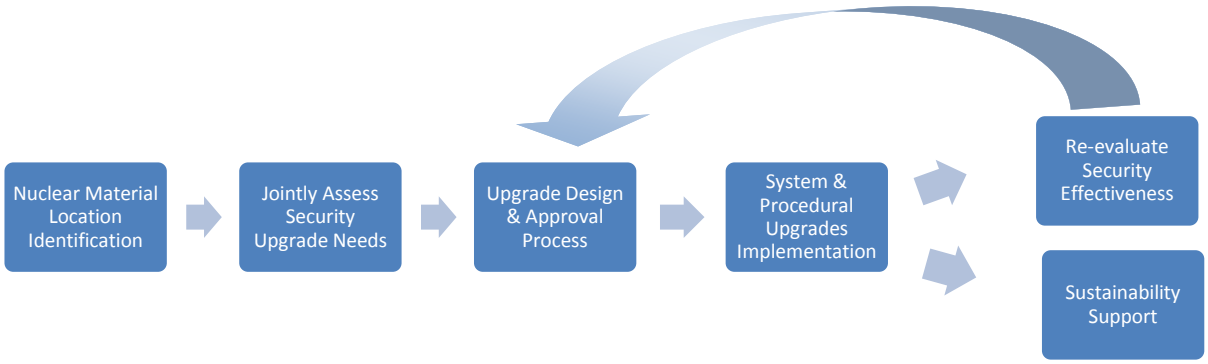
Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2014	• Continue to provide training and workshops for the systems and procedures previously installed and implemented. • Additional upgrade and sustainability initiatives at select Navy and SRF sites • Continue to provide support for training and maintenance centers to help ensure sustainability of upgrades.	**23,173**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Continue to provide training and workshops for the systems and procedures previously installed and implemented. • Additional upgrade and sustainability initiatives at select Navy and SRF sites. • Continue to provide support for training and maintenance centers to help ensure sustainability of upgrades.	**23,237** **23,266** **23,512** **18,980**

Weapons Material Protection
Overview

Weapons Material Protection works in cooperation with Russia and other countries to upgrade and sustain nuclear material security at sites with weapons-usable materials. Russian sites include nuclear weapons design facilities, component handling, and material production and reprocessing facilities with many nuclear material storage and handling locations. The basic MPC&A upgrade objective is to employ a cost-effective, graded approach with an initial focus on co-financing security upgrades for highly attractive nuclear material at each site. Rapid MPC&A upgrades are installed to mitigate the immediate risk of theft and diversion until long-term, more comprehensive MPC&A upgrades are designed, installed, and placed into operation. Follow-on collaboration is focused on improving systems and practices that support sustainability, and identifying gaps in the protection strategy.

Funding also supports continuing efforts to establish a best practices exchange on nuclear material security topics with India.

Sequence



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.
- Mitigates the threat of insider theft of materials at several of the largest bulk processing facilities in the world through material control and accounting upgrades that complement physical protection efforts, as well as other insider-focused initiatives such as waste stream screening, operational monitoring, and human reliability programs.
- Fosters nuclear material security best practices exchanges with India in support of India's Center of Excellence.
- Emphasizes increased cost sharing with Rosatom weapons complex sites, focused on continued modernization and sustainability of security systems.

Funding and Activity Schedule

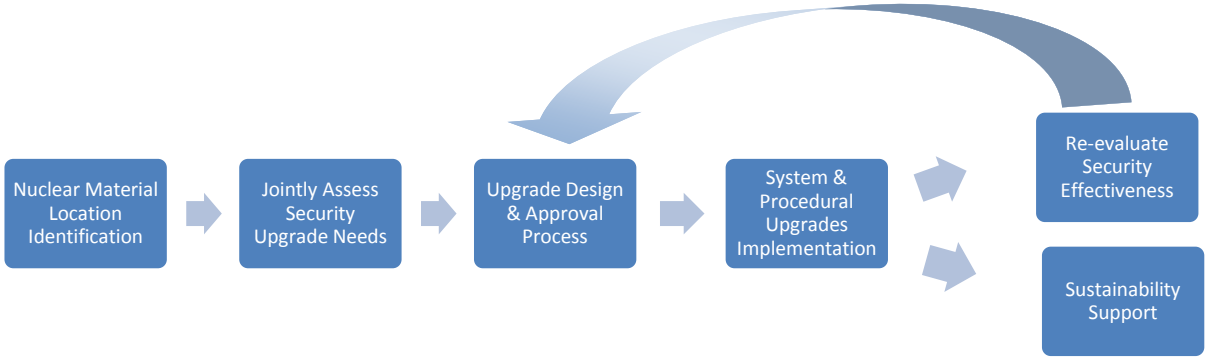
Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• Insider-related upgrades completed at two of the primary bulk processing facilities in Russia. • Comprehensive MPC&A upgrades initiated at 11 new buildings that store and process weapons-usable nuclear material at one of the largest bulk processing facilities in Russia. • New perimeter completed at a guarded area with 2 buildings that have weapons-usable nuclear material, and at a guarded area with 17 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 completed at one of the primary weapons design facilities in Russia. • Human reliability program engagement initiated with two bulk processing facilities. • Supported MPC&A efforts in Kazakhstan, Ukraine, Belarus, and Uzbekistan. Efforts focused on supporting a regional MPC&A training center in Kazakhstan and a new secure material storage vault at a facility in Belarus. • Continued engagement with India in support of the nuclear security components of its Centre for Global Nuclear Energy Partnership, including nuclear material security best practice exchanges.	**80,735**
FY 2013	• Comprehensive MPC&A upgrades will be completed at 3 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 9 buildings that have weapons-usable nuclear material at one of the primary weapons design facilities in Russia. • Upgrades will be completed to the closed city perimeter entry control points at two weapons design facilities. • Human reliability program engagement will continue with two bulk processing facilities. • Complete material storage vault at a facility in Belarus and continue support of a regional MPC&A training center in Kazakhstan. • Continue engagement with India in support of the nuclear security components of its Center of Excellence, including nuclear material security best practice exchanges.	**81,229**
FY 2014	• Complete comprehensive MPC&A upgrades at 8 more buildings that store and process weapons-usable nuclear material by December 2013, consistent with the Four Year Lockdown. • Continue to cost-share selective new upgrade initiatives at sites to further risk mitigation, including: (1) nuclear detection on closed city borders; (2) expanded MPC&A upgrades at some buildings to address both outsider and insider threats when additional areas/upgrade options become available; (3) Rosatom protective force training center development, and (4) improvements to site-wide material measurement and accounting practices. • Continue to implement a comprehensive MPC&A sustainability effort at all sites to include: (1) efforts to improve MPC&A management infrastructures;	**36,357**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	(2) training; (3) procedural development and adherence; (4) system maintenance and repair; (5) performance testing; (6) configuration management, and (7) operational cost analysis. • A new perimeter will be completed at a guarded area with 17 buildings that have weapons-usable nuclear material at one of the primary weapons design facilities in Russia. • A new perimeter will be completed at a large bulk processing facility. • As necessary, the program will continue to finance the replacement of systems that were upgraded earlier in the cooperative agreement and are now at the end of their operational lifecycles. • Continue to support MPC&A activities in Kazakhstan and Belarus, as needed. • Continue engagement with India on the nuclear security components of its Center of Excellence, including nuclear material security best practice exchanges.	
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Finalize cost-sharing on selected new upgrade initiatives at sites to further risk mitigation, including: (1) nuclear detection on closed city borders; (2) expanded MPC&A upgrades at some buildings to address both outsider and insider threats when additional areas/upgrade options become available; (3) Rosatom protective force training center development, and (4) improvements to site-wide material measurement and accounting practices. Degree of cost-sharing is expected to increase throughout outyear period. • Continue to implement a comprehensive MPC&A sustainability effort at sites at a reduced level, to include: (1) efforts to improve MPC&A management infrastructures; (2) training; (3) procedural development and adherence; (4) system maintenance and repair, and (5) performance testing. • As necessary, the program will continue to co-finance the replacement of selected systems that were upgraded earlier in the cooperative agreement and are now at the end of their operational lifecycles. • Continue engagement with India on the nuclear security components of its Center of Excellence, including nuclear material security best practice exchanges.	**22,148** **18,960** **21,506** **32,944**

Civilian Nuclear Sites
Overview

The Civilian Nuclear Sites subprogram 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 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 security enhancements, e.g., perimeter upgrades, as warranted. This subprogram will also continue to support those sites with completed MPC&A comprehensive upgrades. Beginning in FY 2014, this subprogram will be reflected within the Material Consolidation and Civilian Sites subprogram.

Sequence



Benefits

- Improves security at 18 civilian nuclear sites in Russia by installing upgrades for the most highly 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.
- Emphasizes increased cost sharing with Rosatom civilian sites, focused on continued modernization and sustainability of security systems.
- 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 International Atomic Energy Agency (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 subprogram 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

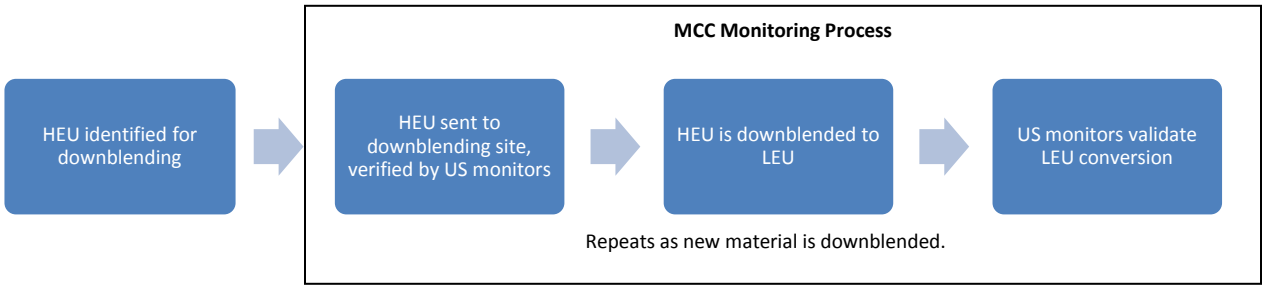
Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• Continued to provide sustainability support to civilian nuclear sites with MPC&A upgrades, including completion of an expanded central storage facility, site-level workshops on the VISA methodology for assessing insider threats, and annual technical maintenance support for installed equipment at 18 sites in Russia. • Continued cooperation with countries outside of Russia and the Former Soviet States in order to increase MPC&A awareness and provide assistance to protect weapons-exploitable materials, to include 6-8 best practices workshops on various MPC&A elements. • Continued 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 provide assistance to protect weapons-exploitable materials. • Complete technical design review phase for China COE (groundbreaking by Chinese anticipated in FY 2013) and initiate procurement of Physical Protection (PP) and remaining Material Control and Accounting (MC&A) training equipment for the COE. • 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.	**59,479**
FY 2014	• Reflects realignment of this subprogram to the Material Consolidation and Civilian Sites subprogram.	**0**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Reflects realignment of this subprogram to the Material Consolidation and Civilian Sites subprogram.	**0** **0** **0** **0**

Material Consolidation and Conversion
Overview

The Material Consolidation and Conversion (MCC) subprogram reduces the complexity and 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 proliferation-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 highly enriched uranium (HEU) to low-enriched uranium (LEU). Beginning in FY 2014, this subprogram will be reflected within the Material Consolidation and Civilian Sites subprogram.

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 upgrade 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 HEU and plutonium into fewer, more secure locations.
- Achieves further risk reduction by downblending weapons exploitable HEU to non-weapons-exploitable LEU.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• Continued to convert attractive SNM to a less proliferation-attractive form (e.g., HEU to LEU) and to consolidate material to fewer sites and fewer buildings where possible. Converted approximately 1MT of HEU to LEU, for a cumulative total of 14.8MT.	**14,306**

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2013	• Continue converting attractive SNM to a less proliferation-attractive form (e.g., HEU to LEU) and consolidating material to fewer sites and fewer buildings where possible. Anticipate converting approximately 1MT of HEU to LEU, for a cumulative total of 16MT.	**14,394**
FY 2014	• Reflects realignment of this subprogram to the Material Consolidation and Civilian Sites subprogram.	**0**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Reflects realignment of this subprogram to the Material Consolidation and Civilian Sites subprogram.	**0** **0** **0** **0**

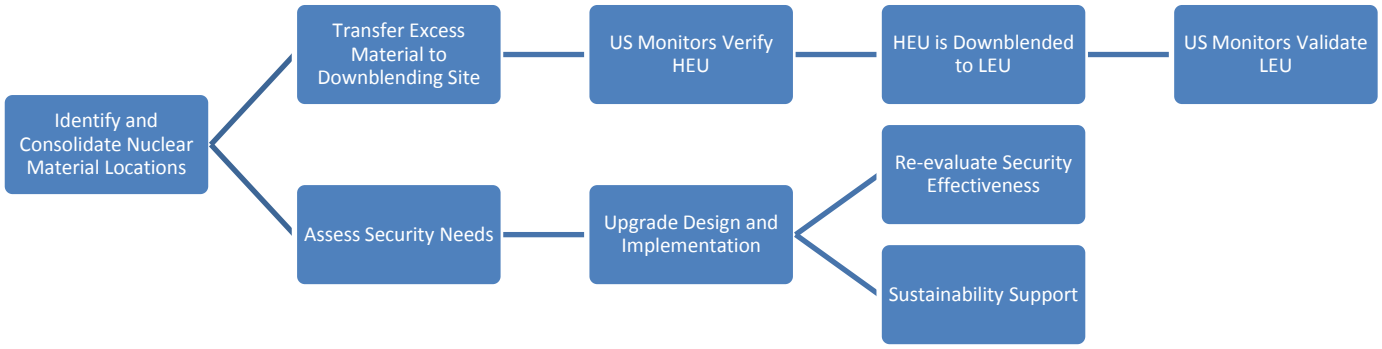
Material Consolidation and Civilian Sites
Overview

The Material Consolidation and Civilian Sites (MCCS) subprogram combines the two highly interconnected Civilian and Material Consolidation and Conversion (MCC) subprograms. In both subprograms, the MCCS office promotes consolidation of nuclear footprint in order to reduce the costs of security upgrades and employs a graded strategy to protect, control, and account for highly attractive nuclear material.

MCCS improves security at 18 civilian nuclear sites in Russia, supports Nuclear Security Culture programs in Russia and other countries, supports specific MPC&A projects outside of Russia, 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 co-financing security upgrades for highly attractive nuclear material at each site. Rapid MPC&A upgrades are installed to mitigate the immediate risk of theft and diversion until long-term, more comprehensive MPC&A upgrades are designed, installed, and placed into operation. Follow-on collaboration is focused on improving systems and practices that support sustainability, and identifying gaps in the protection strategy.

This subprogram also reduces the complexity and long-term costs of securing weapons-useable nuclear material in Russia through the Material Consolidation and Conversion (MCC) project, which consolidates excess material into fewer, more secure locations and converts highly enriched uranium (HEU) into a less proliferation-attractive form. This approach decreases the number of proliferation-attractive targets as well as the equipment and personnel costs associated with securing SNM. The subprogram works with the downblending site to identify excess HEU that can be downblended. The U.S. monitors verify the specifications of the feed material, the downblending site converts the material into a less proliferation-attractive form, and then U.S. monitors validate the specifications of that product.

Sequence



Benefits

- Reduces the complexity and long-term costs of securing weapons-useable nuclear material in Russia.
- Reduces the proliferation risk associated with weapons-useable nuclear materials by consolidating excess, non-weapons HEU and plutonium into fewer, more secure locations.
- Achieves further risk reduction by downblending weapons useable HEU to LEU.
- Improves security at 18 civilian nuclear sites in Russia by installing upgrades for proliferation-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 security enhancements, e.g., perimeter upgrades, as warranted.
- Emphasizes increased cost sharing with Rosatom civilian sites, focused on continued modernization and sustainability of security systems.
- Improves nuclear security through the Nuclear Security Culture program, which promotes the importance of personal responsibility for MPC&A 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 subprogram will directly impact Chinese domestic nuclear security training through U.S. support for the 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

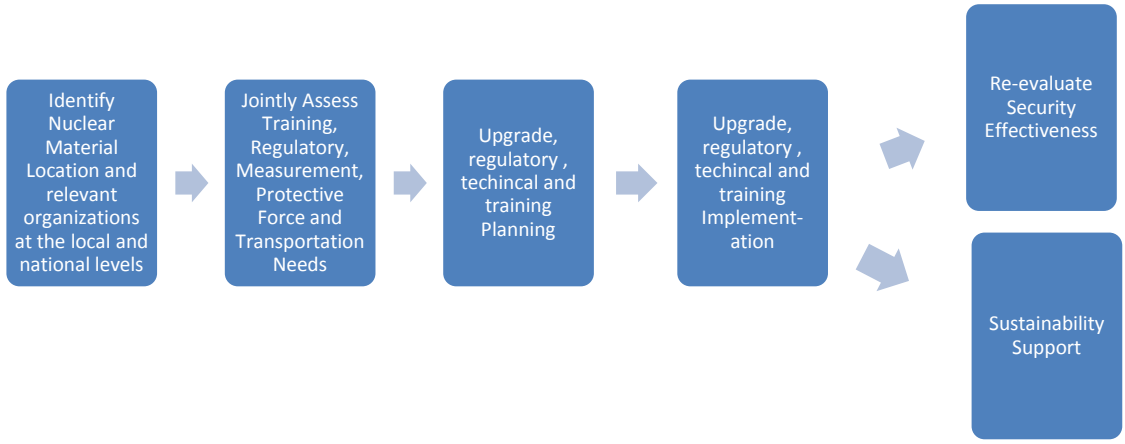
Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• Activities were conducted under the Civilian Nuclear Sites and Material Consolidation and Conversion subprograms.	**0**
FY 2013	• Activities were conducted under the Civilian Nuclear Sites and Material Consolidation and Conversion subprograms.	**0**
FY 2014	• 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. • Continue cost-sharing of MPC&A upgrades that focus on addressing outsider and insider threats. • Continue to provide sustainability support to civilian nuclear sites with MPC&A upgrades, including support for training, procedures, maintenance, equipment repair, critical spare parts, performance testing, and other activities. • Support MPC&A activities with countries of concern outside Russia. • Continue to enhance nuclear security culture, promoting the importance of personal responsibility for MPC&A in Russia, the Former Soviet Union, China, and other countries and the International Atomic Energy Agency (IAEA). • Continue U.S. expert technical engagement on the China COE as construction completes and the facility goes into operation. • Complete train-the-trainer activities and transition MPC&A best practices workshops to Chinese taught courses for the COE. • Continue training, technical exchanges, and consultations to improve security at nuclear material locations. • Continue converting attractive SNM to a less proliferation-attractive form (e.g., HEU to LEU) and consolidating material to fewer sites and fewer buildings where possible. Anticipate converting approximately 0.8MT of HEU to LEU, reduced from 1.5MT as expected in the FY 2013 President's Request.	**132,299**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Continue providing sustainability support, at a significantly reduced level, to civilian nuclear sites with MPC&A upgrades, including support for training, procedures, maintenance, equipment repair, critical spare parts, performance testing, and other activities. • Continue financing reduced number of joint MPC&A upgrade projects that focus on addressing outsider and insider threats. Degree of cost-sharing on joint upgrade activities is expected to increase throughout outyear period. • Continue to enhance nuclear security culture, promoting the importance of personal responsibility for MPC&A in Russia, the Former Soviet Union, China, and other countries and the IAEA. • Continue to support MPC&A in countries of concern outside Russia.	**155,974** **160,447** **160,922** **72,670**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	• Continue U.S. expert technical engagement with China on modern nuclear material security methodologies and best practices, in support for the COE, starting in FY 2016. • Continue training, technical exchanges, and consultations to improve security at nuclear material locations. • Continue converting attractive SNM to a less proliferation-attractive form (e.g., HEU to LEU) and consolidating material to fewer sites and fewer buildings where possible. Anticipate converting approximately 2.2MT of HEU to LEU, reduced from 5MT for a cumulative total of 19.2MT, reduced from a cumulative of 22 MT as expected in the FY 2013 President's Request.	

National Infrastructure and Sustainability Program
Overview

The National Infrastructure and Sustainability Program assists Russia and other partner countries in developing and maintaining a nationwide MPC&A infrastructure that supports the sustainability of U.S.-funded security upgrades and improves security practices nationally. Projects include developing and revising MPC&A 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 partner countries.

Sequence



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, within transportation organizations, and within protective force organizations.
- Reduces risk by assisting Russia and other partner countries to properly train and equip protective force organizations responsible for guarding nuclear material at sites and in transit.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• Began work to provide force-on-force, direct fire simulation training equipment to improve nuclear site protective force training and performance testing capabilities. • Sustained and replaced infrastructure equipment and updated curriculum at the Interdepartmental Specialized Training Center (PP), The Russian Methodological Training Center (MC&A), and the Siberian Institute of Advanced Qualification (SIAT).	**60,928**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	• Began development of a Bachelor's program in MPC&A at the Moscow Engineering Physics Institute and Tomsk Polytechnic University. • Continued 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. • Rostechnadzor completed 7 MPC&A Advanced Inspection Exercises and Rosatom 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. Activities to develop Measurement Methodology (MM) continued, and two new MMs and one new Reference Material (RM) were initiated. Several MMs were scheduled to be completed and several hundred RMs were delivered. Testing of measurement equipment and development of sustainable equipment support infrastructure continued. • Continued work provided updated command and control communications systems at Rosatom sites. Sustained three 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 1,395 participants. • Supported MPC&A graduate programs at National Research Nuclear University (MEPhI) and Tomsk Polytechnic University (TPU).	
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 Russian Ministry of Internal Affairs - Internal Troops 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 five 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 1,165 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).	**61,301**

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2014	• Provide upgraded command and control radio systems at 3 Russian sites. Retrofit tactical radio systems at an additional 3 sites. • Support retrofit of explosive detectors at 18 Rosatom facilities. • Initiate a cumulative total of 273 MPC&A regulations for the Russia and FSU countries. • Rostechnadzor will complete 4 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 through 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 50 courses at Russian training facilities on MPC&A and protective force topics with approximately 790 participants. • Sustain and replace infrastructure equipment and update curriculum at the Interdepartmental Specialized Training Center (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).	**37,796**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Provide upgraded command and control radio systems at 3 Russian sites. Retrofit tactical radio systems at an additional 3 sites. • Complete a cumulative total of 383 MPC&A regulations in for the Russia and FSU countries. • Rostechnadzor will complete a total of 6 advanced MPC&A inspection exercises with a decreasing number supported each year. • Support a sustainable and effective measurement-based Material Control and Accountability (MC&A) program though development of MM and RMs. • Install radio systems at all Rosatom and non-Rosatom sites in the MPC&A program, and sustain protective force equipment at 18 Russian sites. • Provide MILES equipment to Atomguard and the MVD-IT to support effective protective force performance testing. • Support approximately 150 courses at Russian training facilities on MPC&A and protective force topics. • Sustain and replace infrastructure equipment and update curriculum at the Interdepartmental Specialized Training Center (PP), The Russian Methodological Training Center (MC&A), and the Siberian Institute of Advanced Qualification (SIAT). • Support MPC&A graduate programs at National Research Nuclear University (MEPhI) and Tomsk Polytechnic University (TPU).	**37,806** **39,719** **32,816** **31,302**

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 SLD Program, in coordination with inter-agency partners, completed a thorough strategic review and analysis to determine the most efficient and effective approach to closing key gaps in the global nuclear detection architecture and increase the impact of detection and deterrence using fixed and mobile deployments. The conclusions of this review were presented to the Global Nuclear Detection Architecture (GNDA) interagency working group, which included recommendations regarding SLD in the GNDA Implementation Plan. The review recommended a plan to address remaining fixed detection gaps, expand mobile detection, and fully fund sustainability. The review also resulted in the reorganization of SLD Core and Megaports Programs under a joint implementation program and sustainability effort funded in one SLD subprogram.

By the start of FY 2013, the Core program had 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 completed over 449 priority sites and deployed 34 mobile systems to 11 countries. Due to the volume of work in each country and the number of countries, the Core program works in many locations simultaneously. The SLD Megaports Initiative had 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. Funding in FY 2013 and beyond will ensure the effective use and transition to full sustainment of the deployed equipment by Partner Countries. SLD is expanding its efforts to attract host-country and industry funding of radiation detection systems. Funding for technical advice related to these installations is included in FY 2013 and FY 2014.

Sequence

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, international partners, thus serving as a part of the US Global Nuclear Detection Architecture.
- Provides a flexible and adaptable approach to preventing nuclear smuggling in support of the Nuclear Summit agenda.
- Reduces the chances of an adversary gaining access to special nuclear material and material that can be used in a Radiological Dispersal Device 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.
- Through close coordination and collaboration with partner countries and other donor countries and organizations, SLD provides leadership in the area of non-proliferation and anti-nuclear smuggling, ensuring 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 radiation 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 2012		**262,072**
FY 2013		**263,675**
FY 2014		**140,000**
FY 2015		**130,000**
FY 2016		**140,000**
FY 2017		**140,576**
FY 2018		**154,822**
Core Program		
FY 2012	• Completed installation of radiation detection equipment at an additional 28 sites, increasing the total sites with completed installations to 449. • Initiated installation of National Communications Systems in 4 countries and continued Russia national communications network activities. • Provided training in equipment maintenance and alarm response in 11 countries. • Provided mobile detection capability to law enforcement personnel for use at internal checkpoints in 9 countries. • Provided 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. • Continued to maintain equipment installed by the U.S. Department of Defense in Uzbekistan and to transition sustainability responsibilities to the partner country. In addition to ongoing activities to implement the SLD Core program in countries of strategic importance, continued efforts to deploy radiation detection technologies at key land border crossings, airports, and seaports in support of interagency priorities.	**129,402**
FY 2013	• Provide radiation detection equipment to sites in 14 countries. • Install National Communications Systems in 5 countries. • Continue providing training in equipment maintenance and alarm response to law enforcement personnel in 17 countries. • Continue to provide mobile detection capability to law enforcement personnel for use at internal checkpoints in up to 6 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 over 200 sites/ports and over 30 mobile systems in countries where the SLD Program has installed such equipment. • Continue to provide technical advice to partner countries for over 330 sites/ports and 10 mobile systems that are being indigenously sustained. • Develop and pilot the technical exchange program which provides guides and consulting to encourage and support countries installing their own detection equipment. • Continue to maintain equipment installed by the U.S. Department of Defense in Uzbekistan.	**130,193**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Second Line of Defense		
FY 2014	• Core program combined with Megaports under a single SLD subprogram.	**0**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Core program combined with Megaports under a single SLD subprogram.	**0** **0** **0** **0**
Megaports		
FY 2012	• Completed installations at 5 additional Megaports (increasing the number of completed ports to 44). This involved providing site surveys, engineering assessments, radiation detection equipment design procurement, installation and system level acceptance testing (SLAT). • Deployed Mobile Radiation Detection and Identification System (MRDIS) to 2 ports. • 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 32 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 over 30 countries where the SLD Megaports Initiative has installed such equipment. • Complete 1 Megaport. • Continue outreach to governments and industry to encourage provision of radiation detection equipment at key seaports.	**133,482**
FY 2014	• Core program combined with Megaports under a single SLD subprogram.	**0**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Core program combined with Megaports under a single SLD subprogram.	**0** **0** **0** **0**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Second Line of Defense		
FY 2012	• Activities funded under separate Core and Megaports subprograms.	**0**
FY 2013	• Activities funded under separate Core and Megaports subprograms.	**0**
FY 2014	• Provide mobile and man-portable detection capability to 6 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 17 countries. • Provide fixed radiation detection systems at 19 sites in 8 countries, focusing on key gaps in the global nuclear detection architecture. • Connect sites to national communications systems in 6 countries including the continuation of the communications system in Russia.	**140,000**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Second Line of Defense		
	• Continue outreach to governments and industry to encourage provision of radiation detection equipment at key seaports. • Continue to provide sustainability and transition support in the form of maintenance and/or repair of equipment, training, and/or technical collaboration and support for radiation detection systems at over 180 sites/ports where the SLD Core Program has installed such equipment. Note: SLD will be actively transitioning to partner countries full responsibility for maintenance of and training on installed SLD systems from FY 2014 through FY 2021, with planned completion in 2021. • 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 assumption of maintenance and training activities.	
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Provide mobile and man-portable detection capability to approximately 20 additional countries for use by law enforcement at internal checkpoints in countries of strategic interest. • Complete fixed radiation detection systems at approximately 70 sites in 9 countries, focusing on key gaps in the global nuclear detection architecture. • Complete connection of sites to national communications systems in 6 countries including the completion of the communications system in Russia in FY 2015. • Continue outreach to governments and industry to encourage provision of radiation detection equipment at key seaports. • Continue to develop potential for other governments to assist USG during times of enhanced steady state operations. • Continue technical collaboration with industry and countries seeking to install their own radiation detection systems. • Continue to transition full responsibility for the long term operation (sustainability) of over 500 installed SLD systems to partner countries. Transition and sustainability activities will continue until 2021. • Fund exercises and workshops, on country and regional level, to ensure optimal operation of equipment and improve regional response to trafficking incidents.	**130,000** **140,000** **140,576** **154,822**

Fissile Materials Disposition
Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Fissile Materials Disposition			
U.S. Surplus Fissile Materials Disposition			
Operations and Maintenance (O&M)			
U.S. Plutonium Disposition [a]	205,632	206,890	157,557
U.S. Uranium Disposition [a]	26,000	26,159	25,000
Subtotal, O&M	**231,632**	**233,049**	**182,557**
Construction [a]	452,754	487,729	320,000
Total, U.S. Surplus Fissile Materials Disposition	**684,386**	**720,778**	**502,557**
Russian Surplus Fissile Materials Disposition			
Russian Materials Disposition [a]	1,000	1,006	0
Total, Fissile Materials Disposition	**685,386**	**721,784**	**502,557**

Out-Year Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
Fissile Materials Disposition					
U.S. Surplus Fissile Materials Disposition					
Operations and Maintenance (O&M)					
U.S. Plutonium Disposition [a]	157,557	201,695	208,904	230,408	224,487
U.S. Uranium Disposition [a]	25,000	20,000	20,000	15,000	15,000
Subtotal, O&M	**182,557**	**221,695**	**228,904**	**245,408**	**239,487**
Construction [a]	320,000	0	0	0	0
Total, U.S. Surplus Fissile Materials Disposition	**502,557**	**221,695**	**228,904**	**245,408**	**239,487**
Russian Surplus Fissile Materials Disposition					
Russian Materials Disposition [a]	0	0	0	0	0
Total, Fissile Materials Disposition	**502,557**	**221,695**	**228,904**	**245,408**	**239,487**

[a] This represents the proposed control level. Line-item construction projects remain individual controls.

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
National Defense Authorization Act for FY 2013 (P.L. 112-239)
The Continuing Appropriations Resolution, 2013 (P.L. 112-175)

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. The program also plays an important role in the international discussion of the management and disposition of plutonium.

Program Accomplishments and Milestones

In FY 2012, FMD achieved a number of significant accomplishments. The amended U.S.-Russia Plutonium Management and Disposition Agreement (PMDA) commits each country to dispose of no less than 34 metric tons (MT) of excess weapon-grade plutonium (enough combined material for at least 17,000 nuclear weapons). To implement the PMDA in the U.S., FMD has made considerable progress on the construction of the U.S. Mixed Oxide (MOX) Fuel Fabrication Facility (MFFF), while achieving more than eleven million safe work hours. Through September 2012, more than 128,400 cubic yards of reinforced concrete and 20,800 tons of rebar were installed and construction of the Technical Support Building was completed (making a cumulative total of 12 out of 16 buildings completed). In addition to continuing installation of commodities and mechanical equipment, construction and installation of the steam boiler building, which will provide the steam to both low and high activity waste evaporators was completed for the Waste Solidification Building (WSB). In addition, Los Alamos National Laboratory converted 200 kg of plutonium metal to oxide as early feedstock for the MFFF. In preparation for PMDA implementation in Russia, Russia continued construction of its disposition reactor, the BN-800, at the Beloyarsk nuclear power plant. In addition, Russia has started construction of its MOX fuel fabrication facility. Russian officials have also provided a draft list of milestones to FMD that describes how the U.S. $400 million pledge of assistance might be applied in Russia.

FMD also eliminated a cumulative 141MT of surplus U.S. highly enriched uranium (HEU) (enough for more than 3,000 nuclear weapons) by down-blending it to low-enriched uranium (LEU) for peaceful use as fuel in power and research reactors. In addition, FMD completed the down-blending for the American Fuel Supply (AFS) program in December 2012, which resulted in approximately 235MT of LEU to serve as a backup fuel supply for foreign or domestic reactors in the event of a supply disruption.

Program Planning and Management

The Office of Fissile Materials Disposition (FMD) supports NNSA and DOE strategic objective "Secure Our Nation" by enhancing nuclear security and reducing global nuclear dangers through efforts to improve the security of weapon-usable materials. The updated measures are compiled and provided in the FY 2014 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 regular 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 Russian Government and 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. 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.

Two external factors present challenges to the overall achievement of the programs' strategic goal:

- Maintenance and availability of facilities required to support the plutonium disposition mission, and

- Retaining employees with the skills required to maintain U.S. Nuclear Quality Assurance (NQA-1) standards.

Major Outyear Priorities and Assumptions

Outyear funding levels for the FMD program total $935,494,000 for FY 2015 through FY 2018. The Program plays a key role in supporting the Secretary's goal of enhancing nuclear security through defense, nonproliferation, and environmental efforts by ensuring that surplus fissile materials in the U.S. and Russia are disposed of.

NNSA remains committed to the plutonium disposition mission. However, considering preliminary cost increases and the current budget environment, the Administration is conducting an assessment of alternative plutonium disposition strategies in FY 2013, and will identify options for FY 2014 and the outyears.

Program Goals and Funding

The FMD corporate performance measures support the NNSA goal of "Secure 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 surplus Russian weapon-grade plutonium under the U.S. - Russia Plutonium Management and Disposition Agreement. In addition, FMD also manages the disposition of U.S. 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.

FMD also plays an important role in the international discussion of the management and disposition of plutonium.

Performance Measures[a]

Performance Goal (Measure)	**Mixed Oxide (MOX) Fuel Fabrication Facility** - Cumulative percentage of the design, construction, and cold start-up activities completed for the Mixed Oxide (MOX) Fuel Fabrication Facility.		
Fiscal Year	**2012**	**2013**	**2014**
Target	70% completed	81% completed	90% completed
Result	**Not Met** – 67.8		
Endpoint Target	By the end of FY 2016, complete design, construction, and cold start-up activities for the MOX facility. Note: The contractor has submitted a baseline change proposal (BCP) that is currently being reviewed by the Department.		

[a]As appropriate, performance measures will be updated to reflect the slow down for the current plutonium disposition strategy and associated activities beginning in the second half of FY 2013 and the decision resulting from the assessment of alternative plutonium disposition strategies in the out years.

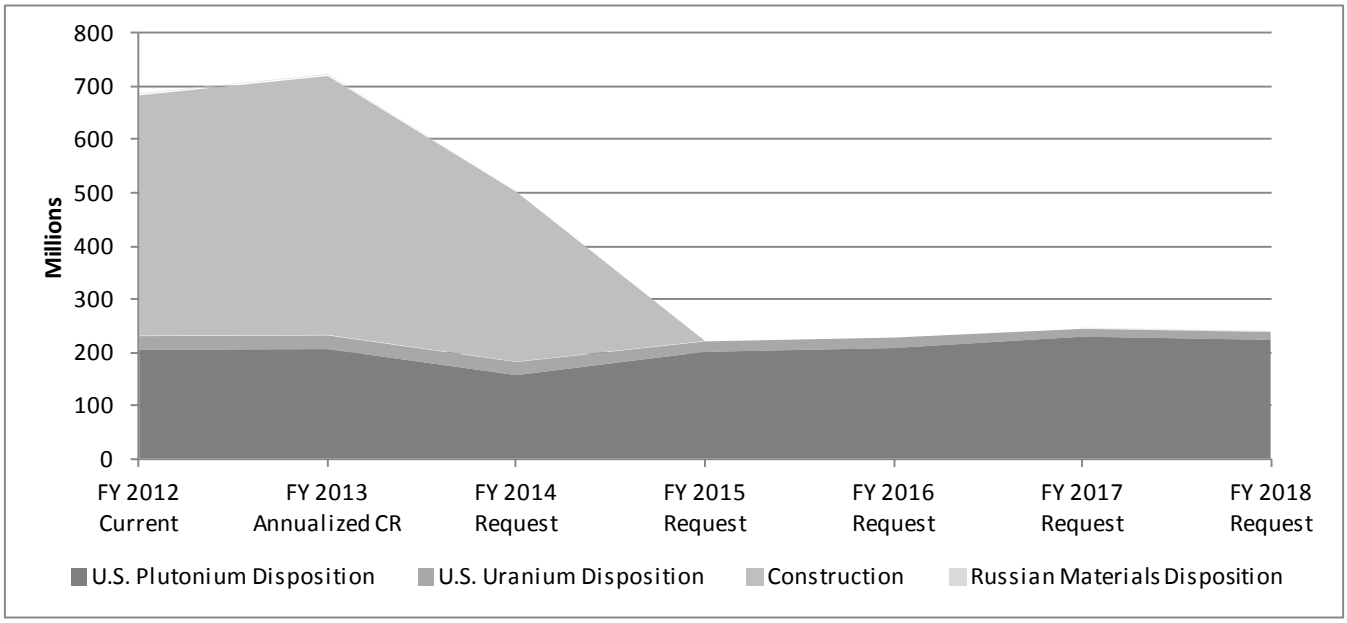
Performance Goal (Measure)	**U.S. Highly Enriched Uranium (HEU) Downblended** - Cumulative amount of surplus U.S. highly enriched uranium (HEU) down-blended or shipped for down-blending.		
Fiscal Year	**2012**	**2013**	**2014**
Target	139 MT	143 MT	146 MT
Result	**Exceeded** – 141.1		
Endpoint Target	By the end of FY 2040, complete disposition of 183 MT of surplus HEU. The overall amount of HEU available for down-blending and the rate at which it will be down-blended is conditional upon decisions regarding the U.S. nuclear weapons stockpile, the pace of warhead dismantlement, the processing of additional HEU through H Canyon, and disposition paths for weapon pits containing HEU, etc. Note: FY 2013 – FY 2018 annual targets were revised in FY 2012. The change in the target reflects the significant rise in productivity under the TVA BLEU, AFS and MOX/LEU inventory projects. The increase was factored into current and future years to maintain the integrity of the target performance measurement.		

Performance Goal (Measure)	**U.S. Plutonium Disposition (LANL)** - Cumulative kilograms of plutonium metal converted to oxide at Los Alamos National Laboratory.		
Fiscal Year	**2012**	**2013**	**2014**
Target	375 kg	675 kg	975 kg
Result	**Exceeded** - 442		
Endpoint Target	By 2018, complete operations for 2 MT (2,000 kg) of plutonium converted to oxide.		

Performance Goal (Measure)	**U.S. Plutonium Disposition (H-Canyon) -** Cumulative kilograms of plutonium converted to oxide at SR H-Canyon.		
Fiscal Year	**2012**	**2013**	**2014**
Target	N/A	N/A	180 kg
Result			
Endpoint Target	By 2018, complete operations for 3.7 MT of plutonium converted to oxide.		

Performance Goal (Measure)	**WSB** - Cumulative percentage of the design, construction, and cold start-up activities completed for the Waste Solidification Building (WSB).		
Fiscal Year	**2012**	**2013**	**2014**
Target	95% completed	87% completed	96% completed
Result	**Not Met** - 84		
Endpoint Target	By the end of FY 2015, complete design, construction, and cold start-up activities for the WSB. Note: NNSA has changed the 2013 target from the target in last year's budget. The FY 2013 Budget had targeted 100% completion of the WSB in 2013. The contractor submitted a baseline change proposal that was validated by an external independent review and approved by the Acquisition Executive in December 2012. The WSB project incurred cost increases and schedule delays caused primarily by poor M&O management of subcontract execution and performance; early use of contingency for construction subcontract award; and design errors and omissions by M&O contractor. The previous baseline scheduled the completion of the project in FY 2013.		

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 Current	FY 2014 Request	FY 2014 Request vs. FY 2012 Current
U.S. Surplus Fissile Materials Disposition			
Operations and Maintenance (O&M)			
· **U.S. Plutonium Disposition**	**205,632**	**157,557**	**-48,075**
The decreased funding slows down construction of the MFFF project and associated supporting activities due to assessment of alternative plutonium disposition strategies.			
· **U.S. Uranium Disposition**	**26,000**	**25,000**	**-1,000**
The decrease reflects delaying disposition of low equity discards (processing of by-products).			
Total, U.S. Plutonium and Uranium Disposition (O&M)	**231,632**	**182,557**	**-49,075**
Construction			
· **99-D-141-02, WSB**	**17,582**	**0**	**-17,582**
The decreased funding slows down construction of the WSB and associated supporting activities due to assessment of alternative plutonium disposition strategies.			
· **99-D-143, MOX Fuel Fabrication Facility (MFFF)**	**435,172**	**320,000**	**-115,172**
The decreased funding slows down construction of the MFFF project and associated supporting activities due to assessment of alternative plutonium disposition strategies.			
Total, U.S. Surplus Fissile Materials Disposition	**684,386**	**502,557**	**-181,829**

	(Dollars in Thousands)		
	FY 2012 Current	FY 2014 Request	FY 2014 Request vs. FY 2012 Current
Russian Surplus Fissile Materials Disposition			
· U.S. Support for Russian Plutonium Disposition (funds spent in U.S.)	**1,000**	**0**	**-1,000**
The decrease reflects the use of prior year uncosted balances to support these activities.			
· U.S. Support for Russian Plutonium Disposition (funds spent in Russia)	**0**	**0**	**0**
No change.			
Total Funding Change, Fissile Materials Disposition	**685,386**	**502,557**	**-182,829**

U.S. Surplus Fissile Materials Disposition - U.S. Plutonium Disposition
Overview

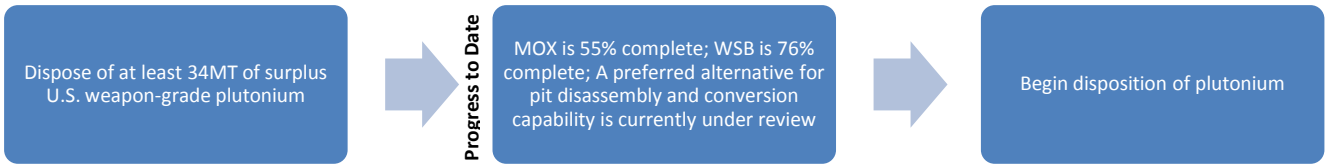
The goal of the U.S. Plutonium Disposition subprogram is to dispose of at least 34 metric tons (MT) of surplus U.S. weapon-grade plutonium in accordance with U.S. policy and the amended U.S. - Russia Plutonium Management and Disposition Agreement (PMDA).

The MFFF project continues to have cost and schedule pressures due to several factors. As a result, NNSA tasked its contractor, Shaw AREVA MOX Services (MOX Services), to conduct a bottoms-up review and update cost and schedule estimates to provide an 85% confidence level. In late FY 2012, MOX Services submitted a Baseline Change Proposal (BCP) with the resulting project cost and schedule estimates to NNSA. An independent cost estimate (ICE) and external independent review (EIR) to validate these estimates are ongoing and is projected to be completed in 2013. The contractor-submitted BCP increases the current TPC from $4.8B to $7.7B and extends the schedule from October 2016 to November 2019, which includes one year of schedule contingency. The final TPC increase cannot be established until the external independent review is completed to validate the BCP and provided to the Acquisition Executive (AE) for approval as required by DOE O 413.3B.

In addition, planned operations costs for the MFFF (separate from construction of the project) have increased and are estimated to cost approximately $543M annually. Furthermore, the planned operations for the WSB (separate from construction of the project) have also increased and are estimated to cost approximately $95M annually. Defense Programs (DP) has established an independent cost estimating capability that executes independent cost analysis and program evaluations; FMD requested DP to perform an independent estimate of the annual operating costs for the MFFF. FMD expects to get DP's analysis for the MOX operating life cycle costs in spring 2013.

NNSA remains committed to the plutonium disposition mission. However, considering the preliminary cost increases and the current budget environment, the Administration is conducting an assessment of alternative plutonium disposition strategies in FY 2013, and identifying options for FY 2014 and the out years. As a result, NNSA will slow down the MOX project and other activities associated with the current plutonium disposition strategy during the assessment period. This budget reflects the funding consistent with this decision.

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.
- 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 2012		**205,632**
FY 2013		**206,890**
FY 2014		**157,557**
FY 2015		**201,695**
FY 2016		**208,904**
FY 2017		**230,408**
FY 2018		**224,487**
MOX Irradiation, Feedstock, and Transportation		
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**—supported qualification, licensing, and irradiation of MOX fuel in existing nuclear reactors; completed studies of MOX fuel use in TVA reactors; developed topical reports for submission to the Nuclear Regulatory Commission; designed the test reactor program to qualify MOX fuel designs for pressurized water reactors and boiling water reactors from multiple fuel suppliers, and commenced discussions for fuel supply agreements with TVA and potentially other utilities. • **Feedstock**—supported activities necessary to characterize and convert plutonium and depleted uranium into chemical forms that can be used to fabricate MOX fuel; LANL continued 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; initiated activities 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 plutonium over the following 5 years; continued activities to support the conversion of DOE-owned depleted uranium hexafluoride to uranium dioxide necessary for MOX fuel fabrication; and continued activities to further characterize non-pit feed materials for MFFF also continue. • **Storage**—supported storage of surplus weapon-grade plutonium, both pits and oxide, including surveillance and monitoring activities; continued storage of surplus plutonium at Pantex and LANL; and continued packaging surplus pits for shipment from Pantex to LANL for ARIES conversion activities. • **Transportation**—supported the development, certification, and maintenance of containers and fuel loading equipment to transport pits, plutonium oxide, and fresh MOX fuel necessary for plutonium disposition; continued development of a MOX fresh fuel shipping container and a new container for transporting MOX fuel for boiling water reactors; continued to procure containers for transportation of plutonium pits and plutonium oxide; and continued packaging and loading equipment development.	**86,967**

Fiscal Year	Activity	Funding (Dollars in Thousands)
U.S. Plutonium Disposition		
FY 2013	Beginning in 3Q FY 2013, NNSA will begin to slow down activities associated with the current plutonium disposition strategy while assessing alternative strategies: • **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 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 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 oxide; (2) conduct process development and detailed cost estimate and schedule in support of steady state feedstock production; (3) initiate processing of existing plutonium metals and oxides in the H-Canyon and HB Line at Savannah River Site as part of a five year campaign to process up to 3.7MT of material, and (4) 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 to transport surplus plutonium for disposition. Continue to develop a MOX fresh fuel shipping container and a new container for transporting MOX fuel for boiling water reactors.	**70,000**
FY 2014	Continue at a significantly reduced pace activities associated with the current plutonium disposition strategy while assessing alternative strategies: • **Feedstock**—Funding supports at a reduced pace: (1) continue to disassemble nuclear weapon pits and convert the resulting plutonium metal into an oxide form using the LANL ARIES process, and (2) continue processing of existing plutonium metals and oxides in the H-Canyon and HB Line at Savannah River Site as part of the campaign to process up to 3.7MT of plutonium material, including the procurement and installation of plutonium oxide inner canning equipment. • **Transportation**—Funding supports the development, certification, procurement, and maintenance of containers to transport surplus plutonium for disposition. Procure containers for shipping surplus plutonium as necessary.	**63,000**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Scope and costs will be updated to reflect the decision resulting from the assessment of alternative plutonium disposition strategies in the out years.	**TBD** **TBD** **TBD** **TBD**
MFFF Other Project Cost Activities (OPC)		
FY 2012	• Supported project activities such as management oversight, design reviews, facility start-up, testing, and licensing.	**47,035**

Fiscal Year	Activity	Funding (Dollars in Thousands)
U.S. Plutonium Disposition		
	• Continued 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. • Continued 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. • Supported the first stage of operating start-up staffing and related training, NNSA oversight, and additional NRC inspection levels.	
FY 2013	Beginning in 3Q FY 2013, NNSA will begin to slow down activities associated with the current plutonium disposition strategy while assessing alternative strategies: • Continue management oversight and licensing activities along with safety, security, and physical protection activities.	**40,000**
FY 2014	• Continue construction activities at a significantly reduced pace while assessing alternative plutonium disposition strategies.	**40,000**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Scope and costs will be updated to reflect the decision resulting from the assessment of alternative plutonium disposition strategies in the out years.	**TBD** **TBD** **TBD** **TBD**
MFFF Operating Expenses (O&M)		
FY 2012	• Supported activities to maintain the hot start-up schedule and prepared Early Option 2 (EO2) proposal. • Supported the costs associated with background investigations and security clearances for MFFF operators.	**100**
FY 2013	Beginning in 3Q FY 2013, NNSA will begin to slow down activities associated with the current plutonium disposition strategy while assessing alternative strategies: • MOX operating funds were no longer required in FY 2013 due to delays in MFFF start-up activities.	**0**
FY 2014	Continue, at a significantly reduced pace, with activities associated with the current plutonium disposition strategy while assessing alternative strategies: • MOX operating funds are not required at this time due to delays in MFFF start-up activities.	**0**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Scope and costs will be updated to reflect the decision resulting from the assessment of alternative plutonium disposition strategies in the out years.	**TBD** **TBD** **TBD** **TBD**

Fiscal Year	Activity	Funding (Dollars in Thousands)
U.S. Plutonium Disposition		
Waste Solidification Building (WSB) (OPC)		
FY 2012	• 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 (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	Beginning in 3Q FY 2013, NNSA will begin to slow down activities associated with the current plutonium disposition strategy while assessing alternative strategies: • Provide OPC support to construction as needed. M&O Contractor activities associated with integrated system testing and preparation for facility operations will be slowed down.	**25,798**
FY 2014	Continue construction activities at a significantly reduced pace while assessing alternative plutonium disposition strategies: • Provide OPC support as needed to support facility construction activities.	**20,000**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Scope and costs will be updated to reflect the decision resulting from the assessment of alternative plutonium disposition strategies in the out years.	**TBD** **TBD** **TBD** **TBD**
Waste Solidification Building (WSB) Operating Expenses (O&M)		
FY 2012	• Not applicable.	**0**
FY 2013	Beginning in 3Q FY 2013, NNSA will begin to slow down activities associated with the current plutonium disposition strategy while assessing alternative strategies: • The following activities will be performed at the minimal required level: maintain proper storage requirements for equipment in the process building by operating the main HVAC units; perform preventive maintenance and repair of equipment as needed; and maintain support from external organizations.	**7,000**
FY 2014	Continue, at a significantly reduced pace, activities associated with the current plutonium disposition strategy while assessing alternative plutonium disposition strategies: • Continue the following activities at the minimal required level with prior year balances: maintain proper storage requirements for equipment in the process building by operating the main HVAC units; perform preventive maintenance and repair of equipment as needed; and maintain support from external organizations.	**0**

Fiscal Year	Activity	Funding (Dollars in Thousands)
U.S. Plutonium Disposition		
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Scope and costs will be updated to reflect the decision resulting from the assessment of alternative plutonium disposition strategies in the outyears.	**TBD** **TBD** **TBD** **TBD**
Pit Disassembly and Conversion Facility (PDCF) Project (OPC)		
FY 2012	• Completed preparation of a project closeout plan; suspension and closeout of project contracts, work authorizations, and task orders; conducted project management closeout activities in accordance with DOE O 413.3B; developed and implemented a Records Management Plan; completed LANL D&T activities such as Direct Metal Oxidation (DMO) furnace and hydride/dehydride testing and supported initial development of conceptual design activities which are applicable to the preferred alternative; and completed transition and closeout of 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). No funds were requested beginning in FY 2013 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 was closed out by the end of FY 2012.	**0**
FY 2014	• Project was cancelled and closed out in FY 2012.	**0**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Project was cancelled and closed out in FY 2012.	**0** **0** **0** **0**
Plutonium Disposition and Infrastructure Program		
FY 2012	• Supported 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 sound manner. Supported 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.	**21,743**
FY 2013	Beginning in 3Q FY 2013, NNSA will begin to slow down activities associated with the current plutonium disposition strategy while assessing alternative strategies: • Conduct studies and analyses to support the development and initial phases of implementation of an alternative plutonium disposition strategy. Complete initial development of and then revise/maintain as necessary an overall Plutonium Disposition Program Execution Plan and other program guiding documents; complete NEPA analysis to support program decision; establish any required environmental and site use permits; update and maintain interface control documents; ensure compliance with applicable quality assurance requirements;	**64,092**

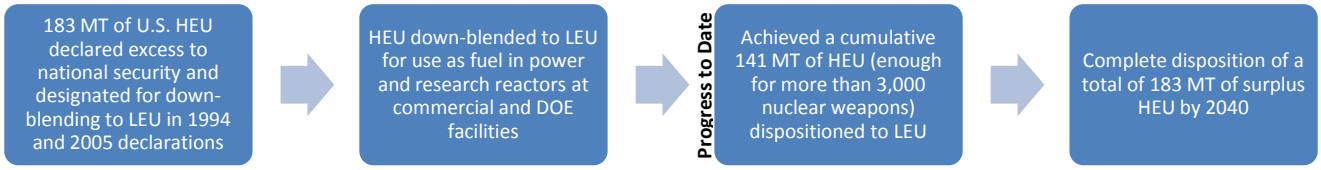
Fiscal Year	Activity	Funding (Dollars in Thousands)
U.S. Plutonium Disposition		
	conduct physical and programmatic assessments to ensure compliance with applicable DOE Orders and Standards; provide minimal required infrastructure and erosion control maintenance required to comply with safety and environmental standards, and fund activities which support Minority Serving Institution Partnerships Program for DNN activities.	
FY 2014	Continue, at a significantly reduced pace, with activities associated with the current plutonium disposition strategy while assessing alternative strategies: • Funding will support the continuation of the studies and analyses required to support the evaluation and selection of an alternative plutonium disposition strategy. Funding will also support the ongoing maintenance of critical programmatic documents including the Program Execution Plan, integrated schedules, performance measures, NEPA documentation, memoranda of agreement, and interface control documents; minimal required infrastructure and erosion control maintenance required to comply with safety and environmental standards; and DNN's portion of the SRS-wide common infrastructure maintenance activities including site roads, bridges, barricades, and utility distribution systems.	**34,557**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Scope and costs will be updated to reflect the decision resulting from the assessment of an alternative plutonium disposition strategy in the out years.	**201,695** **208,904** **230,408** **224,487**

U.S. Uranium Disposition
Overview

This funding supports the disposition of surplus U.S. highly enriched uranium (HEU) by down-blending it to low-enriched uranium (LEU). Several disposition activities are on-going and additional projects are being considered as HEU becomes available from planned weapon dismantlements.

Over the past decade, the National Nuclear Security Administration's (NNSA) surplus U.S. HEU disposition program has eliminated more than 140 metric tons of weapons-usable HEU by down-blending it to LEU for use in power and research reactors in the U.S. and abroad. The program has substantially reduced holdings of fissile materials throughout the Department of Energy complex, rid the world of more than 3,000 weapons worth of unneeded bomb material, helped reduce civil use of HEU worldwide, and made a significant contribution to electricity supplies. The program has also been able to off-set appropriations for the program by using bartering to pay for commercial down-blending services, and funds received from the sale of LEU are returned to the U.S. Treasury. The future focus is to continue progress in down-blending HEU to meet nonproliferation objectives, the use of derived LEU in a manner that does not adversely impact the commercial nuclear fuel markets, and the development of future projects from unallocated HEU inventories.

Sequence



Benefits

- Disposes U.S. 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 2012	• Research Reactor Fuel Project: Continued down-blending of HEU to LEU for use as fuel for foreign research reactors as part of the Global Threat Reduction Initiative. • MOX Backup LEU Inventory Project: Continued down-blending of HEU at Nuclear Fuel Services (NFS). The resulting LEU will create an inventory for potential backup use by utilities participating in the MOX plutonium disposition program. • American Fuel Supply (AFS): Continued down-blending (expected to complete December 2012). 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: Prepared 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.	**26,159**
FY 2014	• Continue research reactor fuel project and new multi-year disposition project; complete the 12.1MT MOX Backup LEU Inventory Project.	**25,000**

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2015	• Continue to down-blend surplus HEU that is currently unallocated in order to meet nonproliferation objectives; continue to down-blend HEU for research reactor needs in support of reactor conversion efforts.	**20,000**
FY 2016		**20,000**
FY 2017		**15,000**
FY 2018		**15,000**

Construction
Overview

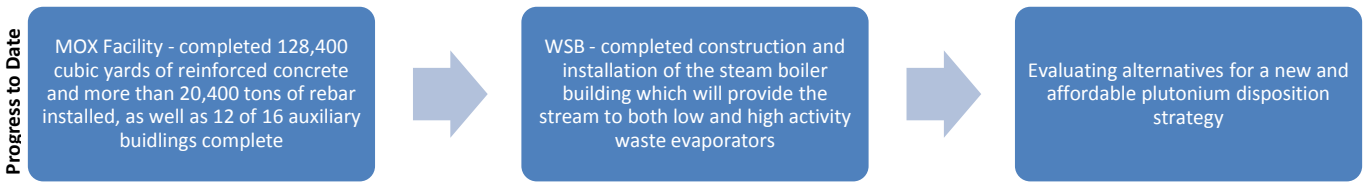
In order to dispose of surplus weapon-grade plutonium in accordance with the U.S.-Russia Plutonium Management and Disposition Agreement (PMDA) and existing public law (P.L. 107-314), the NNSA is constructing two facilities: a Mixed Oxide (MOX) Fuel Fabrication Facility (MFFF) and a Waste Solidification Building (WSB) 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 MFFF project continues to have cost and schedule pressures due to several factors. As a result, NNSA tasked its contractor, Shaw AREVA MOX Services (MOX Services), to conduct a bottoms-up review and update cost and schedule estimates to provide an 85% confidence level. In late FY 2012, MOX Services submitted a Baseline Change Proposal (BCP) with the resulting project cost and schedule estimates to NNSA. An independent cost estimate (ICE) and external independent review (EIR) team to validate these estimates is ongoing and is projected to be completed in 2013. The contractor-submitted BCP increases the current TPC from $4.8B to $7.7B and extends the schedule from October 2016 to November 2019, which includes one year of schedule contingency. The final TPC increase cannot be established until the external independent review is completed to validate the BCP and provided to the Acquisition Executive (AE) for approval as required by DOE O 413.3B. The BCP addresses the completion of construction and cold start-up activities of the MFFF and includes the option for the addition of plutonium metal oxidation capability, which is part of the preferred alternative to the standalone Pit Disassembly and Conversion Facility. The main drivers for the cost increases are: (1) initial project baseline was finalized before design was completed and the bottoms-up estimate identified increased quantities of commodities; (2) increased costs for engineered equipment and commodities; (3) increased installation rates to meet stringent nuclear quality standards, and (4) increased attrition of personnel.

The WSB project has also experienced schedule delays and associated cost impacts. The Savannah River Nuclear Solutions (SRNS) contractor submitted a BCP to increase the current TPC and extend the schedule from September 2013 to August 2015, which includes 12 months of schedule contingency. This BCP has been reviewed within the NNSA and validated by an external independent review team to validate the cost and schedule changes. This review and approval process was completed in December 2012. The review team recommended changes to the TPC and project completion date. These changes have been incorporated into the project baseline. The Acquisition Executive approved the BCP in December 2012 with a TPC of $414M and a completion date of August 2015. The prior TPC had been $344M and the completion date had been August 2013. The schedule delays have been caused by construction progress not meeting the planned dates and design errors/omissions that resulted in design changes. Cost increases have been caused by the schedule delays, revised pension and legacy benefit rates, and the use of a significant amount of contingency upfront required to award the construction subcontract.

NNSA remains committed to the plutonium disposition mission. However, considering the preliminary cost increases and the current budget environment, the Administration is conducting an assessment of alternative plutonium disposition strategies in FY 2013 and identifying options for FY 2014 and the out years. As a result, NNSA will slow down the MOX project and other activities associated with the current plutonium disposition strategy during the assessment period. This budget reflects the funding to support this decision.

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 2012		**452,754**
FY 2013		**487,729**
FY 2014		**320,000**
FY 2015		**0**
FY 2016		**0**
FY 2017		**0**
FY 2018		**0**
99-D-141-02, Waste Solidification Building, (WSB)		
FY 2012	• Activities focused on the physical construction, including the installation of mechanical and electrical systems inside the facility and the construction and installation of outside equipment and ancillary structures.	**17,582**
FY 2013	Beginning in 3Q FY 2013, NNSA will begin to slow down activities associated with the current plutonium disposition strategy while assessing alternative strategies: • The fixed-price construction contractor will complete facility construction (mechanical completion) and turnover the facility to the M&O contractor.	**49,894**
FY 2014	• Continue construction activities at a significantly reduced pace while assessing alternative plutonium disposition strategies. • Complete remaining fixed-price subcontractor construction activities (field work and QA records) with prior year balances.	**0**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Scope and costs will be updated to reflect the decision resulting from the assessment of alternative plutonium disposition strategies in the out years.	**TBD** **TBD** **TBD** **TBD**
99-D-143, MOX Fuel Fabrication Facility (MFFF)		
FY 2012	• Completed the MOX process plant portion of the main MFFF process building structure and continued installation of ventilation equipment, process piping, and electrical equipment; continued assembly and testing of gloveboxes and process equipment in the Process Assembly Facility. • Completed construction of the Technical Support Building.	**435,172**
FY 2013	Beginning in 3Q FY 2013, NNSA will begin to slow down activities associated with the current plutonium disposition strategy while assessing alternative strategies: • The MFFF structural construction package will be completed, including the primary exterior wall and MFFF roof. HVAC construction, process piping, fire protection, electrical, coatings, and glovebox and process equipment installation will be slowed down while NNSA assesses alternative plutonium disposition strategies. Future commitments will be delayed until the assessment is concluded but work in process design, closure of work packages, and records/control/storage will continue.	**437,835**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Construction		
FY 2014	• Continue construction activities at a significantly reduced pace while assessing alternative plutonium disposition strategies. • Continue minimal HVAC construction, process piping, fire protection, electrical, coatings, and glovebox and process equipment installation. Also continue process design work, closure of work packages, and records/control/storage activities.	**320,000**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Scope and costs will be updated to reflect the decision resulting from the assessment of alternative plutonium disposition strategies in the out years.	**TBD** **TBD** **TBD** **TBD**

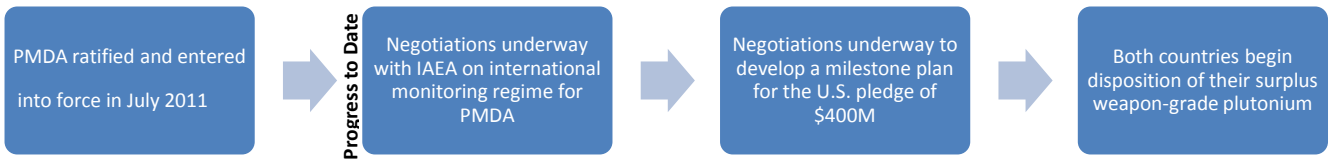
Russian Surplus Fissile Materials Disposition
Overview

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, to assist Russia in its plutonium disposition program. Russia will contribute over $2 billion necessary to complete the program.

Russia has made significant progress towards establishing its plutonium disposition capability based on irradiating MOX fuel in its fast reactors. The construction work at the BN-800 reactor at the Beloyarsk nuclear power plant is almost completed. Installation of equipment including the sodium piping, the steam generator modules, and the electrical equipment is underway. Rosatom has established a working group chaired by its lead fuel manufacturing company, TVEL, to manage the design and construction of the MOX Fuel Fabrication Facility (MFFF) at the Mining Chemical Combine (MCC) in Zheleznogorsk. Equipment fabrication and installation work at the MOX facility commenced in 2012.

NNSA remains committed to the plutonium disposition mission. However, considering the preliminary cost increases and the current budget environment, the Administration is conducting an assessment of alternative plutonium disposition strategies in FY 2013 and identifying options for FY 2014 and the out years. As a result, NNSA will slow down the MOX project and other activities associated with the current plutonium disposition strategy during the assessment period. This budget reflects the funding to support this decision. NNSA will continue to engage with its Russian counterparts during this assessment period.

Sequence



Benefits

- Plutonium disposition in Russia enables the permanent disposition of at least 34 MT of weapon-grade plutonium in a transparent and irreversible manner.

Other Information

- U.S.-Russia Plutonium Management and Disposition Agreement.
- Department of State, Russian Plutonium Disposition Fact Sheet, http://www.state.gov/t/isn/rls/fs/186675.htm
- Department of State, 2000 Plutonium Management and Disposition Agreement Fact Sheet, http://www.state.gov/r/pa/prs/ps/2010/04/140097.htm

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
Russian Surplus Fissile Materials Disposition		
FY 2012		**1,000**
FY 2013		**1,006**
FY 2014		**0**
FY 2015		**0**
FY 2016		**0**
FY 2017		**0**
FY 2018		**0**
Funds Spent in U.S.		
FY 2012	• Continued 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 supported the implementation of a monitoring and inspection (M&I) regime in Russia and the U.S. verifying that both countries are disposing of 34 MT of surplus weapon-grade plutonium, and supported negotiations among the U.S., Russia, and the International Atomic Energy Agency (IAEA) on M&I issues.	**1,000**
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.	**1,006**
FY 2014	• Uncosted balances will support the management of Russian contracts and provide technical oversight for planning and execution of the Russian plutonium disposition program.	**0**
FY 2015	• Scope and costs will be updated to reflect the decision resulting from the assessment of alternative disposition strategies in the out years.	**0**
FY 2016		**0**
FY 2017		**0**
FY 2018		**0**
Funds Spent in Russia		
FY 2012	• Uncosted balances continued 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	• Uncosted balances will support plutonium disposition implementation efforts in Russia funded from prior year funds as part of the $400 million in U.S. assistance under the PMDA.	**0**
FY 2015	• Scope and costs will be updated to reflect the decision resulting from the assessment of alternative plutonium disposition strategies in the out years.	**0**
FY 2016		**0**
FY 2017		**0**
FY 2018		**0**

Supporting Information

Capital Operating Expenses [a]

Capital Operating Expenses Summary

(Dollars in Thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Capital Operating Expenses			
General Plant Projects	9,300	9,505	9,714
Capital Equipment	8,040	8,217	8,398
Total, Capital Operating Expenses	**17,340**	**17,722**	**18,112**

Outyear Capital Operating Expenses Summary

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
Capital Operating Expenses					
General Plant Projects [b]	9,714	0	0	0	0
Capital Equipment [b]	8,398	0	0	0	0
Total, Capital Operating Expenses	**18,112**	**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.

[b] Schedules, dates and costs will be updated to reflect the decision resulting from the assessment in the out years.

Construction Projects Summary [a]

Construction Projects

(Dollars in Thousands)

	Total	Prior Years	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
99-D-141-02, Waste Solidification Building (WSB)					
TEC	TBD	226,749	17,582	49,894	0
OPC	TBD	50,981	23,345	25,798	20,000
TPC, 99-D-141-02, Waste Solidification Building (WSB)	**TBD**	**277,730**	**40,927**	**75,692**	**20,000**
99-D-143, MOX Fuel Fabrication Facility (MFFF)					
TEC	TBD	3,020,615	435,172	437,835	320,000
OPC	TBD	183,298	47,035	40,000	40,000
TPC, 99-D-143, MOX Fuel Fabrication Facility (MFFF)	**TBD**	**3,203,913**	**482,207**	**477,835**	**360,000**
Total, All Construction Projects					
TEC	TBD	3,247,364	452,754	487,729	320,000
OPC	TBD	234,279	70,380	65,798	60,000
TPC, Total All Construction Projects	**TBD**	**3,481,643**	**523,134**	**553,527**	**380,000**

[a] Schedules, dates and costs will be updated to reflect the decision resulting from the assessment in the out years.

99-D-143, Mixed Oxide Fuel Fabrication Facility,
Savannah River Site, Aiken, South Carolina
Project Data Sheet is for Design and Construction

1. Significant Changes

The most recent Department of Energy (DOE) Order 413.3B approved Critical Decision (CD) is CD-3, Start of Construction, and was approved on April 11, 2007, with a Total Project Cost (TPC) of $4,814,329 and CD-4 of 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. In FY 2012, the contractor submitted a baseline change proposal that would increase TPC to $7.7 billion and extend CD-4 to FY 2020, and there is an ongoing external independent review to validate these estimates. Estimated operations and maintenance costs and schedules for the facility to complete its mission after construction is complete have grown as well. Last year's estimate was that it would cost $7,090,703 over thirteen years for the facility to perform and complete its mission, and this year that estimate has increased to $8,209,291 over fifteen years. Cost growth and fiscal pressure may make the project unaffordable, so the Administration is conducting an assessment of alternative plutonium disposition strategies and identifying options for FY 2014 and the outyears. As a result, NNSA will slow down the MOX project and other activities associated with the current plutonium disposition strategy during the assessment period.

An acting Federal Project Director certified at Level III has been assigned to this project.

This Project Data Sheet (PDS) does not include a new start for the budget year.

This PDS is an update of the FY 2013 PDS. Significant changes include the following:

As mentioned in previous PDS's, the project continues to incur cost and schedule pressures due to several factors. As a result, NNSA tasked its contractor, Shaw AREVA MOX Services (MOX Services), to conduct a bottoms-up review and update cost and schedule estimates to provide an 85% confidence level in their achievement. In late FY 2012, MOX Services submitted a Baseline Change Proposal (BCP) with the resulting project cost and schedule estimates to NNSA. An external independent review to validate these estimates is ongoing and is projected to be completed in 2013. The contractor-submitted BCP increases the current TPC from $4.8B to $7.7B and extends the schedule from October 2016 to November 2019, which includes one year of schedule contingency. The BCP addresses the completion of construction and cold start-up activities of the Mixed Oxide Fuel Fabrication Facility (MFFF). The increase also includes the option for the addition of plutonium metal oxidation capability to be completed June 2023, which is part of the preferred alternative to the standalone Pit Disassembly and Conversion Facility. The direct metal oxidation scope provides the capability of accepting plutonium metal as feed to the MFFF. The final TPC increase cannot be established until the external independent review is completed to validate the BCP and provided to the Acquisition Executive (AE) for approval as required by DOE O 413.3B.

The four primary causes of the cost growth include the following:

(1) A main driver for the cost increase is that the project was baselined before design was complete. At the time of the initial baseline in 2006, the overall design of the project was about one-third complete with civil/structural design approximately two-thirds complete. Due to the incomplete design, some commodity quantities (e.g., pipe, duct, supports) were underestimated. For example, the 2006 baseline included 735 miles of electrical cable while the final design has 1,395 miles. Supports estimated in the 2006 baseline were simple off-the-shelf types, while the final design required primarily engineered supports that are more robust and more expensive to both construct and install. In addition to increased quantities, the prices of commodities and engineered equipment have been higher than estimated. An example of increased costs for commodities is electrical cable, which has increased five times due to rising copper prices. The final costs of engineered equipment (tanks, gloveboxes, furnaces) has averaged 60% higher than the 2006 baseline estimates.

(2) Another significant driver of the cost increase is that equipment and commodity installation rates, (e.g., dollars per foot to install pipe) are higher than anticipated in 2006 for two primary reasons. First, nuclear expertise in the construction industry had become nearly non-existent which has required more classroom and on-the-job training for personnel. Second, implementation of license requirements is more onerous than anticipated. NRC requirements for fuel fabrication facilities require not only protection of the public (requirement for nuclear reactors) but also protection of the workers. This additional requirement significantly added to the number of safety systems, including non-radiological systems such as chemical hazards.

(3) Regarding the cost increases for engineered equipment, the project experienced 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 oversee activities and ensure fabricated equipment and installations meet NQA-1 requirements.

(4) Lastly, MOX Services has experienced significantly greater than expected turnover of personnel due to the U.S. commercial nuclear industry demands. 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 was over 19% in FY 2012. As a result, the project has experienced a nearly complete turnover of construction management personnel over the last several years. 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.

NNSA remains committed to the plutonium disposition mission. However, considering the preliminary cost increases and the current budget environment, the Administration is conducting an assessment of alternative plutonium disposition strategies in FY 2013 and identifying options for FY 2014 and the out years. As a result, NNSA will slow down the MOX project and other activities associated with the current plutonium disposition strategy during the assessment period.

2. Design, Construction, and D&D Schedule

(fiscal quarter or date)

	CD-0	CD-1	Design Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2000	N/A	2QFY1999	4QFY2001	N/A	1QFY2002	4QFY2005	N/A	N/A
FY 2001	N/A	2QFY1999	3QFY2002	N/A	4QFY2002	1QFY2006	N/A	N/A
FY 2002	N/A	2QFY1999	4QFY2002	N/A	2QFY2003	1QFY2007	N/A	N/A
FY 2003	N/A	2QFY1999	4QFY2003	N/A	2QFY2004	4QFY2007	N/A	N/A
FY 2004	N/A	2QFY1999	1QFY2004	N/A	2QFY2004	4QFY2007	N/A	N/A
FY 2005	N/A	2QFY1999	3QFY2004	N/A	3QFY2005	2QFY2009	N/A	N/A
FY 2006	N/A	2QFY1999	1QFY2005	N/A	3QFY2005	TBD	N/A	N/A
FY 2007	N/A	2QFY1999	4QFY2009	N/A	2QFY2007	4QFY2014	N/A	N/A
FY 2008	1QFY1997	2QFY1999	2QFY2011	2QFY2007	2QFY2007	4QFY2013	N/A	N/A
FY 2009	1QFY1997	03/22/1999	2QFY2013[a]	04/11/2007	04/11/2007[b]	4QFY2016	N/A	N/A
FY 2010	1QFY1997	03/22/1999	2QFY2013	04/11/2007	04/11/2007	1QFY2017	N/A	N/A
FY 2011	1QFY1997	03/22/1999	2QFY2013	04/11/2007	04/11/2007	1QFY2017	N/A	N/A
FY 2012	1QFY1997	03/22/1999	2QFY2013	04/11/2007	04/11/2007	1QFY2017	N/A	N/A
FY 2013	1QFY1997	03/22/1999	2QFY2013	04/11/2007	04/11/2007	1QFY2017	N/A	N/A

[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)

	CD-0	CD-1	Design Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2014	1QFY1997	3/22/1999	4QFY2014	4/11/2007	4/11/2007	TBD[a]	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, Design	TEC, Construction	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
FY 2000	TBD	TBD	383,186	0	N/A	TBD	N/A
FY 2001	TBD	TBD	383,186	0	N/A	TBD	N/A
FY 2002	TBD	TBD	TBD	TBD	N/A	TBD	N/A
FY 2003	TBD	TBD	TBD	TBD	N/A	TBD	N/A
FY 2004	TBD	TBD	TBD	TBD	N/A	TBD	N/A
FY 2005	TBD	TBD	TBD	TBD	N/A	TBD	N/A
FY 2006	TBD	TBD	TBD	TBD	N/A	TBD	N/A
FY 2007	TBD	TBD	3,277,984	354,108	N/A	354,108	3,632,092
FY 2008	TBD	TBD	3,868,628	830,701	N/A	830,701	4,699,329
FY 2009	TBD	TBD	3,938,628	875,701	N/A	875,701	4,814,329
FY 2010	TBD	TBD	3,975,828	881,301	N/A	881,301	4,857,129
FY 2011	960,925	3,014,903	3,975,828	881,301	N/A	881,301	4,857,129
FY 2012	978,073	2,997,755	3,975,828	881,301	N/A	881,301	4,857,129
FY 2013	994,073	2,981,755	3,975,828	881,301	N/A	881,301	4,857,129
FY 2014	TBD[a]	TBD[a]	TBD[a]	TBD[a]	N/A	TBD[a]	TBD[a]

[a] Schedules, dates and costs will be updated to reflect the decision resulting from the assessment in the out years.
[b] Schedules, dates and costs will be updated to reflect the decision resulting from the assessment in the out years.

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 and Disposition Agreement.* The Mixed Oxide (MOX) Fuel Fabrication Facility would accomplished this by converting the surplus material into mixed oxide fuel that could subsequently be irradiated in power producing reactors in the United States. Once irradiated and converted into spent fuel, the material could no longer be readily used for nuclear weapons.

Scope and Justification:

The U.S. Mixed Oxide (MOX) Fuel Fabrication Facility (MFFF) at the Savannah River Site would combine surplus weapon-grade plutonium oxide with depleted uranium oxide to form MOX fuel assemblies to be used as fuel for U.S. commercial nuclear reactors. The nominal design life of the facility would be 40 years; however, it would take approximately 15 years to complete the 34 MT mission. After completing its mission, the facility could be deactivated, decontaminated, and decommissioned in approximately three to four years.

The MOX facility has been designed with the capacity to receive and process 3.5 MT of plutonium oxide per year. The plutonium oxide would come from to be determined pit disassembly and conversion operations and from other DOE inventories of weapon-grade plutonium. The MOX facility would have the capacity to store sufficient plutonium oxide for two years of operations.

The MOX facility would be approximately 441,000 square feet in size and provide all of the material processing and fabrication operations needed to produce MOX fuel. MOX facility operations would include: aqueous polishing (AP) to purify the plutonium oxide; blending and milling; pelletizing; sintering; grinding; loading fuel rods; bundling fuel assemblies; and storing feed material, pellets, and fuel assemblies. The facility would also include a laboratory and space for material sampling and use by a monitoring and inspection team. Adjacent to the MOX process areas is the secure shipping and receiving area to support material receipt, utilities, and technical support.

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 would be licensed by the Nuclear Regulatory Commission (NRC).

FY 2012 Project Status

Project activities focused 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 2012, the project has installed over 128,400 cubic yards of reinforced concrete and 20,800 tons of rebar in the MFFF. Initial testing continued on gloveboxes and process equipment. Piping/heating ventilation and air conditioning (HVAC) installation, tank installation and coatings continued this year. Electrical construction began in FY 2012. Permanent electrical underground utility installation continued. The project completed construction of the Technical Support Building, making it a cumulative total of twelve auxiliary buildings that are now complete. The project completed this work while achieving over 11 million safe work hours.

FY 2013 and FY 2014 Planned Description of Activities

In FY 2013, the MFFF structural construction package will be completed, including the primary exterior wall and MFFF roof. HVAC construction, process piping (including active gallery piping), fire protection, electrical, coatings, startup testing, operator training preparations, and glovebox and process equipment installation will be slowed down during the second half of FY 2013 while NNSA assesses alternative plutonium disposition strategies. Future commitments will be delayed during the assessment period but work in process design, closure of work packages, and records/control/storage will continue. NNSA oversight support (such as construction and vendor oversight), regulatory affairs (such as interactions with NRC), and utilities and maintenance of completed buildings, which are captured in OPC, will continue in FY 2013 and FY2014.

In FY 2014, MFFF construction will continue at a significantly reduced pace while NNSA concludes its assessment of alternative plutonium disposition strategies.

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 may continue to exceed expectations because of the procedural rigor or greater extent of application.	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 reviews 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, leaving 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.
Aggressive worldwide monetary and fiscal stimulus due to recession may create inflationary pressures when the world economy recovers.	Prices for commodities and equipment, and wages and salaries may grow more rapidly than is assumed for the multi-year estimate.

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	70,987	70,987	65,056
FY 2011	51,134	51,134	50,757
FY 2012	29,094	29,094	34,642
FY 2013	35,887	35,887	40,761
FY 2014	13,209	13,209	13,209
FY 2015	TBD	TBD	TBD
Total, Design	TBD	TBD	TBD
Construction			
FY 2004	279,193	0	0
FY 2005	113,892	44,100	0
FY 2006	97,947	217,469	15,210
FY 2007	197,367	197,367	115,065
FY 2008 [a]	175,676	290,139	209,174
FY 2008 (rescinded PY unobligated balance)	-115,000	0	0
FY 2009 [b]	395,299	395,299	301,323
FY 2010	433,251	433,251	429,326
FY 2011	450,654	450,654	482,330
FY 2012	406,078	406,078	671,212
FY 2013	401,948	401,948	581,064
FY 2014	306,791	306,791	338,359
FY 2015	TBD	TBD	TBD
Total, Construction	TBD	TBD	TBD

[a] MOX funded within the Nuclear Energy appropriation.
[b] MOX funded with the Other Defense Activities appropriation.

	(dollars in thousands)		
	Appropriations	Obligations	Costs
TEC			
FY 1999	28,000	9,600	2,545
FY 2000	12,375	30,775	33,512
FY 2001	25,943	25,943	29,938
FY 2002	65,993	65,993	52,513
FY 2003	92,088	92,088	82,022
FY 2004	360,274	81,081	93,457
FY 2005	365,087	295,295	216,801
FY 2006	217,800	337,322	180,828
FY 2007	262,500	262,500	177,407
FY 2008 [a]	231,721	346,184	268,132
FY 2008 (rescinded PY unobligated balance)	-115,000	0	0
FY 2009 [b]	467,808	467,808	369,718
FY 2010	504,238	504,238	494,382
FY 2011	501,788	501,788	533,087
FY 2012	435,172	435,172	705,854
FY 2013	437,835	437,835	621,825
FY 2014	320,000	320,000	351,568
FY 2015	TBD	TBD	TBD
Total, TEC	TBD	TBD	TBD
Other Project Cost (OPC)			
OPC except D&D			
FY 1999	5,000	5,000	4,500
FY 2000	5,000	5,000	4,500
FY 2001	5,000	5,000	5,000
FY 2002	5,000	5,000	5,000
FY 2003	8,000	8,000	5,000
FY 2004	9,292	9,292	11,500
FY 2005	9,357	9,357	3,749
FY 2006	28,200	21,300	7,023
FY 2007	915	7,792	9,278
FY 2008 [a]	47,068	47,068	15,746
FY 2009 [b]	0	0	21,451
FY 2010	56,466	56,466	19,344
FY 2011	4,000	4,000	50,211
FY 2012	47,035	47,035	33,142
FY 2013	40,000	40,000	74,000
FY 2014	40,000	40,000	38,292
FY 2015	TBD	TBD	TBD
Total, OPC except D&D	TBD	TBD	TBD

[a] MOX funded within the Nuclear Energy appropriation.
[b] MOX funded with the Other Defense Activities appropriation.

	(dollars in thousands)		
	Appropriations	Obligations	Costs
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 c]	278,789	393,252	283,878
FY 2008 (rescinded PY unobligated balance)	-115,000	0	0
FY 2009 [d e]	467,808	467,808	391,169
FY 2010 [f]	560,704	560,704	513,726
FY 2011 [g]	505,788	505,788	583,298
FY 2012	482,207	482,207	738,996
FY 2013	477,835	477,835	695,825
FY 2014	360,000	360,000	389,860
FY 2015	TBD	TBD	TBD
Total, TPC [h]	TBD	TBD	TBD

[a] Includes $31M for long-lead procurements.
[b] Includes $37.6M for long-lead procurements.
[c] MOX funded within the Nuclear Energy appropriation.
[d] MOX funded with the Other Defense Activities appropriation.
[e] Includes $177.4M for long-lead procurements.
[f] Includes $167.9M for long-lead procurements.
[g] Includes $67.1M for long-lead procurements.
[h] Schedules, dates and costs will be updated to reflect the decision resulting from the assessment in the out years.

6. Details of Project Cost Estimate

(dollars in thousands)

	Current Total Estimate[a]	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED)			
Design	TBD	1,055,123	916,148
Contingency	0	0	0
Total, PED	0	1,055,123	916,148
Construction			
Site Preparation	39,957	39,957	39,929
Equipment	TBD	452,816	251,791
Other Construction	TBD	2,242,035	2,067,639
Contingency	TBD	87,088	663,121
Total, Construction	TBD	3,020,705	3,022,480
Total, TEC	TBD	4,075,828	3,938,628
Contingency, TEC	TBD	87,088	663,121
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	37,723	37,723	37,723
Conceptual Design	0	0	0
Start-up	TBD	594,378	650,468
Other OPC	TBD	NA	NA
Contingency	TBD	149,200	187,510
Total, OPC except D&D	TBD	781,301	875,701
D&D			
D&D	0	0	0
Contingency	0	0	0
Total, D&D	0	0	0
Total, OPC	TBD	781,301	875,701
Contingency, OPC	TBD	149,200	187,510
Total, TPC	TBD	4,857,129	4,814,329
Total, Contingency	TBD	236,288	850,631

[a] Schedules, dates and costs will be updated to reflect the decision resulting from the assessment in the out years.

7. Schedule of Appropriation Requests

(dollars in thousands)

		Prior Years	FY 2013	FY 2014 [a]	FY 2015 [b]	FY 2016 [b]	FY 2017 [b]	FY 2018 [b]	Outyears	Total
FY 2009 Performance Baseline	TEC	2,970,923	382,802	158,325	125,611	300,967	0	0	0	3,938,628
	OPC	496,137	136,669	149,192	85,771	7,932	0	0	0	875,701
	TPC	3,467,060	519,471	307,517	211,382	308,899	0	0	0	4,814,329
FY 2010	TEC	3,379,787	322,802	109,661	125,773	37,805	0	0	0	3,975,828
	OPC	306,333	246,669	230,697	91,603	5,999	0	0	0	881,301
	TPC	3,686,120	569,471	340,358	217,376	43,804	0	0	0	4,857,129
FY 2011 [c d]	TEC	3,379,787	322,802	109,661	125,773	37,805	0	0	0	3,975,828
	OPC	306,333	246,669	230,697	91,603	5,999	0	0	0	881,301
	TPC	3,686,120	569,471	340,358	217,376	43,804	0	0	0	4,857,129
FY 2012	TEC	3,379,787	322,802	109,661	125,773	37,805	0	0	0	3,975,828
	OPC	306,333	246,669	230,697	91,603	5,999	0	0	0	881,301
	TPC	3,686,120	569,471	340,358	217,376	43,804	0	0	0	4,857,129
FY 2013	TEC	3,455,787	388,802	118,661	9,773	2,805	0	0	0	3,975,828
	OPC	230,333	180,669	221,697	207,603	40,999	0	0	0	881,301
	TPC	3,686,120	569,471	340,358	217,376	43,804	0	0	0	4,857,129
FY 2014 MOX	TEC	3,455,787	437,835	320,000	TBD	TBD	TBD	TBD	TBD	TBD
	OPC	230,333	40,000	40,000	TBD	TBD	TBD	TBD	TBD	TBD
	TPC	3,686,120	477,835	360,000	TBD	TBD	TBD	TBD	TBD	TBD

8. Related Operations and Maintenance Funding Requirements [e]

Start of Operation of Beneficial Occupancy (fiscal quarter or date) [f]	1Q FY 2020
Expected Useful Life (number of years) (after hot startup) [g]	15
Expected Future Start of D&D of this capital asset (fiscal quarter)	N/A

[a] These numbers reflect the slow-down of the current plutonium disposition strategy while assessing alternative strategies.
[b] Schedules, dates and costs will be updated to reflect the decision resulting from the assessment in the out years.
[c] FY 2011 OPC appropriations were only $4M vs. $30M planned.
[d] FY 2011 TEC appropriations were increased by $26M.
[e] The start of operation date and life cycle data is based on the contractor-submitted BCP undergoing review.
[f] The escalated life cycle cost estimate includes the following assumptions: (a) the MFFF CD-4 date is November 2019; (b) the MFFF de-inventory/flushing is complete in March 2034; (c) includes all MFFF operating costs, including operations costs prior to CD-4; and (d) the annual operating cost has been determined by averaging the escalated costs over the 15 years of operations (FY 2020-2034 inclusive of hot start-up, steady state operations and de-inventory/flushing). Outyear projections are extrapolated based on the Early Option II (EO2) proposal for the scope to complete the first 8 fuel assemblies. The projections will be updated following negotiations. Labor assumes approximately 1,100 employees during operations. Other Direct Costs (ODC) include spare parts, sub-contracts such as maintenance, drums/boxes/containers, IT maintenance, chemicals/gases, etc. Also included are NRC pass-through costs for the regulatory oversight of MFFF, costs for mission reactor personnel to support qualification of MOX fuel produced in MFFF, and fee. Additionally, the projection includes costs for M&O support such as utility costs, environmental permits and monitoring, emergency response, etc. Six months of operating costs in 2034 was used as the basis for de-inventory activities and flushing. Pre CD-4 costs support change control and maintenance of the EO2 proposal, processing of MOX Services clearances, long lead procurements for storage/material transport containers internal to the MFFF, spare parts necessary after first year of start-up, and fuel assembly parts necessary for operations.
[g] The nominal design life of the facility is 40 years, however, it will take approximately 15 years to complete the 34 MT mission.

(Related Funding Requirements)

(dollars in thousands)

	Annual Costs		Life Cycle Costs	
	Current Total	Previous Total	Current Total	Previous Total
Operations	470,021	434,039	7,111,447	6,174,744
Security	73,190	64,673	1,097,844	915,959
Total, Operations and Security	543,211	498,712	8,209,291	7,090,703

The MFFF life cycle cost estimate, which includes escalation, increased mainly as a result of the following: a delay of 4 ½ years in the start of operations (June 2015 to November 2019); and inclusion of costs associated with de-inventory and flushing over six months at the end of the 34 MT mission that were not previously included.

Security costs have also increased as a result of the 4½ years added to the life-cycle operating schedule. However, NNSA has not completed formal negotiations for establishing security and other overhead costs.

9. Required D&D Information

Area	Square Feet
Area of new construction	441,000
Area of existing facility(s) being replaced	N/A
Area of additional D&D space to meet the "one-for-one" requirement	N/A

Name(s) and site location(s) of existing facility(s) to be replaced:
The new construction is not replacing an existing facility.

10. Acquisition Approach

The procurement strategy for the MOX facility involved awarding a base contract to Duke Cogema Stone & Webster (now Shaw AREVA MOX Services) in March 1999 for design, licensing, and irradiation services associated with fuel qualification activities and reactor licensing. Three options were included in the base contract for: (1) construction and management oversight; (2) hot start-up, operations, and irradiation services; and (3) deactivation—which can be awarded separately. Option 1 was exercised by DOE in May 2008. In January 2009, an Early Option II (EO2) proposal was submitted to NNSA for consideration. The proposed work scope included the fabrication of eight fuel assemblies as a part of the facility hot start-up plan.

Shaw AREVA MOX Services is a partnership of The Shaw Group and the French company, AREVA. In February 2013 Chicago Bridge and Iron (CB&I) Company completed its acquisition of The Shaw Group. Since CB&I is a foreign-based company, a proxy company has been formed to address U.S. government foreign ownership and control regulations. As a result, a proxy company under CB&I named Shaw Project Services Group, LLC, was formed to oversee Shaw's security-sensitive work such as the MFFF Project.

Physical construction is being performed through a combination of fixed-price sub-contracts and MOX Services' direct managed construction craft. A combination of award fees and incentive fees are included in the overall contract with MOX Services to reward performance within established project baselines.

99-D-141-02, Waste Solidification Building
Savannah River Site, Aiken, South Carolina
Project 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 December 10, 2008 with a Total Project Cost (TPC) of $344.455 million and CD-4 of fiscal year (FY) 2013. In December 2012, the Acquisition Executive approved a baseline change proposal with a TPC of $414 million and a completion date of FY 2015. Estimated operations and maintenance costs and schedules for the facility to complete its mission after construction is complete have grown as well. The previous estimate was that it would take fifteen years and cost $1,008,750 million for the facility to complete its mission, and this year that estimate has increased to $1,910,240 over twenty years. The Waste Solidification Building would support plutonium disposition operations at the Mixed Oxide (MOX) Fuel Fabrication Facility. Cost growth and fiscal pressure may make these projects unaffordable, so the Administration is conducting an assessment of alternative plutonium disposition strategies and identifying options for FY 2014 and the outyears. As a result, NNSA will slow down the MOX project and other activities associated with the current plutonium disposition strategy, including the Waste Solidification Building, during the assessment period.

A Federal Project Director (FPD), certified at the appropriate level is assigned to this project. This Project Data Sheet (PDS) does not include a new start for the budget year.

NNSA is not requesting TEC for FY 2014 due to the funds provided from the FY 2013 reprogramming that was approved in December 2012 and the funds provided from the year long CR at the FY 2012 levels. It does however request other project costs (OPC) associated with the project. In addition, this PDS serves as an update to the recently approved BCP (which may also change based on the assessment of alternative plutonium disposition strategies) and updates the funding profile for life cycle operating costs.

This PDS is an update of the PDS included in the FY 2013 Reprogramming.

The Savannah River Nuclear Solutions (SRNS) contractor submitted a baseline change proposal (BCP) to increase the current TPC and extend the schedule from September 2013 to August 2015, which includes 12 months of schedule contingency. This BCP has been reviewed within the NNSA and validated by an external independent review team to validate the cost and schedule changes. This review and approval process was completed in December 2012. The review team recommended changes to the TPC and project completion date. These changes have been incorporated into the project baseline. The Acquisition Executive approved the BCP in December 2012 with a TPC of $414M and a completion date of August 2015.

The DOE contract with the M&O Contractor includes a cost sharing arrangement in which the M&O Contractor is responsible for 20% of project costs over the initial baseline of $342M up to a maximum of $6M. The TPC of $414M that was validated by the external independent review team represents the total cost to the government to complete the project since the M&O Contractor is responsible for an additional $6M due to the cost sharing provision included in the contract.

The four primary causes of the cost growth include the following:

(1) The two construction subcontract bids received significantly exceeded the December 2008 CD-2 baseline value of $65 million. The construction subcontract was awarded to the lower bidder for $91 million, requiring approximately $26.5 million of the original $40.6 million in TEC contingency included at CD-2/3 to be used to award the construction subcontract in 2009.
(2) Design errors, omissions, and inconsistencies have resulted primarily in the project identifying a number of discrepancies among design documents that required reconciliation and adjustment resulting in higher engineering costs and schedule delays.
(3) Construction subcontractor execution and performance have not met required targets, resulting in schedule delays and associated cost impacts. The CD-4 date has been delayed by 23 months from the CD-2 baseline schedule.

(4) The pension and legacy benefit rates were increased after approval of the CD-2 baseline. The site pension and overhead rates have undergone an annual review and have been adjusted to include the latest rates. Increases due to pension impacts have been partially offset by reductions in overhead rates.

SRNS has implemented an enhanced management strategy for oversight of the construction subcontractor's planning and execution of work. An integrated leadership team is tracking specific activities during daily reviews, and has developed additional metrics for tracking quantities and measuring progress. An integrated Change Order Board has been established to evaluate impacts, minimize changes, and resolve outstanding changes. This approach will facilitate early identification and resolution of work restraints or issues to mitigate impacts to the critical path and to identify opportunities for improvement. The integrated leadership approach will help ensure effective management of the turnover sequence to achieve a cost effective approach and completion of critical turnovers as scheduled.

NNSA remains committed to the plutonium disposition mission. However, considering the preliminary cost increases and the current budget environment, the Administration is conducting an assessment of alternative plutonium disposition strategies in FY 2013 and identifying options for FY 2014 and the out years. As a result, NNSA will slow down the MOX project and other activities associated with the current plutonium disposition strategy during the assessment period.

2. Design, Construction, and D&D Schedule
(fiscal quarter or date)

	CD-0[a]	CD-1[b]	Design Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 1999	10/31/1997	10/31/1997	TBD	TBD	TBD	TBD	N/A	N/A
FY 2000	10/31/1997	10/31/1997	TBD	TBD	TBD	TBD	N/A	N/A
FY 2001	10/31/1997	10/31/1997	TBD	TBD	TBD	TBD	N/A	N/A
FY 2002	10/31/1997	10/31/1997	TBD	TBD	TBD	TBD	N/A	N/A
FY 2003	10/31/1997	10/31/1997	TBD	TBD	TBD	TBD	N/A	N/A
FY 2004	10/31/1997	10/31/1997	TBD	TBD	TBD	TBD	N/A	N/A
FY 2005	10/31/1997	10/31/1997	TBD	TBD	TBD	TBD	N/A	N/A
FY 2006	10/31/1997	10/31/1997	TBD	TBD	TBD	TBD	N/A	N/A
FY 2007	10/31/1997	10/31/1997	TBD	TBD	TBD	TBD	N/A	N/A
FY 2008	10/31/1997	10/31/1997	3QFY2008	4QFY2008	1QFY2009	TBD	N/A	N/A
FY 2009	10/31/1997	10/31/1997	3QFY2008	4QFY2008	4QFY2008	1QFY2013	N/A	N/A
FY 2010	10/31/1997	10/31/1997	05/09/2008	12/10/2008	12/10/2008	4QFY2013	N/A	N/A
FY 2011	10/31/1997	10/31/1997	05/09/2008	12/10/2008	12/10/2008	4QFY2013	N/A	N/A
FY 2012	10/31/1997	10/31/1997	05/09/2008	12/10/2008	12/10/2008	4QFY2013	N/A	N/A
FY 2012 Reprogramming[c]	10/31/1997	10/31/1997	05/09/2008	12/10/2008	12/10/2008	3QFY2014	N/A	N/A
FY 2014[d]	10/31/1997	10/31/1997	05/09/2008	12/10/2008	12/10/2008	4QFY2015	N/A	N/A

CD-0 – Approve Mission Need
CD-1 – Approve Alternative Selection and Cost Range
CD-2 – Approve Performance Baseline

[a] Approval of mission need for waste treatment activities was originally obtained in 1997 as part of the scope of the PDCF project and was reinforced in the Record of Decision.
[b] Preliminary design activities for the WSB were initiated in February 2003, but suspended in 2004 due to uncertainties in the schedule of the overall plutonium disposition program and the related Russian disposition program. These issues were resolved and design activities were resumed in October 2006.
[c] The FY 2012 reprogramming was executed in FY 2013.
[d] All schedules, date and costs will be updated to reflect the decision resulting from the assessments in the out years.

CD-3 – Approve Start of Construction
CD-4 – Approve Start of Operations or Project Closeout
D&D Start – Start of D&D work
D&D Complete – Completion of D&D work

3. Baseline and Validation Status

(dollars in thousands)

	TEC, Design	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 1999	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2000	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2001	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2002	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2003	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2004	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2005	TBD	TBD	TBD	TBD	N/A	TBD	TBD
FY 2006	25,700	TBD	TBD	TBD	N/A	TBD	25,700
FY 2007	29,300	160,000	189,300	36,708	N/A	36,708	226,008
FY 2008	31,183	171,013	202,196	42,908	N/A	42,908	245,104
FY 2009	36,102	159,367	195,469	82,718	N/A	82,718	278,187
FY 2010	42,542	201,789	244,331	100,124	N/A	100,124	344,455
FY 2011	42,652	201,679	244,331	100,124	N/A	100,124	344,455
FY 2012	42,652	201,679	244,331	100,124	N/A	100,124	344,455
FY 2012 Reprogramming [a]	42,652	243,883	286,535	97,465	N/A	97,465	384,000
FY 2014 [b]	42,652	TBD	TBD	TBD	N/A	TBD	TBD

4. Project Description, Justification, and Scope

Mission Need

The mission of the WSB is to process radioactive waste streams from the Mixed Oxide Fuel Fabrication Facility (MFFF) into the following waste forms: (1) a waste form that is suitable for shipment and disposal as transuranic waste at the Waste Isolation Pilot Plant, and (2) low-level waste (LLW) that is suitable for disposal at government or commercial LLW repositories. The WSB would provide a waste treatment capability not currently available at the Savannah River Site necessary to receive and treat unique waste streams generated by plutonium disposition.

[a] The FY 2012 reprogramming was executed in FY 2013.
[b] All schedules, date and costs will be updated to reflect the decision resulting from the assessments in the outyears.

Scope and Justification

The WSB would process radioactive liquid waste streams from the MFFF into a solid waste form for ultimate disposal. The WSB would have to be operational to support cold start-up testing activities for MFFF. The radioactive liquid waste consists of one high-activity and one low-activity stream. The high-activity stream contains significant amounts of americium removed from plutonium oxide during mixed oxide (MOX) aqueous polishing operations. The low-activity stream contains stripped uranium also removed from MOX aqueous polishing operations. The WSB operating life would be approximately 20 years; however the facility would have a design life of 30 years. After completing its mission, the WSB would be deactivated, decontaminated, and decommissioned over approximately two to four years.

The scope of this project consists of the following activities: design, construction, procurement, installation, testing, demonstration, and start-up testing of structures and equipment. The processing facility would be approximately 33,000 square feet and is designed as a single story structure of hardened concrete. An additional separate structure consisting of a covered concrete pad would be constructed to provide temporary storage of containerized waste following treatment prior to packaging for shipment. The major process equipment includes tanks, evaporators, and solidification equipment.

Key Performance Parameters

	Objective Value	Minimum Threshold Value
1. Demonstrate ability to process 12,770 gallons/year of High-Activity Waste (HAW)	The liquid radioactive waste streams that MFFF will transfer to the WSB are unique and will not be produced for several years following AE approval of CD-4 for the WSB. Therefore, the WSB will use simulants in lieu of radioactive waste streams to demonstrate the ability to meet the facility's KPPs.	Not Applicable
2. Demonstrate ability to process 55,550 gallons/year of Low-Activity Waste (LAW)	The liquid radioactive waste streams that MFFF will transfer to the WSB are unique and will not be produced for several years following AE approval of CD-4 for the WSB. Therefore, the WSB will use simulants in lieu of radioactive waste streams to demonstrate the ability to meet the facility's KPPs.	Not Applicable
3. Demonstrate the ability to produce waste products that are within the established limits of the waste acceptance criteria and/or Documented Safety Analysis of the receiving facilities.	The waste forms produced by the WSB will be validated on physical parameters only. Radiological wastes will not be produced for a minimum of two years after WSB is operational. Further, the waste streams received by WSB will vary significantly based on the source of plutonium. Producing an acceptable waste form with radiological constituents is an operational adjustment that will vary for each batch of waste received.	Not Applicable

FY 2013 and FY 2014 Planned Description of Activities

In FY 2013, the fixed-price construction contractor will complete facility construction (mechanical completion) and begin turnover of the facility to the M&O Contractor. M&O Contractor activities associated with integrated system testing and preparation for facility operations will be slowed down while the NNSA assesses alternative plutonium disposition strategies.

In FY 2014, remaining fixed-price subcontractor construction activities (field work and QA records) will be completed. All other work will continue at a significantly reduced pace while the NNSA concludes its assessment of alternative plutonium disposition strategies.

Risk Management

The WSB has implemented and maintained an active risk management process throughout the project life. Risks are routinely reviewed, assessed and updated. Currently, the project has no high risks identified following mitigation measures. The most significant risk affecting the project is:

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

Risk	Potential Impacts
1. Productivity assumptions will not be met.	Potential to delay completion date, increasing costs to the project due to longer project duration. Additional funding beyond the current approved baseline could be required in order to complete the project.

5. Financial Schedule

(dollars in thousands)

	Appropriations	Obligations	Costs
Design			
FY 1999	0	0	0
FY 2000	0	0	0
FY 2001	0	0	0
FY 2002	0	0	0
FY 2003	6,195	6,195	4,610
FY 2004	2,100	2,100	3,114
FY 2005	0	0	0
FY 2006	2,354	2,354	1,003
FY 2007	15,500	15,500	11,745
FY 2008 [a]	16,393	16,393	20,072
FY 2009 [a]	110	110	2,108
Total, PED	42,652	42,652	42,652
Construction			
FY 2006	0	0	0
FY 2007	0	0	0
FY 2008 [a]	17,207	17,207	0
FY 2009 [a]	39,890	39,890	15,859
FY 2010	70,000	70,000	49,541
FY 2011	57,000	57,000	64,158
FY 2012	17,582	17,582	40,132
FY 2013	49,894	49,894	63,918
FY 2014[b]	0	0	16,356
FY 2015	TBD	TBD	TBD
Total, Construction	TBD	TBD	TBD
TEC			
FY 1999	0	0	0
FY 2000	0	0	0
FY 2001	0	0	0
FY 2002	0	0	0
FY 2003	6,195	6,195	4,610
FY 2004	2,100	2,100	3,114
FY 2005	0	0	0
FY 2006	2,354	2,354	1,003
FY 2007	15,500	15,500	11,745
FY 2008 [a]	33,600	33,600	20,072
FY 2009 [a]	40,000	40,000	17,967
FY 2010	70,000	70,000	49,541

[a] WSB funded within the Weapons Activities appropriation in Directed Stockpile Work.

[b] All schedules, date and costs will be updated to reflect the decision resulting from the assessments in the outyears.

	(dollars in thousands)		
	Appropriations	Obligations	Costs
FY 2011	57,000	57,000	64,158
FY 2012	17,582	17,582	40,132
FY 2013	49,894	49,894	63,918
FY 2014 [a]	0	0	16,356
FY 2015	TBD	TBD	TBD
Total, TEC	TBD	TBD	TBD
Other Project Cost (OPC)			
OPC except D&D			
FY 1999	0	0	0
FY 2000	0	0	0
FY 2001	0	0	0
FY 2002	0	0	0
FY 2003	4,071	4,071	2,650
FY 2004	0	0	1,041
FY 2005	-50	-50	208
FY 2006	1,400	1,400	79
FY 2007	5,060	5,060	2,145
FY 2008 [b]	5,000	5,000	5,415
FY 2009 [b]	7,000	7,000	4,526
FY 2010	7,000	7,000	5,486
FY 2011	21,500	21,500	11,184
FY 2012	6,945	6,945	22,509
FY 2013	25,798	25,798	29,958
FY2014 [a]	20,000	20,000	18,522
FY 2015	TBD	TBD	TBD
Total, OPC except D&D	TBD	TBD	TBD
Total OPC	TBD	TBD	TBD
Total Project Cost (TPC)			
FY 1999	0	0	0
FY 2000	0	0	0
FY 2001	0	0	0
FY 2002	0	0	0
FY 2003	10,266	10,266	7,260
FY 2004	2,100	2,100	4,155
FY 2005	-50	-50	208
FY 2006	3,754	3,754	1,082
FY 2007	20,560	20,560	13,890
FY 2008 [b]	38,600	38,600	25,487

[a] All schedules, date and costs will be updated to reflect the decision resulting from the assessments in the outyears.

[b] WSB funded within the Weapons Activities appropriation in Directed Stockpile Work.

(dollars in thousands)

	Appropriations	Obligations	Costs
FY 2009 [a b]	47,000	47,000	22,493
FY 2010 [c]	77,000	77,000	55,027
FY 2011 [d]	78,500	78,500	75,342
FY 2012	24,527	24,527	62,641
FY 2013	75,692	75,692	93,876
FY 2014 [e]	20,000	20,000	34,878
FY 2015	TBD	TBD	TBD
Total, TPC	TBD	TBD	TBD

[a] WSB funded within the Weapons Activities appropriation in Directed Stockpile Work.
[b] Includes $1.4M for long-lead procurements.
[c] Includes $14.2M for long-lead procurements.
[d] Includes $11.1M for long-lead procurements.
[e] All schedules, dates and costs will be updated to reflect the decision resulting from the assessment in the out years.

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	42,652	42,652	41,825
Contingency	0	0	717
Total, PED	42,652	42,652	42,542
Construction			
Site Preparation [b]	10,798	10,798	1,300
Equipment [c]	31,359	31,359	42,585
Other Construction	TBD	170,962	118,025
Contingency	TBD	30,764	39,879
Total, Construction	TBD	243,883	201,789
Total, TEC	TBD	286,535	244,331
Contingency, TEC	TBD	30,764	40,596
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	2,650	2,650	2,650
Conceptual Design	27,440	27,440	27,277
Start-up	TBD	49,437	49,500
Other OPC	TBD	NA	NA
Contingency	TBD	17,938	20,697
Total, OPC except D&D	TBD	97,465	100,124
D&D			
D&D	N/A	N/A	N/A
Contingency	N/A	N/A	N/A
Total, D&D	N/A	N/A	N/A
Total, OPC	TBD	97,465	100,124
Contingency, OPC	TBD	17,938	20,697
Total, TPC	TBD	384,000	344,455
Total, Contingency	TBD	48,702	61,293

[a] All schedules, dates and cost will be updated to reflect the decision from the assessment in the out years.

[b] Differences between previous and current estimates for site preparation reflect costs that were incorrectly categorized as "other construction" in the original estimate.

[c] Differences in equipment costs are primarily driven by underruns in long-lead equipment contracts.

7. Schedule of Appropriation Requests

(dollars in thousands)

		Prior Years	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	Outyears	Total
FY 2008	TEC	0								0
	OPC	42,908								42,908
	TPC	42,908	0	0	0	0	0	0	0	42,908
FY 2009	TEC	195,469								195,469
	OPC	72,259	10,459							82,718
	TPC	267,728	10,459	0	0	0	0	0	0	278,187
FY 2010	TEC	239,676	4,655							244,331
	OPC	78,981	21,143							100,124
	TPC	318,657	25,798	0	0	0	0	0	0	344,455
FY 2011	TEC	239,676	4,655							244,331
	OPC	78,981	21,143							100,124
	TPC	318,657	25,798	0	0	0	0	0	0	344,455
FY 2012	TEC	244,331	0	0	0	0	0	0	0	244,331
	OPC	74,326	25,798							100,124
	TPC	318,657	25,798	0	0	0	0	0	0	344,455
FY 2012 Reprogramming [a]	TEC	276,535	0							276,535
	OPC	57,926	25,798							83,724
	TPC	334,461	25,798	0	0	0	0	0	0	360,259
FY 2014 [b]	TEC	244,331	49,894	0	0	0	0	0	0	TBD
	OPC	57,926	25,798	20,000	0	0	0	0	0	TBD
	TPC	302,257	75,692	20,000	0	0	0	0	0	TBD

8. Related Operations and Maintenance Funding Requirements

99-D-141-02 – Waste Solidification Building	
Start of Operation or Beneficial Occupancy (fiscal quarter or date)	4Q FY 2015
Expected Useful Life (number of years)	20
Expected Future Start of D&D of this capital asset (fiscal quarter)	1Q FY 2035

[a] The FY 2012 reprogramming was executed in FY 2013.

[b] All schedules, dates and costs will be updated to reflect the decision resulting from the assessment in the out years.

(Related Funding Requirements)[a]

99-D-141-02 – Waste Solidification Building

(dollars in thousands)

	Annual Costs		Life Cycle Costs	
	Current Total	Previous Total	Current Total	Previous Total
Operations	73,611	53,806	1,472,220	807,090
Maintenance	21,901	13,444	438,020	201,660
Total, Operations and Maintenance	95,512	67,250	1,910,240	1,008,750

The WSB life cycle cost estimate, which includes escalation, increased mainly as a result of the following: longer operating timeframe for WSB to support MFFF cold start-up through de-inventory/flushing with associated additional costs for labor, materials, waste management, and utilities; and additional overhead costs (primarily due to increase in pension rates).

9. Required D&D Information

Area	Square Feet
Area of new construction	33,000
Area of existing facility(s) being replaced	Not Applicable
Area of additional D&D space to meet the "one-for-one" requirement	Not Applicable

Name(s) and site location(s) of existing facility(s) to be replaced:
The new construction is not replacing an existing facility.

10. Acquisition Approach

99-D-141-02 – Waste Solidification Building
The WSB design service was procured through the SRS M&O contract. Purchase orders for procurement of long-lead equipment for the WSB were issued in FY 2009. The SRS M&O is serving as the construction manager. Fixed-price construction sub-contracts for the WSB were awarded on the basis of competitive bidding. The acquisition strategy has been finalized.

[a] The escalated life cycle cost estimate includes the following assumptions: (a) the WSB CD-4 date is August 2015; (b) the MFFF dates for waste transfers to WSB are September 2015 for water runs, November 2018 for chemical runs, and November 2019 for radiological operations; (c) the MFFF waste transfers to WSB (including final flushes) complete in March 2034; (d) includes all WSB operating costs, including prior to CD-4, and (e) the total life cycle cost has been averaged over 20 years to determine an annual cost. Costs prior to radiological operations (November 2019) are much lower than annual costs during radiological operations. During radiological operations, the facility is manned 24 hours per day due to nuclear safety measures.

Nuclear Counterterrorism Incident Response Program
Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Nuclear Counterterrorism Incident Response Program (Homeland Security) [a]			
Emergency Response (Homeland Security) [b]	0	0	147,981
National Technical Nuclear Forensics (Homeland Security) [b]	0	0	11,648
Emergency Management (Homeland Security) [b]	0	0	6,195
Operations Support (Homeland Security) [b]	0	0	8,350
International Emergency Management and Cooperation	0	0	7,119
Nuclear Counterterrorism (Homeland Security) [b c]	0	0	0
Total, Nuclear Counterterrorism Incident Response Program	**0**	**0**	**181,293**

Out-Year Target Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
Nuclear Counterterrorism Incident Response Program (Homeland Security) [a]					
Emergency Response (Homeland Security) [b]	147,981	142,221	143,304	148,961	150,677
National Technical Nuclear Forensics (Homeland Security) [b]	11,648	10,193	10,447	9,243	11,447
Emergency Management (Homeland Security) [b]	6,195	6,143	6,143	6,143	6,143
Operations Support (Homeland Security) [b]	8,350	7,175	7,675	8,175	9,728
International Emergency Management and Cooperation	7,119	6,586	6,986	6,986	6,986
Nuclear Counterterrorism (Homeland Security) [b c]	0	0	0	0	0
Total, Nuclear Counterterrorism Incident Response Program	**181,293**	**172,318**	**174,555**	**179,508**	**184,981**

[a] This represents the proposed control level.
[b] Office of Management and Budget (OMB) Homeland Security designation.
[c] The Nuclear Counterterrorism subprogram is being requested within the Counterterrorism and Counterproliferation Programs effective in FY 2014.

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
National Defense Authorization Act for FY 2013 (P.L. 112-239)
The Continuing Appropriations Resolution, 2013 (P.L. 112-175)

Overview

The Nuclear Counterterrorism Incident Response Program (NCTIR) 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 the NNSA and DOE Strategic objective "Secure Our Nation" and "enhance nuclear security through defense, nonproliferation, and environmental efforts." The program has been transferred from the Weapons Activities appropriation to the Defense Nuclear Nonproliferation appropriation to align all NNSA funding for reducing global nuclear dangers in one appropriation.

The Nuclear Counterterrorism program responsibility and funding resources were transferred to the former Associate Administrator and Deputy Under Secretary for Counterterrorism and Counterproliferation in October 2011. That program will be funded out of Counterterrorism and Counterproliferation Programs in FY 2014.

Program Accomplishments and Milestones

In FY 2012, NCTIR accomplished significant milestones in program development. These accomplishments include: 1) deployed multiple field teams to 40 high-profile events and 28 emergency responses around the world (an additional 20 responses did not result in deployments); 2) participated in 13 international counterterrorism exercises and provided 20 training courses, including I-RAPTER, I-MEDICAL, and I-Consequence Management to an audience of more than 920 international emergency response personnel, and 3) completed Emergency Communications Network (ECN) installations of two new nodes in France and the United Kingdom.

Program Planning and Management

The FY 2014 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

Support counterterrorism and incident response capabilities through:

- providing training and maintain equipment for Response teams and international partners;
- improving communications to deployed teams;
- maintaining operational capability for Pre-detonation and Post- detonation nuclear forensics
- Implement and coordinate emergency management policy, and
- maintaining on a 24/7/365 day basis the DOE/NNSA global emergency communications network to support the exchange of classified and unclassified voice, data and video information.

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

- threat conditions affecting U.S. interests, domestically or abroad;
- successful interactions with agency partners, and
- striking the right balance between technology and resources to maintain readiness.

Major Outyear Priorities and Assumptions

Outyear funding levels for the NCTIR total $711,362,000 for FY 2015 through FY 2018. The outyear numbers for NCTIR reflect major program priorities for the FYNSP.

- Sustain our mission, maintain readiness and recapitalize equipment to maintain state of the art capabilities.
- Adapt to factors such as increasing demand for nuclear/radiological expertise, emergence of new technologies and expanding threats of proliferation and nuclear terrorism.
- Sustainment of stabilization capability.
- Continue international efforts in radiological search training, and provide detection equipment and technical support for radiological and nuclear incidents and counterterrorism.

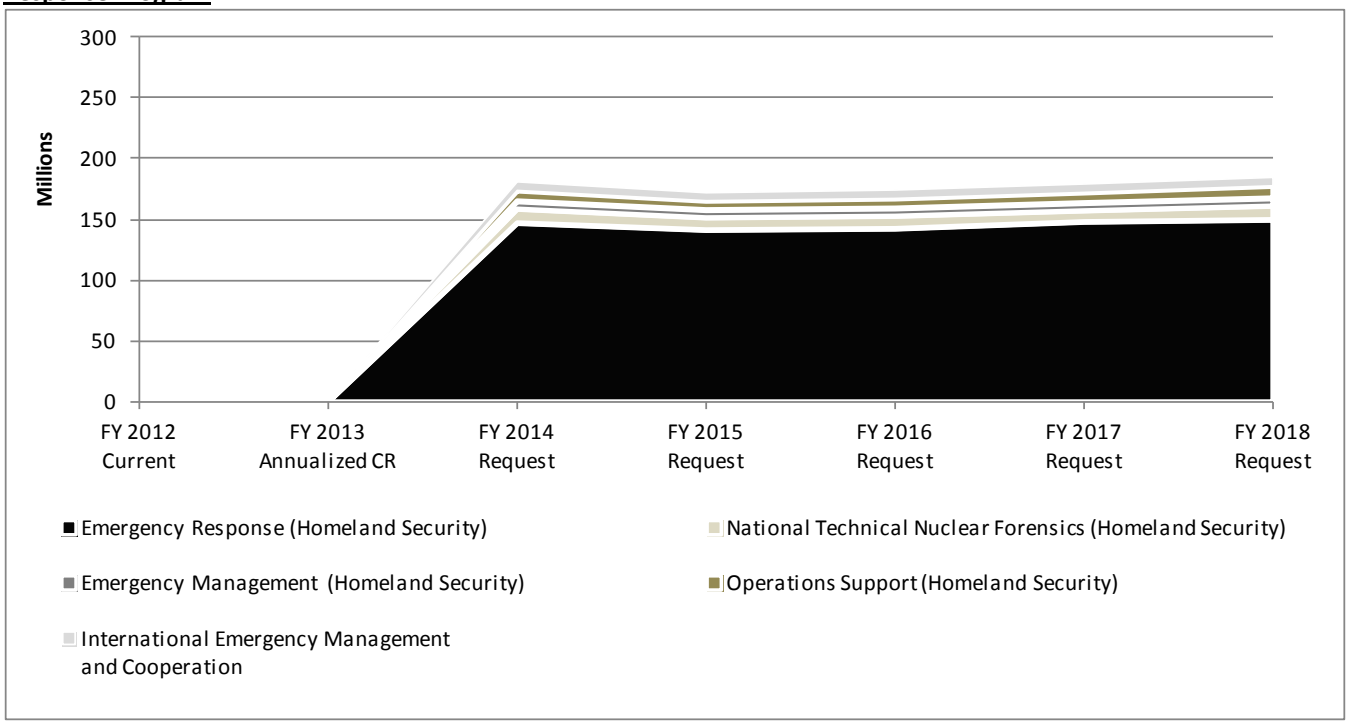
Program Goals and Funding

The NCTIR program serves as the Department of Energy/National Nuclear Security Administration lead for all emergency management activities. The Program will train, equip and exercise teams of nuclear experts to respond to a nuclear or radiological incident worldwide, continue partnerships with the FBI and DoD, and maintain the national capability to render safe any nuclear device threat.

Performance Measures

Performance Goal (Measure)	**Emergency Operations Readiness Index** - Emergency Operations Readiness Index (EORI) measures the overall organizational readiness to respond to and mitigate radiological or nuclear incidents worldwide. (This index is measured from 1 to 100 with higher numbers meaning better readiness--the first three quarters will be expressed as the readiness at those given points in time whereas the year end will be expressed as the average readiness for the year's four quarters).		
Fiscal Year	**2012**	**2013**	**2014**
Target	N/A	N/A	91 EORI
Result	N/A		
Endpoint Target	Annually, maintain an Emergency Operations Readiness Index of 91 or higher. Note: The Nuclear Counterterrorism Incident Response (NCTIR) program, previously found under the Weapons Activities appropriation, moved to the Defense Nuclear Nonproliferation appropriation in FY 2014.		

Figure 1: Relative Out-Year Funding Priorities in Defense Nuclear Nonproliferation – Nuclear Counterterrorism Incident Response Program



Subprogram	Appropriation FY 2013	Appropriation FY 2014
Nuclear Counterterrorism Incident Response Program		
Emergency Response	Weapons Activities	Defense Nuclear Nonproliferation
Emergency Management	Weapons Activities	Defense Nuclear Nonproliferation
National Technical Nuclear Forensics	Weapons Activities	Defense Nuclear Nonproliferation
Operations Support	Weapons Activities	Defense Nuclear Nonproliferation
International Emergency Management and Cooperation	Weapons Activities	Defense Nuclear Nonproliferation
Nuclear Counterterrorism (Homeland Security) (moved to Counterterrorism and Counterproliferation)	Weapons Activities	Defense Nuclear Nonproliferation

Explanation of Funding and/or Program Changes

	(Dollars in Thousands)		
	FY 2012 Current	FY 2014 Request	FY 2014 Request vs. FY 2012 Current
Nuclear Counterterrorism Incident Response			
Emergency Response (Homeland Security)			
· Nuclear Emergency Support Team	**0**	**101,712**	**+101,712**
Reflects transfer of the program from the Weapons Activities appropriation to the Defense Nuclear Nonproliferation appropriation. There is an increase (+$11,796) for this activity above the FY 2012 Current level within Weapons Activities reflects investment in leverage at a distance capability, for the First Responder, Consequence Management and Search mission requirements. Also reflects anticipated management efficiency and workforce restructuring reductions.			
· Other Assets	**0**	**25,843**	**+25,843**
Reflects transfer of the program from the Weapons Activities appropriation to the Defense Nuclear Nonproliferation appropriation. There is no funding change between the FY 2014 Request and the FY 2012 Current level. Reflects anticipated management efficiency and workforce restructuring reductions.			
· Render Safe Stabilization Operations	**0**	**20,426**	**+20,426**
Reflects transfer of the program from the Weapons Activities appropriation to the Defense Nuclear Nonproliferation appropriation. The FY 2014 Request reflects a net decrease ($-793) compared to the FY 2012 Current level within Weapons Activities. Also reflects anticipated management efficiency and workforce restructuring reductions.			
Subtotal, Emergency Response (Homeland Security)	**0**	**147,981**	**+147,981**
National Technical Nuclear Forensics (Homeland Security)	**0**	**11,648**	**+11,648**
Reflects transfer of the program from the Weapons Activities appropriation to the Defense Nuclear Nonproliferation appropriation. The increase (+$369) for this activity above the FY 2012 Current level within Weapons Activities reflects the completion of multi-phase improvements to and maintenance of the U12P-tunnel to ensure operational readiness. Also reflects anticipated management efficiency and workforce restructuring reductions.			

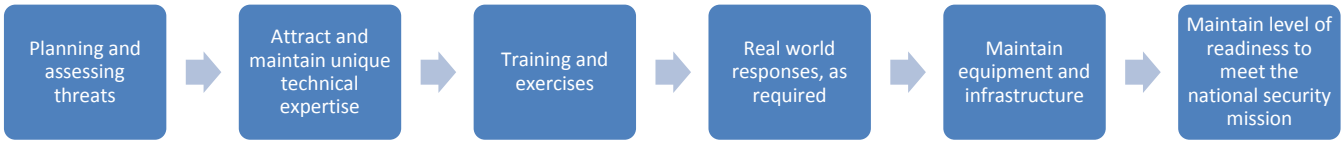
	(Dollars in Thousands)		
	FY 2012 Current	FY 2014 Request	FY 2014 Request vs. FY 2012 Current
Emergency Management (Homeland Security)	**0**	**6,195**	**+6,195**
Reflects transfer of the program from the Weapons Activities appropriation to the Defense Nuclear Nonproliferation appropriation. There is a minor decrease (-$754) for this activity below the FY 2012 Current level within Weapons Activities. The program will continue to implement and coordinate emergency management policy, preparedness, and response activities within NNSA, and promulgate appropriate DOE requirements. Also reflects anticipated management efficiency and workforce restructuring reductions.			
Operations Support (Homeland Security)	**0**	**8,350**	**+8,350**
Reflects transfer of the program from the Weapons Activities appropriation to the Defense Nuclear Nonproliferation appropriation. The net decrease (-$341) compared to the FY 2012 Current level within Weapons Activities will support continued maintenance and operation of the ECN. Also reflects anticipated management efficiency and workforce restructuring reductions.			
International Emergency Management and Cooperation	**0**	**7,119**	**+7,119**
Reflects transfer of the program from the Weapons Activities appropriation to the Defense Nuclear Nonproliferation appropriation. The increase (+$131) for this activity above the FY 2012 Current level reflects the prioritization of the program's continued assistance in establishing emergency preparedness and response programs and support to international partners. Also reflects anticipated management efficiency and workforce restructuring reductions.			
Total Funding Change, Nuclear Counterterrorism Incident Response	**0**	**181,293**	**+181,293**

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 for any nuclear or radiological incident domestically or abroad by applying the unique technical expertise within NNSA's nuclear security enterprise. The strategic approach for emergency response activities is to ensure a central point of contact and an integrated response to all emergencies. This is accomplished by ensuring the appropriate infrastructure is in place to provide command, control, coordination, and communications, and response personnel are properly organized, trained and equipped to successfully resolve an incident.

Sustainment of this subprogram is driven by maintaining equipment, sustaining training and exercises, and equipping our partners.

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 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 (including associated Annexes, Appendices and implementation plans) direct DOE and other government agencies to plan for, train, and resource a robust capability to combat terrorism, especially in the area of nuclear devices and weapons-usable nuclear materials.
- 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 2012		**136,978**
FY 2013		**150,043**
FY 2014		**147,981**
FY 2015		**142,221**
FY 2016		**143,304**
FY 2017		**148,961**
FY 2018		**150,677**
Nuclear Emergency Support Team		
FY 2012	• 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. • Provided DOE/NNSA technical assistance to a Lead Federal Agency to search for or detect illicit radiological or nuclear material. • Continued collection and expert analysis of radiological material signatures through DOE Radiological Triage program and integrated DHS Secondary Reachback into a National Reachback Program. • Addressed threats posed by domestic and foreign terrorists likely to have both the will and means to employ nuclear devices and weapons-usable nuclear materials. • Completed deliberate planning for 8-10 potential render safe response requirements. • Facilitated response and recovery efforts in the event of the intentional or accidental release of radiological or nuclear material. • Informed public health officials on evacuation guidance and health effects from the accidental or intentional release of radiological material. • Provided 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. • Integrated emerging technologies into DOE/NNSA response team capabilities to improve response capabilities. • Developed and integrated stabilization technologies and capabilities in support of the DOE/NNSA and FBI response teams. • Deployed stabilization tools into cities designated by the FBI. • Continued training and exercising for responding to scenarios that involve radiological at-sea search on ocean-going vessels.	**89,916 (Funded in Weapons Activities)**
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 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.	**102,244 (Funded in Weapons Activities)**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	• Sustain 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 nuclear devices and weapons-usable nuclear materials. • Provide DOE/NNSA technical assistance for the planning, execution, and evaluation of National-level exercises including, but not limited to, MC and NUWAIX during which DOE/NNSA is not the Lead Federal Agency. • Develop advanced inverse modeling capability for rapid and accurate improvised nuclear device characterization.	
FY 2014	• 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 TCE for each event. • Address threats posed by domestic and foreign terrorists likely to have both the will and means to employ nuclear devices and weapons-usable nuclear materials. • Continue collection and expert analysis of radiological material signatures through DOE Radiological Triage program. • Provide DOE/NNSA technical assistance for the planning, execution, and evaluation of National-level exercises including, but not limited to, MC and NUWAIX during which DOE/NNSA may be the Lead Federal Agency. • Continue development of next generation neutron diagnostic tool for DOE/NNSA response teams. • Lead interagency nuclear weapons accident exercise (NUWAIX) with participation by DoD, FBI and other Federal agencies.	**101,712**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• 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 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. • Sustain Render Safe capabilities for an identified critical mission area in support of Principle Operational Partner. This effort includes predictive capability, • Lead interagency NUWAIX with participation by DoD, FBI and other Federal agencies. • Address threats posed by domestic and foreign terrorists likely to have both the will and means to employ nuclear devices and weapons-usable nuclear materials. • Provide DOE/NNSA technical assistance for the planning, execution, and evaluation of National-level exercises including, but not limited to, MC and NUWAIX during which DOE/NNSA is not the Lead Federal Agency.	**96,954** **97,875** **103,000** **104,716**

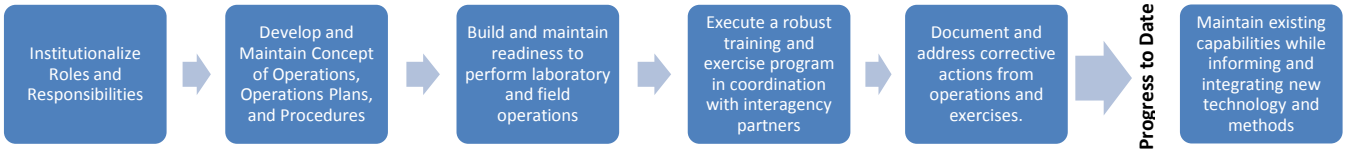
Fiscal Year	Activity	Funding (Dollars in Thousands)
Other Assets		
FY 2012	• Provided assistance to local, state and other federal agencies and conducted exercises in response to emergencies involving nuclear/radiological materials in support of States and local jurisdictions. • Worked jointly with the Federal coordinating agency which is usually the Department of Homeland Security / Federal Emergency Management Agency during any radiological accident or incident. • Coordinated with the Environmental Protection Agency (EPA)/Nuclear Regulatory Commission (NRC) and other elements within DOE, and provided 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.	**25,843 (Funded in Weapons Activities)**
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. • 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. • Coordinate with the EPA/NRC and other elements within DOE, and provide support to the NEST programs to safeguard the public and environment to ensure the successful resolution of an accident or incident.	**26,999 (Funded in Weapons Activities)**
FY 2014	• Facilitate radiological response and recovery efforts in the event of the intentional or accidental release of radiological or nuclear material. • Inform public health officials on evacuation guidance and health effects from the accidental or intentional release of radiological materials. • Serve as the lead Federal Agency for National level Exercise.	**25,843**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Maintain commensurate training to accommodate broader base of requests to the Consequence Management Home Team (CMHT). Sustain data telemetry systems for communications between the field teams and CMHT. • Facilitate radiological response and recovery efforts in the event of the intentional or accidental release of radiological or nuclear material. • Inform public health officials on evacuation guidance and health effects from the accidental or intentional release of radiological materials. • Work jointly with the Federal coordinating agency, which is usually the Department of Homeland Security/Federal Emergency Management Agency during any radiological accident or incident. • Coordinate with the EPA/NRC and other elements within DOE, and provide support to the NEST programs to safeguard the public and environment to ensure the successful resolution of an accident or incident. • Serve as the lead Federal Agency for National level Exercise.	**25,941** **26,103** **26,635** **26,635**

Fiscal Year	Activity	Funding (Dollars in Thousands)
Render Safe Stabilization Operations		
FY 2012	• In coordination with FBI, fully trained and equipped City 3 and City 4 to stabilize a terrorist nuclear device. • Built DOE/NNSA Render Safe home team to improve technical advice capability to support deployment of stabilization tools during a response.	**21,219 (Funded in Weapons Activities)**
FY 2013	• Continue production of the second generation of stabilization equipment.	**20,800 (Funded in Weapons Activities)**
FY 2014	• In coordination with FBI, continue deployment of stabilization capability. • Continue production of the second generation of stabilization equipment.	**20,426**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• In coordination with FBI, continue deployment of stabilization capability.	**19,326** **19,326** **19,326** **19,326**

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, readiness to deploy ground sample collection, device disposition, and examination teams to 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 NTNF 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 processing 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 2012	• Executed Exercise Opal Tiger. • Executed End to End Pre-Detonation Device Exercise Marble Challenge 12-02. • Developed and maintained concept of operations, operational plans, and procedures. • Developed modeling, signatures development, knowledge base and data management. • Supported FBI in collection of pre-detonation device forensics evidence. • Transitioned from G-Tunnel to P-Tunnel in support of Disposition operations.	**11,279 (Funded in Weapons Activities)**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	• Supported FBI and DoD in collection, analysis, and evaluation in support of post-detonation NTNF. • Supported the FBI and interagency in Bulk Analysis of Special Nuclear Materials. • Supported training, drills, and exercises.	
FY 2013	• Develop and maintain concept of operations, operational plans and procedures. • Support FBI and DOD in collection, analysis and evaluation post-detonation NTNF. • Develop modeling, signatures development, knowledge base and data management. • Execute training events for NTNF post-detonation data evaluation. • Execute post-detonation ground collection exercises. • Execute pre-detonation device exercises for the Disposition and Forensics Evidence Analysis Team (DFEAT) at NNSS. • Support FBI in collection of pre-detonation device forensics evidence. • Improve operational capabilities in NNSS P-Tunnel. • Support the FBI and interagency in analysis of bulk Special Nuclear Materials. • Create and begin execution of a roadmap to objective operational capability for the Bulk Special Nuclear Materials program (BSAP). • Support training, drills and exercises.	**11,694 (Funded in Weapons Activities)**
FY 2014	• Provide capability and support to the interagency NTNF program. • Maintain and improve capability and readiness to respond to pre- and post-detonation events. • Plan and participate in pre- and post- detonation NTNF exercises. • Execute a full scale ground collections exercise. • Continue improvements to the NTNF Data Evaluation Program. • Execute an end-to-end DFEAT exercise. • Continue improvements and maintain P-Tunnel in support of the Pre-Detonation Device Program. • Build and maintain an objective operational capability for the BSAP.	**11,648**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Provide capability and support to the interagency NTNF program. • Maintain and improve capability and readiness to respond to pre- and post-detonation events. • Refine the Concept of Operations and pursue the training and technology to support FBI and DoD in post-detonation forensics. • Continue improvements and maintain P-Tunnel in support of the Pre-Detonation Device Program. • Maintain P-Tunnel in support of the Pre-Detonation Device Program. • Refine and maintain an objective operational capability for the BSAP NTNF.	**10,193** **10,447** **9,243** **11,447**

Emergency Management (Homeland Security)
Overview

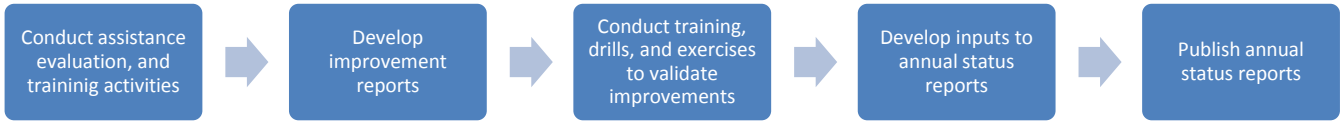
The Emergency Management subprogram develops and implements specific programs, plans, and systems to minimize the impacts of emergencies on worker and public health and safety, the environment, and national security. This is accomplished by promulgating appropriate Departmental policies and implementing requirements and guidance; developing and conducting training and other emergency preparedness activities; supporting DOE/NNSA readiness assurance activities and participating in interagency emergency planning and coordination activities. The objective is to continue to have a fully implemented and fully integrated Departmental comprehensive emergency management system throughout the Enterprise.

The Emergency Management subprogram serves as the single point of contact for implementing and coordinating emergency management policy, preparedness, and response activities within DOE/NNSA, including managing and coordinating NNSA field and contractor implementation of emergency management policy.

The Emergency Operations Training Academy (EOTA) is an academically recognized training and development center that remains on the cutting edge of technology and innovation. It is the Office of Emergency Operations point of service for training development to enhance the readiness of personnel in the emergency operations community.

The Continuity Program (CP) continues to include responsibility for all of DOE and NNSA and is a HSC/NSC required policy initiative. These programs develop the Headquarters and the field Continuity of Operations and Continuity of Government plans that are updated constantly.

Sequence



Benefits

- The 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 worker and public safety, the environment, and national security. 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. Also, this subprogram provides ongoing technical assistance and evaluation support for implementation of emergency management requirements at DOE/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

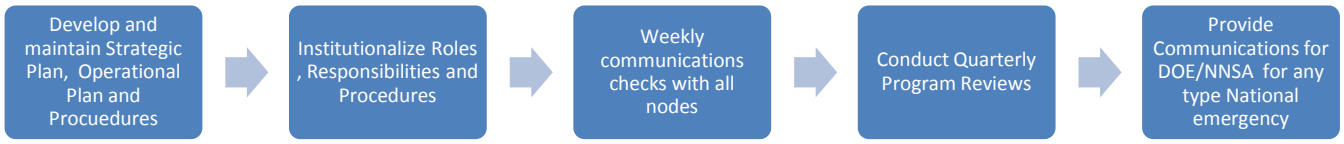
Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• In addition to providing technical assistance and conducting information sharing activities, the Emergency Management subprogram conducted six no-notice exercises at DOE/NNSA sites to gauge emergency preparedness. Additional emphasis will be placed on the impacts of beyond-design-basis-events. • The EOTA continued with the delivery of intermediate and advanced-level Incident Command System training courses, in addition to business system improvement. • The Continuity Program (CP) continued to participate in periodic training and exercises as required.	**6,949 (Funded in Weapons Activities)**
FY 2013	• The Emergency Management subprogram will conduct four to five no-notice exercises at DOE/NNSA sites to gauge emergency preparedness. The subprogram will continue to conduct activities to integrate emergency management practices across the DOE/NNSA enterprise. • The EOTA will continue to serve as the primary point of training for first responder and render safe activities. • 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. • Guidance for consideration of emergency planning for severe events will be developed. • EOTA will continue with the delivery of intermediate and advanced-level Incident Command System training courses, in addition to business system improvement. • The CP will continue to participate in periodic training and exercises as required. • The Continuity Program will continue to update and implement departmental policy and procedures.	**6,629 (Funded in Weapons Activities)**
FY 2014	• The Emergency Management subprogram will conduct four to five no-notice exercises at DOE/NNSA sites to gauge emergency preparedness. The Emergency Management subprogram will continue to conduct activities to promote consistency of emergency management practices at DOE/NNSA sites and in implementing emergency planning for severe events. • EOTA will continue to serve as the primary point of training for first responder and render safe activities. • 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. • The CP will continue to participate in periodic training and exercises as required. • The CP will continue to update and implement departmental policy and procedures. • EOTA will continue with the delivery of intermediate and advanced-level Incident Command System training courses, in addition to business system improvement.	**6,195**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Activities of all the offices within Emergency Management will be similar to those in FY 2014 to achieve the proper investment for NCTIR to maintain readiness. • The Emergency Management subprogram will conduct four to five no-notice exercises at DOE/NNSA sites to gauge emergency preparedness. The Emergency Management subprogram will continue to conduct activities to promote consistency of emergency management practices at DOD/NNSA sites and in implementing emergency planning for severe events. Continue to implement emergency management policy for DOE/NNSA sites. • The CP will continue to update and implement departmental policy and procedures.	**6,143** **6,143** **6,143** **6,143**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	• EOTA will continue to serve as the primary point of training for first responder and render safe activities. • EOTA will continue with the delivery of intermediate and advanced-level Incident Command System training courses, in addition to business system improvement.	

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 on a 24/7/365 day basis.

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 Legacy/COOP, Emergency Response, Forensics and Counterterrorism missions, as well as 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 2012	• Provided the DOE/NNSA national emergency response community a world-class, state-of-the-art, high speed, global emergency communications network on a 24/7/365 day basis to support the exchange of classified and unclassified voice, data and video information. • Leveraged the newly formalized Nuclear Threat Reduction Channels (NTR) and established secure communications to facilitate the sharing of disablement tool technologies and other sensitive information.	**8,691 (Funded in Weapons Activities)**
FY 2013	• Continue maintenance and operation of the ECN in order to provide a scalable, interoperating system capable of seamlessly linking key Emergency Management Team personnel to provide real-time support to the DOE/NNSA Headquarters Emergency Management Team. • 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 NTR Channels and establish secure communications to facilitate the sharing of disablement tool technologies and other sensitive information.	**8,799 (Funded in Weapons Activities)**
FY 2014	• Continue supporting National Response, COOP/Legacy, Forensics and Counterterrorism elements. • Continue maintenance and operation of the ECN in order to provide a scalable, interoperating system capable of seamlessly linking key Emergency Management Team personnel to provide real-time support to the DOE/NNSA Headquarters Emergency Management Team.	**8,350**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	• Address critical deficiencies and correct to achieve full system accreditation.	
FY 2015	• Continue to maintain and operate the technical capabilities of the ECN in order to meet the National Security mission requirements and to support the NNSA Network vision. • Support system and provide the operational support required.	**7,175**
FY 2016		**7,675**
FY 2017		**8,175**
FY 2018		**9,728**

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, Cambodia, Canada, Chile, China, Denmark, Djibouti, Finland, France, Iceland, India, Iraq, Israel, Japan, Malaysia, Mexico, Morocco, Norway, Pakistan, Philippines, Russia, Singapore, South Africa, South Korea, Sweden, Thailand, Taiwan, and Vietnam. The NNSA will continue to liaise with, and participate in projects sponsored by, international organizations (International Atomic Energy Agency (IAEA), Nuclear Energy Agency, European Union (EU), North Atlantic Treaty Organization (NATO), Group of 8 (G8), World Health Organization (WHO), World Meteorological Organization (WMO), and Arctic Council), exhibiting leadership under assistance and cooperation agreements to provide consistent emergency plans and procedures, effective early warning and notification of nuclear/radiological incidents or accidents, and delivery of assistance to an affected nation should an incident/accident occur.

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 to assisting the international community in combating 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 2012	• Supported the IAEA in developing and implementing new technical standards and guidance for emergency management affecting all member states (approximately 150 countries). • Provided 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. • Supported 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. • Conducted 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. • Continued 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. • Worked to maximize synergies and ensure integration of emergency management systems and training and emergency response activities with other ongoing NNSA projects involving foreign partners.	**7,250 (Funded in Weapons Activities)**
FY 2013	• Provide 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. • Support 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, develop and conduct 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, continue to design, organize and conduct specialized emergency management training courses and provide technical assistance to address methods and procedures for combating nuclear terrorism. • Provide specific training tailored to partner nation needs on consequence management, emergency response, medical response, major public event security, and exercise design and conduct. • Implement 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.	**7,139 (Funded in Weapons Activities)**

Fiscal Year	Activity	Funding (Dollars in Thousands)
	• 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. • Work 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	• IEMC will continue to design, organize and conduct specialized emergency management training courses and programs to meet the specific emergency management needs of partner nations. • Continue to provide 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. • Develop a robust and harmonized international management system implementing specialized emergency response activities, including developing emergency policy, plans and procedures and radiological search, training, protocols and techniques.	**7,119**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• IEMC will continue to assist governments and international organizations to develop, design, organize and conduct specialized emergency management training courses and programs to meet the specific emergency management needs of partner nations. • Continue to provide enhanced communication and radiation monitoring equipment, technical assistance and training for International Atomic Energy Agency (IAEA) and foreign government emergency programs to address nuclear/radiological incidents and accidents including lost radiological sources. • Develop a robust and harmonized international management system implementing specialized emergency response activities, including developing emergency policy, plans and procedures and radiological search, consequence management, training, protocols and techniques.	**6,586** **6,986** **6,986** **6,986**

Supporting Information

Capital Operating Expenses [a]

Capital Operating Expenses Summary

(Dollars in Thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Capital Operating Expenses			
General Plant Projects	1,812	1,852	1,893
Capital Equipment	0	0	0
Total, Capital Operating Expenses	**1,812**	**1,852**	**1,893**

Outyear Capital Operating Expenses Summary

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
Capital Operating Expenses					
General Plant Projects	1,893	1,935	1,978	2,022	2,066
Capital Equipment	0	0	0	0	0
Total, Capital Operating Expenses	**1,893**	**1,935**	**1,978**	**2,022**	**2,066**

[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.

Counterterrorism and Counterproliferation Programs [a]
Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Counterterrorism and Counterproliferation Programs [b]			
Nuclear Counterterrorism	0	0	59,000
Counterterrorism and Counterproliferation Capability Development	0	0	15,666
Total, Counterterrorism and Counterproliferation Programs	**0**	**0**	**74,666**

Out-Year Funding Profile by Subprogram and Activity

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
Counterterrorism and Counterproliferation Programs [b]					
Nuclear Counterterrorism	59,000	60,900	64,500	66,500	68,200
Counterterrorism and Counterproliferation Capability Development	15,666	13,266	10,997	11,659	12,486
Total, Counterterrorism and Counterproliferation Programs	**74,666**	**74,166**	**75,497**	**78,159**	**80,686**

[a] A classified version will be provided under separate cover.
[b] This represents the proposed control level.

Public Law Authorizations

National Nuclear Security Administration Act, (P.L. 106-65), as amended
National Defense Authorization Act for FY 2013 (P.L. 112-239)
The Continuing Appropriations Resolution, 2013 (P.L. 112-175)

Overview

The Counterterrorism and Counterproliferation Programs (CTCP) advance U.S. Government counterterrorism and counterproliferation goals through innovative science, technology, and policy-driven solutions. The CTCP Programs consolidates the Nuclear Counterterrorism subprogram from the Nuclear Counterterrorism Incident Response Program (NCTIR) and the National Security Applications Program (NSA) into an integrated program of technical work that materially contributes to the Department's goal of enhancing nuclear security through preventing nuclear terrorism. In addition to consolidation, this new program is a key nexus to coordinate and integrate other nuclear technical counterterrorism efforts existing in the multiagency framework within the Federal government. The program supports science to understand nuclear threat devices, including Improvised nuclear devices, foreign nuclear weapons (with emphasis on loss of custody), and their constituents (namely nuclear and energetic materials). Key CTCP technical activities sustain and exercise the U.S. Government's ability to understand and prevent nuclear terrorism and to counter nuclear device proliferation. Other activities within CTCP include national and international outreach to strengthen nuclear counterterrorism capabilities through table-top exercises, bilateral dialogues, and technical exchanges. Finally, CTCP supports interagency efforts through jointly-funded, long-term research and development (R&D) on selected counterterrorism, survivability, and weapons-effects activities, and by providing critical technical expertise through details and assignments.

Program Accomplishments and Milestones

The CTCP Programs, through its Nuclear Counterterrorism (NCT) technical activities funded under NCTIR, achieved several notable accomplishments and milestones in FY 2012. Most notable was the successful execution of the first of a four part series of CTCP tests designed to validate our 3-D models against a wide range of nuclear threat devices including unusual configurations, a range of environmental insults, and the effects of emergency destruct tools (extant or in development). This five-year $30M joint effort with the Department of Defense (DoD) supporting enhanced capabilities development for U.S. Special Operations Command will greatly increase our confidence in predictive capability and rendering safe or un-useable actual and postulated nuclear threat devices.

The NCT subprogram also developed a thermal equation of state for a military grade high explosive. Understanding the thermal variable allows the NCT program to develop general approaches for handling explosive response modeling in nuclear threat devices under a wide range of conditions with higher confidence.

Also notable in FY 2012, under its Counterterrorism and Counterproliferation Capability Development activities (funded in other NNSA accounts in previous years), CTCP also conducted its 100th nuclear devices and weapons-usable nuclear materials counterterrorism tabletop exercise, having trained over 8,800 federal, state, local and international officials to date in preventing and responding to terrorist incidents involving nuclear, radiological, or nuclear devices and weapons-usable nuclear materials.

Program Planning and Management

The CTCP Programs heavily leverage the nuclear security enterprise and Defense Program's stockpile tools while being heavily leveraged by interagency partners for technical/device-related problem solving. The NNSA will manage these demands through the Counterterrorism and Counterproliferation Leadership Council, consisting of senior leaders from across the Government. The FY 2014 request for CTCP will support three interwoven strategies: (1) sustainment and execution of the NCT program within the nuclear security enterprise; (2) coordination and mission management of all relevant CTCP programs within the NNSA, as outlined in the *Counterterrorism and Counterproliferation Management Plan*, and (3) coordination and joint execution of interagency technical efforts including selected nuclear forensic science advancements, foreign weapon effects and electromagnetic pulse (EMP) studies, open source evaluations, and focused Nuclear Loss of Custody studies.

Strategic Management

The CTCP Programs align its major efforts to the President's National Security Agenda. Supporting USG policy priorities and requirements as detailed in the National Counterterrorism Strategy, National Security Strategy and the Nuclear Posture Review Report, the Acting Administrator established the following Key Goals for NNSA that are directly relevant to CTCP:

- reduce nuclear dangers;
- strengthen the science, technology, and engineering base; and,
- drive an integrated and effective nuclear security enterprise.

Several factors are critical to the overall achievement of the CTCP Programs' strategic goals:

- current or emerging demands imposed on the U.S. Intelligence Community, the DoD combatant commands, and the DoD and FBI National Mission Force;
- successful coordination and execution with both interagency and key international partners; and
- synchronizing and executing internal agency activities.

Major Outyear Priorities and Assumptions

Outyear funding levels for the CTCP total $308,508,000 for FY 2015 through FY 2018. The CTCP Programs' outyear priorities are twofold: enhance experimental and scientific efforts to improve and sustain our ability to understand nuclear threats, and to sustain our CTCP capabilities while enhancing capabilities of key partners. These efforts reside within two sub-programs.

The NCT and the CTCP Capability Development subprogram priorities are focused on increasing experimental programs that impact its core assessment mission while expanding our knowledge to measurably inform policy-relevant decision-making. One key assumption for the program is that key nuclear security enterprise experimental facilities will be available for the duration of current nuclear and energetic materials roadmap needs. CTCP would need to adjust funding priorities should key facilities be identified for closure before experimental activities are completed.

Program Goals and Funding

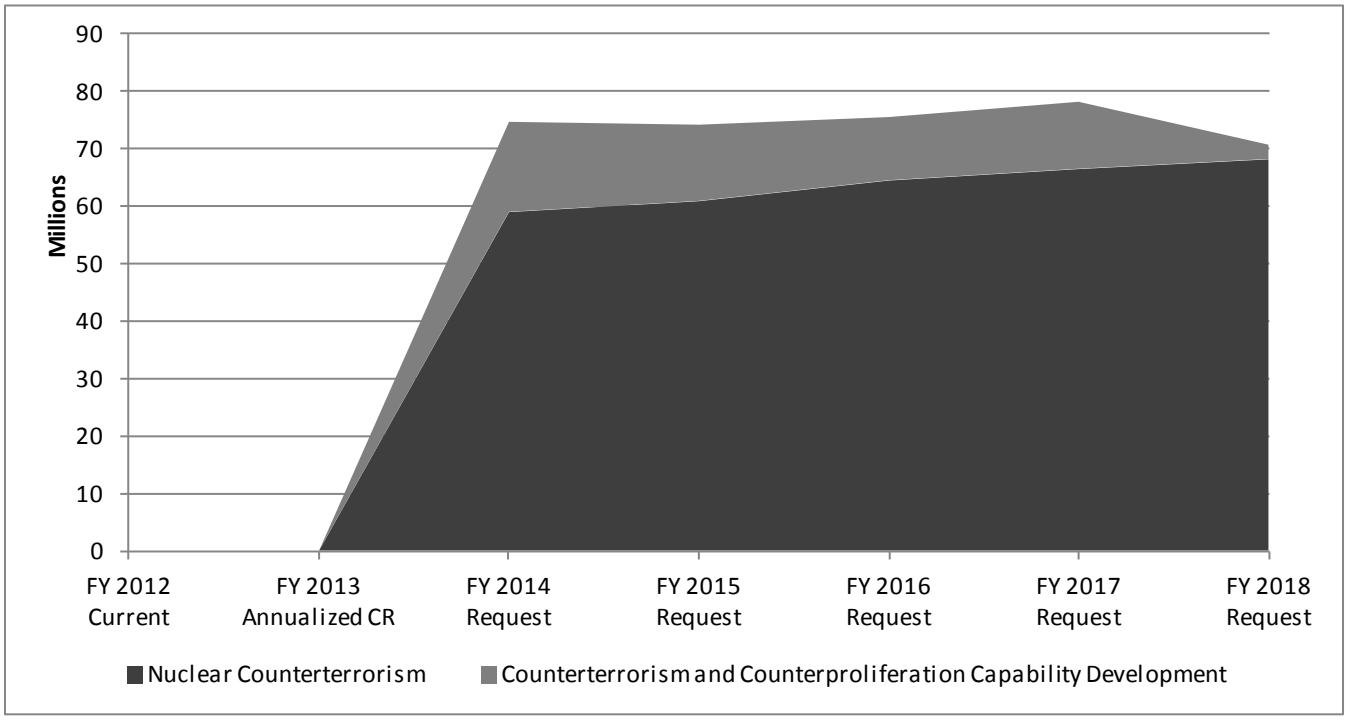
The NCT Program Goals are centered on improving NCT's ability to assess nuclear threat devices and inform national and international policy decision making processes to minimize the possibility of a nuclear detonation or nuclear terrorist event. The program also coordinates collaborative technical efforts across the nuclear security enterprise to sustain key experimental facilities and expertise. Finally, the program continues its collaborative outreach to the US Government and the governments of the United Kingdom and the Republic of France.

The Counterterrorism and Counterproliferation Capability Development goals include conducting tabletop exercises at new sites/locations across the United States each year to ensure the Federal, State, local, and private sector capabilities required to prevent and respond to terrorist incidents involving nuclear devices and nuclear materials. Internationally, this program's priorities focus on expanding nuclear counterterrorism partnerships with key foreign and multilateral organization partners through dialogues, joint exercises, and technical exchanges, to counter the global nuclear terrorism threat. Program assumptions include the continued support of USG and international partners, including cost-share partnerships, where appropriate, to maintain the program's very high return on investment.

Performance Goal (Measure)	**WMD Counterterrorism Expertise** - Cumulative number of officials trained in Weapons of Mass Destruction (WMD) Counterterrorism (CT) prevention and response via Office of Counterterrorism Policy and Cooperation exercises.		
Fiscal Year	**2012**	**2013**	**2014**
Target	N/A	10,200 trained personnel	11,000 trained personnel
Result			
Endpoint Target	By the end of FY 2018, train 14,200 officials in Weapons of Mass Destruction (WMD) Counterterrorism (CT) prevention and response. Note: The Office of Counterterrorism Policy and Cooperation's Weapons of Mass Destruction (WMD) Counterterrorism Exercise Program designs, produces, and conducts tailor-made tabletop exercises for public and private sector customers with nuclear or radioactive materials or associated nuclear security responsibilities. Designed to build teamwork and an in-depth understanding of the roles and responsibilities of agencies charged with responding to terrorist-related radiological, nuclear, or WMD-related incidents, these exercises bring together Federal, State, and local decision-makers and first responders. This metric provides a quantitative (cumulative number of officials trained) measure of this program's impact.		

Performance Goal (Measure)	**Tier Threat Modeling Archive - Validation (TTMA-V)** - -Percent complete toward validating national 3-D predictive modeling capability using four different experimental series designed to produce data needed to reconstruct nuclear threat device emergency disablement scenarios.		
Fiscal Year	**2012**	**2013**	**2014**
Target	N/A	15% Complete	35% Complete
Result			
Endpoint Target	By the end of FY 2017, complete the validation of the national 3-D predictive modeling capability. TTMA-V is a cornerstone joint project for the Joint Disablement Campaign that will build confidence in the models used to develop key products throughout the interagency to include assessments, tool development support, and procedure development. Follow-on projects are identified but must wait for the refinements this project will produce. This is a joint effort with the Defense Threat Reduction Agency.		

Figure 1: Relative Out-Year Funding Priorities in Defense Nuclear Nonproliferation Activities – Counterterrorism and Counterproliferation Programs



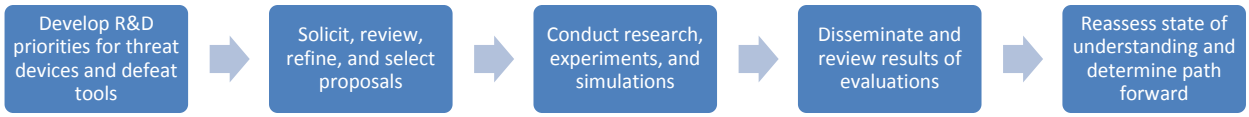
Explanation of Funding and/or Program Changes

	(Dollars in Thousands)		
	FY 2012 Current	FY 2014 Request	FY 2014 Request vs. FY 2012 Current
Counterterrorism and Counterproliferation Programs			
The Counterterrorism and Counterproliferation Programs is proposing a new GPRA unit for FY 2014. It combines the NCT Program (formerly within NCTIR) with a revised work plan formerly funded by the National Security Applications (NSA) program. When compared to the FY 2012 Current level for these activities as included in the NCTIR and NSA programs this request represents an increase of $14,4M; however when comparing the FY 2013 Annualized CR level to FY 2014 request for these activities, there is a decrease of $6.83M . This activity also reflects anticipated management efficiency and workforce restructuring reductions.			
· **Nuclear Counterterrorism**	**0**	**59,000**	**+59,000**
The increase reflects funding transferred from Nuclear Counterterrorism Incident Response Program (NCTIR). When comparing the NCT activities from the FY 2012 Current level of $50.2M to the FY 2014 request of $59.0M equates to an increase of $8.7M; however, when comparing these activities in the FY 2013 annualized CR level of $63.24M to the FY 2014 request of $59.0M there is an actual decrease of $4.24M. Funding will support key bilateral activities with the UK and France and a series of major experiments in support of the Joint Disablement Campaign, a NNSA/DoD effort to develop, model, and validate render safe/render unusable tools, techniques, and procedures. Reflects anticipated management efficiency and workforce restructuring reductions.			
· **Counterterrorism and Counterproliferation Capability Development**	**0**	**15,666**	**+15,666**
The increase reflects funding transferred mostly from National Security Applications. When comparing these activities from the FY 2012 Current level of $60.22M to the FY 2014 request level of $74.66M results in an increase of $14.4M; however, when comparing the annualized CR level of $81.49M to the FY 2014 request of $74.66M there is a decrease of $6.8M. The funding will support the planned program in non-stockpile device forensic modeling and output tools, the development and conduct of domestic and international nuclear counterterrorism tabletop exercises, as well as technical exchanges with selected international partners to strengthen their nuclear counterterrorism capabilities, preparedness, and expertise. This activity also reflects anticipated management efficiency and workforce restructuring reductions.			
Total Funding Change, Counterterrorism and Counterproliferation Programs	**0**	**74,666**	**+74,666**

Nuclear Counterterrorism
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 2014, NCT will continue a series of major experiments in support of the Joint Disablement Campaign, a NNSA/DoD effort to develop, model, and validate render safe/render unusable tools, techniques, and procedures.

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 other non-US stockpile nuclear weapons designs. The NCT program 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 a wide range of foreign nuclear weapons (with emphasis on loss of custody scenarios) 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 the U.S. policy agenda." April 6, 2010

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• This subprogram was executed as the Nuclear Counterterrorism (NCT) Program within the Nuclear Counterterrorism and Incident Response program within Weapons Activities appropriation.	**50,222**
FY 2013	• This subprogram is executed as the Nuclear Counterterrorism (NCT) Program within the Nuclear Counterterrorism and Incident Response program within Weapons Activities appropriation.	**63,248**
FY 2014	• Planned activities include 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 addition, the Tier Threat Modeling Archive – Validation project experiment series will progress as planned.	**59,000**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Planned activities include 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 addition, the Tier Threat Modeling Archive – Validation project experiment series will be completed in 2017, at which time the entire project will be evaluated. Additional large scale experiments are also planned, meeting both DoD operational and Intelligence Community needs.	**60,900** **64,500** **66,500** **68,200**

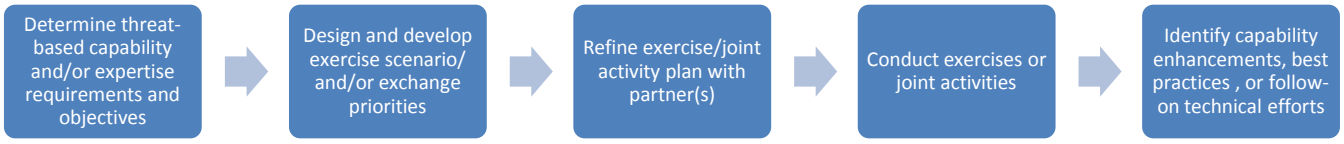
Counterterrorism and Counterproliferation Capability Development
Overview

The Counterterrorism and Counterproliferation (CTCP) Capability Development subprogram funds a two-fold approach:

First, the CTCP Capability Development subprogram funds closely coordinated technical development activities with the Department of Defense's Defense Threat Reduction Agency (DTRA) and the U.S. Special Operations Command, which enhances national security by developing solutions to selected problems within nuclear forensics, weapons effects and survivability, nuclear loss of custody detection, and nuclear device modeling and simulation. The NNSA laboratories are the best suited element within the U.S. Government for conducting the technical analyses that lie at the heart of these issues. Through support and coordination of these activities, throughout the nuclear security enterprise, the Department will contribute to U.S. nuclear security by sustaining increasingly rare expertise and tools needed for these unique capabilities.

Second, this subprogram funds the development and enhancement of USG and international nuclear counterterrorism security capabilities needed to prevent terrorist incidents involving nuclear or radiological devices. Specifically, this program supports White House led bilateral Nuclear Threat Reduction Channel collaborations between the U.S. and the United Kingdom (UK) and the U.S. and the Republic of France. Further, this program funds the design, production, and conduct of nuclear counterterrorism tabletop exercises at key domestic public and private sector locations, and with key foreign partners. These exercises are custom-designed to bring together the various Agencies/entities charged with security and response functions, and focus on sensitizing participants to the nuclear terror threat and associated counterterrorism objectives; strengthening coordination and communication between responding agencies and with the public; and providing participants hands-on, practical experience in exercising the security protocols, crisis management, and consequence management functions that would be needed for a real world event. These funds also support program execution and technical expertise to execute dialogues and technical exchanges with key foreign partners and multilateral organizations to enhance nuclear counterterrorism policies and practices at the national, bilateral, and international levels, and to implement Presidential global nuclear security priorities. Studies of open source technical information pertaining to nuclear terrorism are also completed to shape both domestic and international understanding of the potential threat spectrum. These funding investments are leveraged through the contributions of U.S. Government and foreign partners in cost-share activities, to the extent possible, as a force multiplier effect on results.

Exercises and Technical Exchanges



Benefits

- Improve the U.S.'s ability to attribute nuclear detonations of unusual device types through nuclear forensics, thereby improving deterrence.
- Increase our understanding of and ability to model electromagnetic pulse and other nuclear effects from foreign and unusual devices and their potential impacts to critical infrastructure.
- Evaluate new approaches to detect the potential loss of custody of foreign nuclear weapons or components.
- Exercise and strengthen capabilities and expertise required to prevent and respond to terrorist incidents involving nuclear devices and weapons-usable nuclear materials, domestically and internationally.

Funding and Activity Schedule

Fiscal Year	Activity	Funding (Dollars in Thousands)
FY 2012	• Most elements of this activity were funded under the National Security Applications program within the Weapons Activities appropriation.	**10,000**
FY 2013	• Most elements of this activity were funded under the National Security Applications program within the Weapons Activities appropriation.	**18,248**
FY 2014	• Support design, qualification, and continue assessments of outputs of non-US nuclear weapons and the development and maintenance of computational and experimental tools; apply outputs to test key components, materials, and systems in various nuclear weapon environments; validate codes to certify system hardness. • Create validated models and simulations of the response and effects of EMP and other nuclear outputs; maintain and improve experimental, modeling, and simulation capabilities for post-detonation forensics of a nuclear device. • Support international collaboration activities through the U.S./UK/France Nuclear Threat Reduction channels to conduct improvised nuclear device characterization studies and sensitive information disclosure exercises, as well as materials attractiveness studies under the US/Japan Nuclear Security Working Group. • Design, develop, and conduct of "*Silent Thunder"* domestic nuclear counterterrorism tabletop exercises at select U.S. locations, in conjunction with the Global Threat Reduction Initiative and FBI, and conduct international nuclear counterterrorism security exercises with key foreign partners.	**15,666**
FY 2015 **FY 2016** **FY 2017** **FY 2018**	• Improve validated models and simulations of the response and effects of EMP and other nuclear outputs on electronic components, systems, and subsystems; maintain and improve capabilities for post-detonation forensics; begin development activities for new detection, collection, and analysis capabilities in support of the NTNF attribution mission. • Support international collaboration activities through the U.S./UK/France Nuclear Threat Reduction channels to conduct improvised nuclear device characterization studies and sensitive information disclosure exercises, as well as materials attractiveness studies under the US/Japan Nuclear Security Working Group. • Design, develop, and conduct of *"Silent Thunder"* domestic nuclear counterterrorism tabletop exercises and conduct of international counterterrorism security exercises with key foreign partners.	**13,266** **10,997** **11,659** **12,486**

Naval Reactors

Naval Reactors

Naval Reactors
Proposed Appropriation Language

For Department of Energy expenses necessary for naval reactors activities to carry out the Department of Energy Organization Act (42 U.S.C. 7101 et seq.), including the acquisition (by purchase, condemnation, construction, or otherwise) of real property, plant, and capital equipment, facilities, and facility expansion, $1,246,134,000, to remain available until expended: Provided, That $44,404,000 shall be available until September 30, 2015 for program direction.

Explanation of Change

Change from the language proposed in FY 2013 consists of a change to the requested funding amount.

Naval Reactors

Overview
Appropriation Summary by Program

(Dollars in Thousands)

	FY 2012 Current	FY 2013 Annualized CR [a]	FY 2014 Request
Naval Reactors			
Naval Reactors Operations and Infrastructure [b]	358,300	360,493	455,740
Naval Reactors Development [b]	421,000	423,577	419,400
S8G Prototype Refueling [b]	99,500	100,109	144,400
OHIO Replacement Reactor Systems Development [b]	121,300	122,042	126,400
Program Direction [b]	40,000	40,245	44,404
Construction [b c]	39,900	40,144	69,773
Subtotal, Naval Reactors	**1,080,000**	**1,086,610**	**1,260,117**
Use of Prior Year Balances [d]	0	0	-13,983
Total, Naval Reactors	**1,080,000**	**1,086,610**	**1,246,134**

Out-Year Appropriation Summary by Program [e]

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
Naval Reactors					
Naval Reactors Operations and Infrastructure [b]	455,740	436,180	469,300	480,563	484,316
Naval Reactors Development [b]	419,400	419,000	411,700	416,100	454,300
S8G Prototype Refueling [b]	144,400	128,600	133,000	124,000	190,000
OHIO Replacement Reactor Systems Development [b]	126,400	156,100	177,000	213,700	156,700
Program Direction [b]	44,404	47,400	49,700	52,100	54,700
Construction [b]	69,773	189,820	223,900	359,000	255,400
Subtotal, Naval Reactors	**1,260,117**	**1,377,100**	**1,464,600**	**1,645,463**	**1,595,416**
Use of Prior Year Balances	-13,983	0	0	0	0
Total, Naval Reactors	**1,246,134**	**1,377,100**	**1,464,600**	**1,645,463**	**1,595,416**

[a] FY 2013 amounts shown reflect the P.L. 112-175 continuing resolution level annualized to a full year.

[b] This represents the proposed control level.

[c] Funding in FY 2013 is based on a full-year continuing resolution with 301(c) restrictions in effect. As a result, there are funds in excess of requirements for 08-D-190, ECF M-290 Receiving/Discharge Station, NRF, and 10-D-904, NRF Infrastructure Upgrades, ID and these amounts will be realigned through a reprogramming to support other program work.

[d] In order to fund NNSA contractor pensions in FY 2014, the Naval Reactors' request uses $13,983,244 of prior year balances. These funds are available due to more current information pertaining to the Program's joint Navy/DOE funded contractor pension plans. The $13,983,244 of prior year balances consists of $3,400,000 from FY 2012 Naval Reactors Operations and Infrastructure, $5,200,244 from FY 2012 Naval Reactors Development, $600,000 from FY 2012 S8G Prototype Refueling, $800,000 from FY 2012 Ohio Replacement Reactor Systems Development and $3,983,000 from FY 2013 Naval Reactors Development.

[e] The annual totals include an allocation to NNSA from the Department of Defense's five year budget plan. The amounts included for Naval Reactors are $248,858,000 in FY 2015, $313,549,000 in FY 2016, $469,503,000 in FY 2017, and $393,440,000 in FY 2018.

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
National Defense Authorization Act for FY 2013 (P.L. 112-239)
The Continuing Appropriations Resolution, 2013 (P.L. 112-175)

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 major combatants) and fulfills the Navy's requirements for new nuclear propulsion plants that meet current and future national defense requirements.

Naval Reactors' mission includes ensuring the safety of reactors and associated naval nuclear propulsion plants, and control of radiation and radioactivity associated with naval nuclear propulsion activities, including prescribing and enforcing standards and regulations for these areas, as they affect the environment and the safety and health of workers, operators, and the general public. Naval Reactors maintains oversight in areas such as security, nuclear safeguards and transportation, radiological controls, public information, procurement, logistics, and fiscal management.

As part of the National Nuclear Security Administration (NNSA), Naval Reactors is working to provide the U.S. Navy with nuclear propulsion plants that are capable of responding to the challenges of the 21st century security environment.

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 fifth Block II VIRGINIA-Class submarine, USS MISSISSIPPI (SSN 782), in June 2012 in Pascagoula, Mississippi.
- USS MINNESOTA (SSN 783), the sixth Block II VIRGINIA-Class submarine, keel laid down in 2011 in Newport News, Virginia, on schedule for delivery in mid-2013.
- USS NORTH DAKOTA (SSN 784), the first Block III VIRGINIA-Class submarine, keel laid down in May 2011 in North Kingstown, Rhode Island.

Naval Reactors is working towards achieving the following key metrics:

FY 2014 Milestones

- Cumulative completion of 99% of the GERALD R. FORD-Class next-generation aircraft carrier reactor plant design.
- Cumulative completion of 22% of the OHIO-Class Ballistic Missile Submarine Replacement (OHIO Replacement) reactor plant design based on actions taken in FY 2012 to support a two year delay to construction start from FY 2019 to FY 2021.

Explanation of Changes

Naval Reactors' request of $1,246M in FY 2014 is for continued achievement of its core objective of ensuring the safe and reliable operation of the Nation's nuclear fleet. The FY 2014 request also includes continued support for three major initiatives: OHIO Replacement, Land-based Prototype (S8G) Refueling Overhaul, and Spent Fuel Handling Recapitalization 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 Program (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.

Naval Reactors' process for reviewing budget estimates was noted for its rigor in a recent United States Government Accountability Office report, *Modernizing the Nuclear Security Enterprise* (GAO-12-806).

Strategic Management

Naval Reactors contributes to the Department's May 2011 Strategic Plan by providing the resources, infrastructure, and expertise necessary to design and develop integrated navy nuclear propulsion systems. Targeted outcomes in the Strategic Plan include:

- Provide the United States Navy with an A1B reactor plant by 2015 for the 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.
- Provide the United States Navy by the end of 2027 with a reactor plant that will extend core lifetime for the next-generation ballistic missile submarine.

Major Out-Year Priorities and Assumptions

Outyear funding levels for Naval Reactors total $6,082,579,000 for FY 2015 through FY 2018. Outyear funding supports Naval Reactors' core mission of providing proper maintenance and safety oversight, and addressing emergent operational issues and technology obsolescence for all 96 operating reactor plants. This includes 72 submarines, 10 aircraft carriers, and 4 research, development, and training platforms (including the land-based prototypes). Outyear funding also supports Naval Reactors' continued achievement of ongoing new plant design projects (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.

Program Goals and Funding

The requested funding in FY 2014 will ensure that Naval Reactors' laboratory operations and technical capabilities meet the requirements of the operational fleet; both in terms of resolving emergent fleet issues and in continuing to improve upon existing fleet technologies. The request also includes an increase to support continued execution of three major projects (i.e., OHIO Replacement, Land-based Prototype Refueling Overhaul, and the Spent Fuel Handling Recapitalization Project), which are needed to deliver national security 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 supports the capability to refuel and defuel aircraft carriers and defuel 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.
- Completion of the refueling overhaul of the land-based prototype by 2021.
- Phased completion of the Spent Fuel Handling Recapitalization Project in 2021 and 2022.

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

The NNSA Naval Reactors appropriation projected contribution to the DOE Working Capital Fund for FY 2014 is $3.7M. This funding covers certain shared, enterprise activities including managing enterprise-wide systems and data, telecommunications and supporting the integrated acquisition environment.

Contractor Pensions

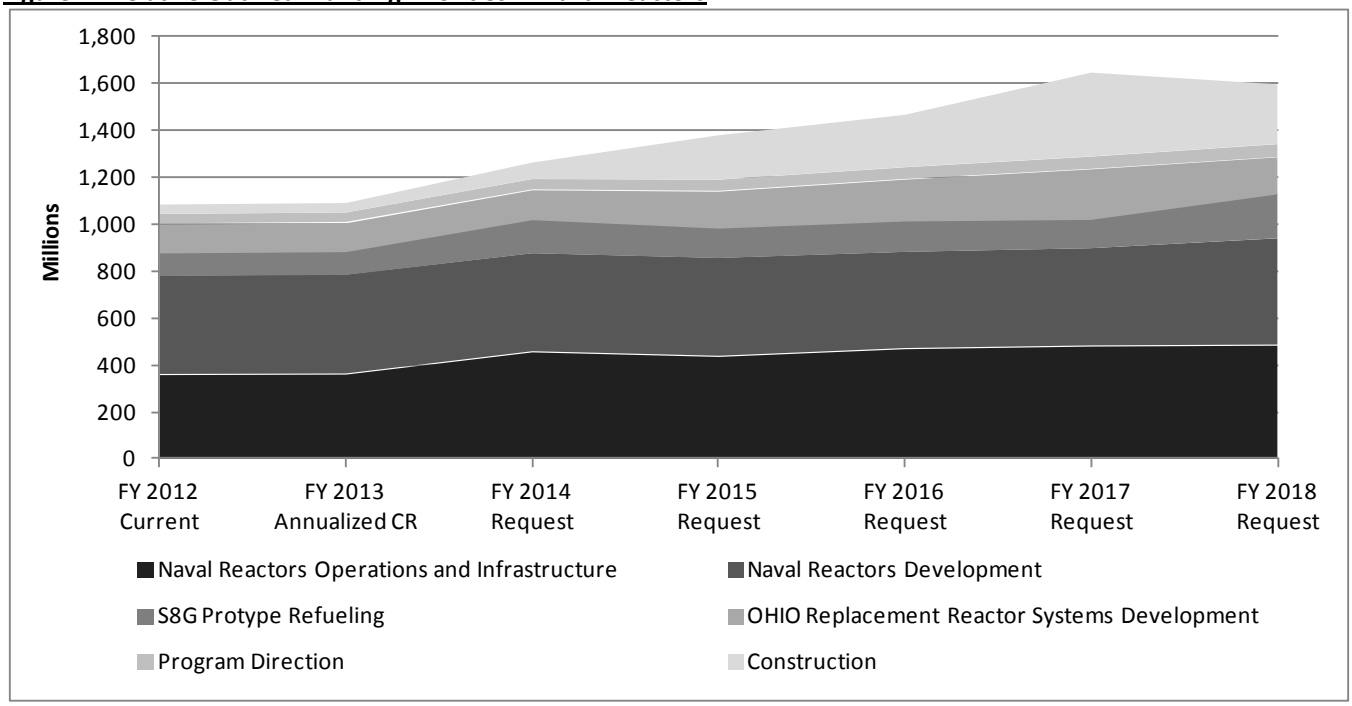
In FY 2014, for the Bettis and Knolls Laboratories, Naval Reactors' planned DOE-funded qualified contractor pension contribution is $61,380,000 and non-qualified contractor pension contribution is $805,000.

Performance Measures

Performance Goal (Measure)	**A1B Reactor Plant Design** - Cumulative percentage of completion on the next-generation aircraft carrier reactor plant design.		
Fiscal Year	**2012**	**2013**	**2014**
Target	96% complete	98% complete	99% complete
Result	**Met** – 96%		
Endpoint Target	By the end of FY 2015, complete 100% of the design of the reactor plant for the next-generation aircraft carrier.		

Performance Goal (Measure)	**S1B Reactor Plant Design** - Cumulative percentage of work complete on the OHIO Replacement submarine reactor plant design.		
Fiscal Year	**2012**	**2013**	**2014**
Target	12% complete	17% complete	22% complete
Result	**Exceeded** – 15.6%		
Endpoint Target	By the end of FY 2027, complete 100% of the OHIO Replacement submarine reactor plant design. Note: In PB13, DoD delayed construction start for the lead ship by two years (from FY 2019 to FY 2021) and reactor plant advanced procurement from FY 2017 to FY 2019. FY 2013 and outyear performance measure targets have been changed to reflect the delayed construction start.		

Figure 1: Relative Out-Year Funding Priorities in Naval Reactors



Explanation of Funding and/or Program Changes

(Dollars in Thousands)

	FY 2012 Current	FY 2014 Request	FY 2014 Request vs. FY 2012 Current
Naval Reactors			
Naval Reactors Operations and Infrastructure	**358,300**	**455,740**	**+97,440**
Increases are primarily driven by facility and infrastructure recapitalization as well as previously deferred capital equipment procurements. Funding levels will support the program's infrastructure over the long-term.			
Naval Reactors Development	**421,000**	**419,400**	**-1,600**
This decrease reflects decreasing requirements for construction support for FORD-class reactor plants and completion of VIRGINIA Forward Fit design.			
S8G Prototype Refueling	**99,500**	**144,400**	**+44,900**
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**	**126,400**	**+5,100**
Reflects an increase to support re-phased efforts for the OHIO Replacement reactor plant design consistent with the change in ship construction start from 2019 to 2021.			
Program Direction	**40,000**	**44,404**	**+4,404**
Reflects an increase commensurate with the higher costs of qualified and experienced engineering personnel.			
Construction	**39,900**	**69,773**	**+29,873**
Reflects an increase in funds for the Spent Fuel Handling Recapitalization Project and the Remote Handled Low-Level Waste Disposal Project. Additionally, FY 2014 includes $0.6M in S8G Prototype Refueling efforts for the KS Radiological Work and Storage Building.			
Subtotal Funding Change, Naval Reactors	1,080,000	1,260,117	+180117
Use of Prior Year Balances	0	-13,983	-13,983
Total Funding Change, Naval Reactors	**1,080,000**	**1,246,134**	**+166,134**

Naval Reactors – Program Direction
Funding by Site

(Dollars in Thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Naval Reactors Program Direction			
Headquarters			
Salaries and Benefits	19,400	20,200	21,358
Travel	975	600	1,000
Other Related Expenses	2,730	1,345	3,000
Total, Headquarters	**23,105**	**22,145**	**25,358**
Full-Time Equivalents	**114**	**111**	**115**
Naval Reactors Laboratory Field Office			
Salaries and Benefits	15,100	17,100	17,146
Travel	683	400	700
Other Related Expenses	1,112	600	1,200
Total, Naval Reactors Laboratory Field Office	**16,895**	**18,100**	**19,046**
Full-Time Equivalents	**117**	**127**	**123**
Total, Naval Reactors Program Direction			
Salaries and Benefits	34,500	37,300	38,504
Travel	1,658	1,000	1,700
Other Related Expenses	3,842	1,945	4,200
Total, Naval Reactors Program Direction	**40,000**	**40,245**	**44,404**
Full-Time Equivalents	**231**	**238**	**238**

Out-Year Program Direction

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
Naval Reactors Program Direction					
Salaries and Benefits	38,504	40,900	42,600	44,400	46,200
Travel	1,700	1,900	1,900	2,000	2,000
Other Related Expenses	4,200	4,600	5,200	5,700	6,500
Total, Naval Reactors Program Direction	**44,404**	**47,400**	**49,700**	**52,100**	**54,700**
Full-Time Equivalents	**238**	**238**	**238**	**238**	**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 on-the-job 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.

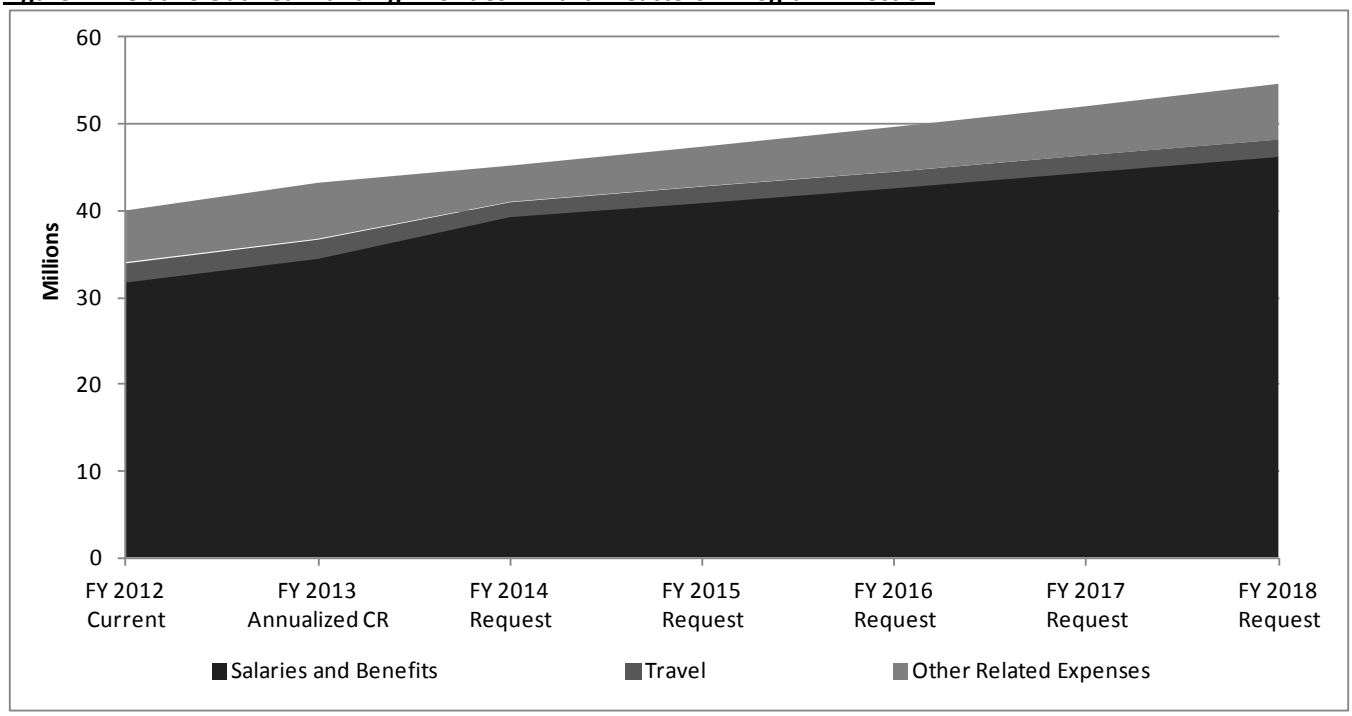
Recently, retirements have resulted in a significant loss of NR's engineering experience. Hirings for experienced and skilled engineers are planned by Naval Reactors to

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.

Figure 1: Relative Out-Year Funding Priorities in Naval Reactors – Program Direction



Explanation of Funding and/or Program Changes

	(Dollars in Thousands)		
	FY 2012 Current	FY 2014 Request	FY 2014 Request vs. FY 2012 Current
Naval Reactors			
Program Direction			
Salaries and Benefits	**34,500**	**38,504**	**+4,004**
Reflects an increase commensurate with the higher costs of qualified and experienced engineering personnel.			
Travel	**1,658**	**1,700**	**+42**
Reflects a steady-state of funding to support mission essential travel.			
Other Related Expenses	**3,842**	**4,200**	**+358**
Reflects an increase of funding to support Government operations.			
Total Funding Change, Naval Reactors Program Direction	**40,000**	**44,404**	**+4,404**

Supporting Information

Capital Operating Expenses

Capital Operating Expenses Summary

(Dollars in Thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
Capital Operating Expenses			
Naval Reactors Operations and Infrastructure	13,521	13,604	21,044
S8G Prototype Refueling	2,600	2,616	6,850
Total, Capital Operating Expenses	**16,121**	**16,220**	**27,894**

Outyear Capital Operating Expenses Summary

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
Capital Operating Expenses					
Naval Reactors Operations and Infrastructure	21,044	17,480	20,500	22,730	24,416
S8G Prototype Refueling	6,850	1,100	3,630	180	790
Total, Capital Operating Expenses	**27,894**	**18,580**	**24,130**	**22,910**	**25,206**

General Plant Projects

General Plant Projects (GPPs) are construction projects that are less than $10M 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. Capital Equipment is non-construction related equipment, computer systems, and tooling, furniture or fixtures having a useful life of two or more years, costing greater than $500,000. The following tables display total GPP funding by site and program-wide capital equipment funding, 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).

(Dollars in Thousands)

	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
General Plant Projects (GPP)			
Bettis Laboratory (BL)	800	805	12,975
Kesselring Site (KS)	987	993	14,845
Knolls Laboratory (KL)	7,171	7,215	4,230
Naval Reactors Facility (NRF)	1,000	1,006	1,950
Total, GPP	**9,958**	**10,019**	**34,000**

(Dollars in Thousands)

	FY 2014 Request	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request
General Plant Projects (GPP)					
Bettis Laboratory	12,975	9,000	6,625	2,000	7,600
Kesselring Site	14,845	8,500	14,890	20,205	19,670
Knolls Laboratory	4,230	6,670	13,790	9,655	7,940
Naval Reactors Facility	1,950	9,130	3,995	3,640	4,890
Total, GPP	**34,000**	**33,300**	**39,300**	**35,500**	**40,100**

Supporting Information

Construction Projects Summary

Construction Projects

(Dollars in Thousands)

	Total	Prior Years	FY 2012 Current	FY 2013 Annualized CR [a]	FY 2014 Request
08-D-190, ECF M-290 Receiving/Discharge Station, NRF [a]					
TEC	92,765	35,295	27,800	27,970	1,700
OPC	4,423	3,248	118	119	260
TPC, 08-D-190, ECF M-290 Receiving/Discharge Station, NRF	**97,188**	**38,543**	**27,918**	**28,089**	**1,960**
10-D-904, NRF Infrastructure Uprades, ID					
TEC	13,199	1,199	12,000	12,073	0
OPC	3,157	197	336	338	807
TPC, 10-D-904, NRF Infrastructure Uprades, ID	**16,356**	**1,396**	**12,336**	**12,411**	**807**
10-D-903, Security Upgrades, KAPL					
TEC	20,999	1,899	100	101	0
OPC	2,972	400	200	201	100
TPC, 10-D-903, Security Upgrades, KAPL	**23,971**	**2,299**	**300**	**302**	**100**
13-D-905, Remote-Handled Low-Level Waste Disposal Project [b]					
TEC	35,493	0	0	0	21,073
OPC	7,970	0	0	0	1,075
TPC, 13-D-905, Remote-Handled Low-Level Waste Disposal Project	**43,463**	**0**	**0**	**0**	**22,148**
13-D-904, KS Radiological Work and Storage Building [c]					
TEC	20,500	0	0	0	600
OPC	1,000	200	0	0	100
TPC, 13-D-904, KS Radiological Work and Storage Building	**21,500**	**200**	**0**	**0**	**700**
13-D-903, KS Prototype Staff Building					
TEC	14,000	0	0	0	0
OPC	1,250	100	300	302	
TPC, 13-D-903, KS Prototype Staff Building	**15,250**	**100**	**300**	**302**	**0**

[a] Funding in FY 2013 is based on a full-year continuing resolution with 301(c) restrictions in effect. As a result, there are funds in excess of requirement for 08-D-190, ECF M-290 Receiving/Discharge Station, NRF, and 10-D-904, NRF Infrastructure Upgrades, ID, and these amounts will be realigned through a reprogramming to support other program work.

[b] The Remote-Handled Low-Level Waste Disposal Project is funded jointly between Naval Reactors and DOE's Office of Nuclear Energy (DOE-NE). The Total Estimated Cost represents the Naval Reactors' contribution. For additional details see the associated Project Data Sheet.

[c] The KS Radiological Work and Storage Building FY 2015 MCP funds ($17.9M) support and are attributable to both the Land-based Prototype Refueling Overhaul ($9.4M) and other site defueling operations ($8.5M).

(Dollars in Thousands)

	Total	Prior Years	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
14-D-901, Spent Fuel Handling Recapitalization Project					
TEC	1,286,500	0	0	0	45,400
OPC	165,000	42,700	25,200	25,354	24,600
TPC, 14-D-901, Spent Fuel Handling Recapitalization Project	**1,451,500**	**42,700**	**25,200**	**25,354**	**70,000**
14-D-902, KL Material Characterization Laboratory					
TEC	17,800	0	0	0	1,000
OPC	4,000	0	200	100	0
TPC, 14-D-902, KL Material Characterization Laboratory	**21,800**	**0**	**200**	**100**	**1,000**
Total All Construction Projects					
Total, TEC	1,479,386	35,393	39,900	40,144	69,773
Total, OPC	189,772	46,845	26,354	26,414	26,942
TPC, All Construction Projects	**1,669,158**	**82,238**	**66,254**	**66,558**	**96,715**

Outyear Construction Projects

(Dollars in Thousands)

	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request	Outyears to Completion
16-D-XXX, KL Support Services Facility					
TEC	0	38,500	0	0	0
OPC	0	0	2,500	0	0
TPC, 16-D-XXX, KL Support Services Facility	**0**	**38,500**	**2,500**	**0**	**0**
15-D-XXX, NRF Overpack Storage Expansion 3					
TEC	400	900	700	13,700	0
OPC	0	0	0	0	150
TPC, 15-D-XXX, NRF Overpack Storage Expansion 3	**400**	**900**	**700**	**13,700**	**150**
15-D-XXX, KL Fire System Upgrade					
TEC	600	600	0	15,000	0
OPC	0	0	0	0	600
TPC, 15-D-XXX, KL Fire System Upgrade	**600**	**600**	**0**	**15,000**	**600**
15-D-XXX, KS Watchstation IDE Facility					
TEC	2,000	1,000	33,300	0	0
OPC	700	1,000	0		
TPC, 15-D-XXX, KS Watchstation IDE Facility	**2,700**	**2,000**	**33,300**	**0**	**0**
15-D-XXX, KS Central Office Building					
TEC	13,000	0	0	0	0
OPC	500	0	0	0	0
TPC, 15-D-XXX, KS Central Office Building	**13,500**	**0**	**0**	**0**	**0**
14-D-902, KL Material Characterization Laboratory					
TEC	0	0	16,800	0	0
OPC	500	0	1,000	2,200	0
TPC, 14-D-902, KL Material Characterization Laboratory	**500**	**0**	**17,800**	**2,200**	**0**
14-D-901, Spent Fuel Handling Recapitalization Project					
TEC	141,100	182,900	308,200	226,700	382,200
OPC	3,900	2,100	1,800	3,300	32,800
TPC, 14-D-901, Spent Fuel Handling Recapitalization Project	**145,000**	**185,000**	**310,000**	**230,000**	**415,000**

(Dollars in Thousands)

	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request	Outyears to Completion
13-D-905, Remote-Handled Low-Level Waste Disposal Project[a]					
TEC	14,420	0	0	0	0
OPC	570	3,640	1,375	0	0
TPC, 13-D-905, Remote-Handled Low-Level Waste Disposal Project	**14,990**	**3,640**	**1,375**	**0**	**0**
13-D-904, KS Radiological Work and Storage Building[b]					
TEC	17,900	0	0	0	0
OPC	100	400	100	0	0
TPC, 13-D-904, KS Radiological Work and Storage Building	**18,000**	**400**	**100**	**0**	**0**
08-D-190, ECF M-290 Receiving/Discharge Station, NRF					
TEC	400	0	0	0	0
OPC	500	0	0	0	0
TPC, 08-D-190, ECF M-290 Receiving/Discharge Station, NRF	**900**	**0**	**0**	**0**	**0**
Total All Construction Projects					
Total, TEC	189,820	223,900	359,000	255,400	382,200
Total, OPC	6,770	7,140	6,775	5,500	33,550
TPC, All Construction Projects	**196,590**	**231,040**	**365,775**	**260,900**	**415,750**

[a] The Remote-Handled Low-Level Waste Disposal Project is funded jointly between Naval Reactors and DOE's Office of Nuclear Energy (DOE-NE). The Total Estimated Cost represents the Naval Reactors' contribution. For additional details see the associated Project Data Sheet.

[b] The KS Radiological Work and Storage Building FY 2015 MCP funds ($17.9M) support and are attributable to both the Land-based Prototype Refueling Overhaul ($9.4M) and other site defueling operations ($8.5M).

Other Supporting Information

Major Items of Equipment (MIEs)

(Dollars in Thousands)

	Total	Prior Years	FY 2012 Current	FY 2013 Annualized CR	FY 2014 Request
High Performance Computers (FY 2012 Buy)					
TEC	11,000	0	11,000	11,067	0
OPC	700	0	700	704	0
TPC, High Performance Computers (FY 2012 Buy)	**11,700**	**0**	**11,700**	**11,771**	**0**
High Performance Computers (FY 2013 Buy)					
TEC	2,000	0	0	0	0
OPC	200	0	0	0	0
TPC, High Performance Computers (FY 2013 Buy)	**2,200**	**0**	**0**	**0**	**0**
High Performance Computers (FY 2014 Buy)					
TEC	11,000	0	0	0	11,000
OPC	700	0	0	0	700
TPC, High Performance Computers (FY 2014 Buy)	**11,700**	**0**	**0**	**0**	**11,700**
KAPL Network Upgrade					
TEC	4,200	3,000	1,200	1,207	0
OPC	0	0	0	0	0
TPC, KAPL Network Upgrade	**4,200**	**3,000**	**1,200**	**1,207**	**0**
Bettis Network Upgrade					
TEC	3,000	2,000	1,000	1,006	0
OPC	0	0	0	0	0
TPC, Bettis Network Upgrade	**3,000**	**2,000**	**1,000**	**1,006**	**0**
Land-based Prototype Rod Control Equipment					
TEC	10,500	0	1,300	1,308	3,700
OPC	9,876	0	467	470	4,448
TPC, Land-based Prototype Rod Control Equipment	**20,376**	**0**	**1,767**	**1,778**	**8,148**
Land-based Prototype Instrumentation and Control					
TEC	17,900	1,500	1,300	1,308	3,150
OPC	25,846	671	467	470	3,786
TPC, Land-based Prototype Instrumentation and Control	**43,746**	**2,171**	**1,767**	**1,778**	**6,936**
Total All MIEs					
Total, TEC	59,600	6,500	15,800	15,896	17,850
Total, OPC	37,322	671	1,634	1,644	8,934
TPC, All MIEs	**96,922**	**7,171**	**17,434**	**17,540**	**26,784**

Outyear Major Items of Equipment (MIEs)

(Dollars in Thousands)

	FY 2015 Request	FY 2016 Request	FY 2017 Request	FY 2018 Request	Outyears to Completion
Land-based Prototype Rod Control Equipment					
TEC	0	1,800	0	0	0
OPC	0	3,119	0	0	0
TPC, Land-based Prototype Rod Control Equipment	**0**	**4,919**	**0**	**0**	**0**
Land-based Prototype Instrumentation and Control					
TEC	1,100	1,830	180	790	0
OPC	6,109	3,171	4,362	1,840	1,431
TPC, Land-based Prototype Instrumentation and Control	**7,209**	**5,001**	**4,542**	**2,630**	**1,431**
High Performance Computers (FY 2015 Buy)					
TEC	11,000	0	0	0	0
OPC	700	0	0	0	0
TPC, High Performance Computers (FY 2015 Buy)	**11,700**	**0**	**0**	**0**	**0**
Laboratory Network Upgrade					
TEC	1,000	2,000	2,000	2,000	0
OPC	0	0	0	0	0
TPC, Laboratory Network Upgrade	**1,000**	**2,000**	**2,000**	**2,000**	**0**
High Performance Computers (FY 2016 Buy)					
TEC	0	11,000	0	0	0
OPC	0	700	0	0	0
TPC, High Performance Computers (FY 2016 Buy)	**0**	**11,700**	**0**	**0**	**0**
High Performance Computers (FY 2017 Buy)					
TEC	0	0	11,000	0	0
OPC	0	0	700	0	0
TPC, High Performance Computers (FY 2017 Buy)	**0**	**0**	**11,700**	**0**	**0**
High Performance Computers (FY 2018 Buy)					
TEC	0	0	0	11,000	0
OPC	0	0	0	700	0
TPC, High Performance Computers (FY 2018 Buy)	**0**	**0**	**0**	**11,700**	**0**
Total All MIEs					
Total, TEC	13,100	16,630	13,180	13,790	0
Total, OPC	6,809	6,990	5,062	2,540	1,431
TPC, All MIEs	**19,909**	**23,620**	**18,242**	**16,330**	**1,431**

14-D-902, KL Material Characterization Laboratory
Knolls Atomic Power Laboratory, Schenectady, NY
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, Mission Need, which was approved on October 3, 2011 with a preliminary cost range of $17,800K to $21,800K and a CD-4 of FY 2020.

A Federal Project Manager has been assigned to this project.

This PDS includes a new start for the budget year.

2. Design, Construction, and D&D Schedule [a]

(Fiscal Quarter or Date)

	CD-0	CD-1	Design Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2014	10/3/2011	3Q FY2013	3Q FY2016	1Q FY2015	3Q FY2016	1Q FY2020	N/A	N/A

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

3. Baseline and Validation Status [b]

(Dollars in Thousands)

	TEC, Design	TEC, Construction	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
FY 2014	1,000	16,800	17,800	4,000	N/A	4,000	21,800

4. Project Description, Justification, and Scope

Mission Need

The current Material Characterization Laboratory (MCL) shares non-contiguous space with the Physical Chemistry unit on the 1st and 2nd floors of building A3 at the Knolls site. The current MCL has no central HVAC, which creates temperature swings that affect the sensitivity and, ultimately, requires substantial effort to correct data. Vibrations from the infrastructure and high impact test equipment interfere with the operation of sensitive equipment. There is not enough office space for the current MCL personnel. The size and layout of the current facility cannot accommodate emergent work if the work requires additional test equipment. Additionally, radiological, chemical, and asbestos issues complicate and delay completion of simple building maintenance.

[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

Still in conceptual design, NR is considering alternative options for construction of a new MCL. Currently, NR is evaluating the combination of the MCL project and the Site Support Facility major construction project in FY 2016. The new MCL will: 1) provide roughly 18,000 gross square feet of laboratory and office space, 2) provide adequate floor space to house equipment, 3) eliminate the radiological and chemical legacy concerns during maintenance, 4) provide a specialized HVAC system designed for controlling airflow and room temperatures in specific areas, and 5) separate sensitive analytical equipment from vibration-producing equipment.

The project is being conducted in accordance with the NR Implementation Bulletin for DOE O 413.3B 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)			
Design			
FY 2014	1,000	1,000	100
FY 2015	0	0	800
FY 2016	0	0	100
Total, Design	1,000	1,000	1,000
Construction			
FY 2017	16,800	16,800	6,400
FY 2018	0	0	8,400
FY 2019	0	0	2,000
Total, Construction	16,800	16,800	16,800
TEC			
FY 2014	1,000	1,000	1,000
FY 2015	0	0	0
FY 2016	0	0	0
FY 2017	16,800	16,800	6,400
FY 2018	0	0	8,400
FY 2019	0	0	2,000
Total, TEC	17,800	17,800	17,800
Other Project Cost (OPC)			
OPC except D&D			
FY 2012	200	200	200
FY 2013	100	100	100
FY 2014	0	0	0
FY 2015	500	500	500
FY 2016	0	0	0
FY 2017	1,000	1,000	800
FY 2018	2,200	2,200	1,200
FY 2019	0	0	600
FY 2020	0	0	600
Total, OPC except D&D	4,000	4,000	4,000
D&D	N/A	N/A	N/A
Total, D&D	N/A	N/A	N/A

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

	(Dollars in Thousands)		
	Appropriations	Obligations	Costs
OPC			
FY 2012	200	200	200
FY 2013	100	100	100
FY 2014	0	0	0
FY 2015	500	500	500
FY 2016	0	0	0
FY 2017	1,000	1,000	800
FY 2018	2,200	2,200	1,200
FY 2019	0	0	600
FY 2020	0	0	600
Total, OPC	4,000	4,000	4,000
Total Project Cost (TPC)			
FY 2012	200	200	200
FY 2013	100	100	100
FY 2014	1,000	1,000	1,000
FY 2015	500	500	500
FY 2016	0	0	0
FY 2017	17,800	17,800	7,200
FY 2018	2,200	2,200	9,600
FY 2019	0	0	2,600
FY 2020	0	0	600
Total, TPC	21,800	21,800	21,800

6. Details of Project Cost Estimate [a]

(Dollars in Thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	900	N/A	N/A
Contingency	100	N/A	N/A
Total, Design	1,000	N/A	N/A
Construction			
Site Preparation	1,000	N/A	N/A
Equipment	0	N/A	N/A
Other Construction	14,800	N/A	N/A
Contingency	1,000	N/A	N/A
Total, Construction	16,800	N/A	N/A
Total, TEC	17,800	N/A	N/A
Contingency, TEC	1,100	N/A	N/A
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	0	N/A	N/A
Conceptual Design	300	N/A	N/A
Site Characterization	700	N/A	N/A
Start-up	2,000	N/A	N/A
Contingency	1,000	N/A	N/A
Total, OPC except D&D	4,000	N/A	N/A
D&D	0	N/A	N/A
Total, D&D	0	N/A	N/A
Total, OPC	4,000	N/A	N/A
Contingency, OPC	1,000	N/A	N/A
Total, TPC	21,800	N/A	N/A
Total, Contingency	2,100	N/A	N/A

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

7. Schedule of Appropriation Requests

(Dollars in Thousands)

		Prior Years	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	Outyears	Total
FY 2014 Baseline	TEC	0	0	1,000	0	0	16,800	0	0	17,800
	OPC	200	100	0	500	0	2,000	1,200	0	4,000
	TPC	200	100	1,000	500	0	18,800	1,200	0	21,800

8. Related Operations and Maintenance Funding Requirements

Not applicable.

9. Required D&D Information

Not applicable.

10. Acquisition Approach

Not applicable.

14-D-901, Spent Fuel Handling Recapitalization Project
Naval Reactors Facility, Idaho
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-0, Mission Need, which was approved on March 29, 2008 with a preliminary cost range of $748,000K to $1,057,000K in FY 2009 dollars and a CD-4 of FY 2020 [a].

A Federal Project Manager has been assigned to this project.

This PDS does include a new start for the budget year.

2. Design, Construction, and D&D Schedule [b]

(Fiscal Quarter or Date)

	CD-0	CD-1	Design Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2014	3/29/2008	1Q FY2014	4Q FY2016	3Q FY2015	4Q FY2016	4Q FY2022	N/A	N/A

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

3. Baseline and Validation Status [c]

(Dollars in Thousands)

	TEC, Design	TEC, Construction	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
FY 2014	369,400	917,100	1,286,500	165,000	N/A	165,000	1,451,500

4. Project Description, Justification, and Scope

Mission Need

Although the current Expended Core Facility (ECF) continues to be maintained and operated in a safe and environmentally responsible manner, the existing infrastructure and equipment are over 50 years old, do not meet current standards, and require recapitalization. ECF is also incapable of receiving full-length carrier fuel, which is required to support upcoming CVN refueling. The magnitude of required sustainment efforts and incremental infrastructure upgrades pose substantial risk to the continued processing of spent fuel for long term storage. An interruption of refueling and defueling schedules for nuclear-powered vessels, as required by existing maintenance schedules, would adversely affect the operational availability of the nuclear fleet. If this interruption were to extend over long periods, the ability to sustain fleet operations would be impacted, resulting ultimately in a significant decrement to the Navy's responsiveness and agility to fulfull military missions worldwide.

[a] The CD-0 preliminary cost range has been updated based on availability of funding in FY 2012 and FY 2013. The updated preliminary cost range is $1,290,000 to $1,460,000 (Then Year dollars) and a CD-4 of FY 2022.
[b] Schedules are only estimates and consistent with the high end of the schedule ranges.
[c] Figures are only estimates and consistent with the high end of the cost ranges.

Scope and Justification

The mission of Naval Reactors (NR) is to provide the Nation with militarily effective nuclear propulsion plants and to ensure their safe, reliable, long-lived, and affordable operation. NR maintains total responsibility for all aspects of the U.S. Navy's nuclear propulsion systems, including research, design, construction, testing, operation, maintenance, and disposal. At the end of reactor service life, NR transports spent nuclear fuel from its origin (e.g., naval spent nuclear fuel from servicing shipyards and naval training platforms) to the Naval Reactors Facility (NRF) at the Idaho National Laboratory (INL).

Located at NRF, the ECF provides the infrastructure to unload shipping containers and transfer, prepare, temporarily store, and package naval spent nuclear fuel for disposal. The ECF capabilities are vital to the NNPP's mission of maintaining reliable operation of the naval nuclear fleet, developing militarily effective nuclear propulsion plants, and fulfilling cradle-to-grave responsibilities. The facility has operated safely and reliably throughout its history.

The long-term demand on the ECF infrastructure requires continuous operation. While maintenance and repair programs are in place to address the current vulnerabilities associated with the aging infrastructure, repair and refurbishment actions that would be required to sustain long-term operations are substantial. The urgency of these actions will increase over time as the infrastructure continues to age. Failure to implement these repairs and refurbishments in advance of infrastructure deterioration will impact the ability of the ECF to operate, perhaps for a period of years. Further, the repair and refurbishment actions themselves will interrupt operations for extended periods. Any long-term strategy other than recapitalizing the existing infrastructure will result in mission-compromising interruptions that could impact national security.

The following represents the general scope of the Spent Fuel Handling Recapitalization Project:

- A facility and facility systems for naval spent nuclear fuel handling.
- Infrastructure needed to support naval spent nuclear fuel handling operations.
- Develop testing, operating, and preventative maintenance procedures and drawings, as needed, for the naval spent fuel handling process systems, equipment, facilities, and facility systems.
- Personnel training and development of training programs, where appropriate.
- Project management.
- Support services needed for the project.
- Management for sub-contacts supporting the design and construction.
- National Environmental Policy Act (NEPA) compliance.

The existing Expended Core Facility (ECF) at the Naval Reactors Facility in Idaho is a single facility which is approximately 197,000 square feet. However, other facilities at the Naval Reactors Facility support operations within the ECF and include additional areas for administrative support and warehouse storage. ECF has the two major capabilities: (1) to receive, unload, prepare, and package naval spent nuclear fuel and, (2) to conduct naval spent nuclear fuel examinations. Both capabilities currently exist within the ECF, which is over 50 years old, does not meet current standards, and requires recapitalization.

Actions necessary to continue Naval Reactors' ability to support naval spent nuclear fuel handling are the subject of an Environmental Impact Statement (EIS). The EIS for recapitalization of the infrastructure supporting naval spent nuclear fuel will include an assessment of the environmental impacts associated with handling of naval spent nuclear fuel. The EIS is currently under development and is expected to be issued for comment in FY 2014. The EIS will evaluate the following alternatives:

(1) No Action Alternative – Maintain the spent fuel handling capabilities of the ECF by continuing to use the current ECF infrastructure while performing corrective maintenance.
(2) Overhaul Alternative – Recapitalize the spent fuel handling capabilities of ECF by overhauling ECF with major refurbishment projects for the ECF infrastructure and water pools.
(3) New Facility Alternative, including the Spent Fuel Handling Recapitalization Project – Recapitalize the spent fuel handling capabilities of ECF by constructing and operating a new facility at one of two potential locations at the Naval Reactors Facility.

The existing ECF is required to maintain the examination capability for the foreseeable future; therefore, no D&D is planned at this time. Separate NEPA action will be taken to address these future actions, if necessary.
The Spent Fuel Handling Recapitalization Project is in the conceptual design phase; therefore, the facility design is subject to change until plans are final. Currently, the Spent Fuel Handling Recapitalization Project facility is conservatively estimated to have a footprint of approximately 254,000 square feet. This new facility will incorporate the capabilities for spent fuel handling that currently exist in the ECF and its support facilities. Additionally, a major portion of this new facility is required to support additional capability, which does not exist in ECF, to handle full length aircraft carrier spent nuclear fuel received in new M-290 shipping containers.

The project is being conducted in accordance with the NR Implementation Bulletin for DOE O 413.3 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 [b]
Total Estimated Cost (TEC)			
Design			
FY 2014	45,400	45,400	45,400
FY 2015	141,100	141,100	141,100
FY 2016	182,900	182,900	182,900
Total, Design	369,400	369,400	369,400
Construction			
FY 2017	308,200	308,200	308,200
FY 2018	226,700	226,700	226,700
FY 2019	134,900	134,900	134,900
FY 2020	132,300	132,300	132,300
FY 2021	64,300	64,300	64,300
FY 2022	50,700	50,700	50,700
Total, Construction	917,100	917,100	917,100
TEC			
FY 2014	45,400	45,400	45,400
FY 2015	141,100	141,100	141,100
FY 2016	182,900	182,900	182,900
FY 2017	308,200	308,200	308,200
FY 2018	226,700	226,700	226,700
FY 2019	134,900	134,900	134,900
FY 2020	132,300	132,300	132,300
FY 2021	64,300	64,300	64,300
FY 2022	50,700	50,700	50,700
Total, TEC	1,286,500	1,286,500	1,286,500
Other Project Cost (OPC)			
OPC except D&D			
FY 2010	6,600	6,600	6,600
FY 2011	36,100	36,100	36,100
FY 2012	25,200	25,200	25,200
FY 2013	28,600	28,600	28,600
FY 2014	24,600	24,600	24,600
FY 2015	3,900	3,900	3,900
FY 2016	2,100	2,100	2,100
FY 2017	1,800	1,800	1,800
FY 2018	3,300	3,300	3,300
FY 2019	5,100	5,100	5,100
FY 2020	7,700	7,700	7,700
FY 2021	10,700	10,700	10,700
FY 2022	9,300	9,300	9,300
Total, OPC except D&D	165,000	165,000	165,000

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

[b] Due to re-profiling of the project, the cost profile represents a preliminary estimate.

	(Dollars in Thousands)		
	Appropriations	Obligations	Costs
D&D	N/A	N/A	N/A
Total, D&D	N/A	N/A	N/A
OPC			
FY 2010	6,600	6,600	6,600
FY 2011	36,100	36,100	36,100
FY 2012	25,200	25,200	25,200
FY 2013	28,600	28,600	28,600
FY 2014	24,600	24,600	24,600
FY 2015	3,900	3,900	3,900
FY 2016	2,100	2,100	2,100
FY 2017	1,800	1,800	1,800
FY 2018	3,300	3,300	3,300
FY 2019	5,100	5,100	5,100
FY 2020	7,700	7,700	7,700
FY 2021	10,700	10,700	10,700
FY 2022	9,300	9,300	9,300
Total, OPC except D&D	165,000	165,000	165,000
Total Project Cost (TPC)			
FY 2010	6,600	6,600	6,600
FY 2011	36,100	36,100	36,100
FY 2012	25,200	25,200	25,200
FY 2013	28,600	28,600	28,600
FY 2014	70,000	70,000	70,000
FY 2015	145,000	145,000	145,000
FY 2016	185,000	185,000	185,000
FY 2017	310,000	310,000	310,000
FY 2018	230,000	230,000	230,000
FY 2019	140,000	140,000	140,000
FY 2020	140,000	140,000	140,000
FY 2021	75,000	75,000	75,000
FY 2022	60,000	60,000	60,000
Total, TPC	1,451,500	1,451,500	1,451,500

6. Details of Project Cost Estimate [a]

(Dollars in Thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	369,400	N/A	N/A
Contingency	0 [b]	N/A	N/A
Total, Design	369,400	N/A	N/A
Construction			
Site Preparation	0	N/A	N/A
Equipment	0	N/A	N/A
Other Construction	917,100	N/A	N/A
Contingency	0 [b]	N/A	N/A
Total, Construction	917,100	N/A	N/A
Total, TEC	1,286,500	N/A	N/A
Contingency, TEC	0 [b]	N/A	N/A
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	42,700	N/A	N/A
Conceptual Design	66,100	N/A	N/A
Start-up	56,200	N/A	N/A
Contingency	0 [b]	N/A	N/A
Total, OPC except D&D	165,000	N/A	N/A
D&D	0	N/A	N/A
Total, D&D	0	N/A	N/A
Total, OPC	165,000	N/A	N/A
Contingency, OPC	0 [b]	N/A	N/A
Total, TPC	1,451,500	N/A	N/A
Total, Contingency	0 [b]	N/A	N/A

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

[b] Management reserve is included in the total design and construction figures.

7. Schedule of Appropriation Requests

(Dollars in Thousands)

		Prior Years	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	Outyears	Total
FY 2014	TEC	0	0	45,400	141,100	182,900	308,200	226,700	382,200	1,286,500
	OPC	67,900	28,600	24,600	3,900	2,100	1,800	3,300	32,800	165,000
	TPC	67,900	28,600	70,000	145,000	185,000	310,000	230,000	415,000	1,451,500

8. Related Operations and Maintenance Funding Requirements

Not applicable.

9. Required D&D Information

Not applicable.

10. Acquisition Approach

Not applicable.

13-D-905, Remote-Handled Low-Level Waste Disposal Project
Idaho National Laboratory
Project Data Sheet is for Design and Construction

1. Summary and Significant Changes

The most recent DOE O 413.3-B approved Critical Decision (CD) is CD-1, Approve Alternative Selection and Cost Range, that was approved on July 13, 2011 with a Total Project Cost of $95,000k based on the upper end of the range. CD-2, Approve Performance Baseline, and CD-3, Approve Start of Construction, is anticipated to be approved in the 2nd Quarter of FY 2014 in compliance with the DOE O 413.3B. The project data sheet (PDS) will be updated to reflect the performance baseline upon approval of CD-2. This is a non-major acquisition project with a cost range less than $100M. Based on the conceptual design and estimate, the lower and upper bound of the cost range is between $75,000k and $95,000k 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 a new start in FY 2014 Request for Design and Construction. The FY 2013 Request included $8.89 million to initiate the Remote-Handled Low Level Waste Disposal project; however, pursuant to Section 102(a), P.L. 112-175, Continuing Appropriations Resolution, 2013, new construction projects are not authorized while operating under the Continuing Resolution. If the final FY 2013 Appropriation provides authority and funding for the project, the Department will submit a revised PDS.

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 hold points established by DOE-Idaho (DOE-ID) to verify readiness prior to actual Start of Construction. The funding figures presented in Sections 5 and 6 represent the upper end of the cost range. The funding figures will be updated to reflect the performance baseline point estimate upon approval of CD-2.

2. Design, Construction, and D&D Schedule

(Fiscal Quarter or Date)

	CD-0	CD-1	CD-2/3 [a]	CD-4 [a b]	D&D [a b] Start	D&D [a b] Complete
FY 2013	07/01/2009	07/13/2011	1Q FY 2013	4Q FY 2017	4Q FY 2037	4Q FY 2038
FY 2014	07/01/2009	07/13/2011	2Q FY 2014	4Q FY 2017	4Q FY 2058[c]	4Q FY 2059 [c]

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

[a] The Critical Decision (CDs) dates for CD-2/3, CD-4 and D&D are estimates and consistent with the high end of the schedule range.
[b] Dates are based on plans for facility closure and emplacement of a cap at the existing RH LLW Disposal Facility located at the Radioactive Waste Management Complex by the Office of Environmental Management (EM) and the costs are not part of the project.
[c] Date change based on Section 102(a) P.L. 112-175, Continuing Appropriations Resolution, 2013, and design for a 50 year life-expectancy. Funding requested will provide up to 20 years of disposal capacity and infrastructure with a life expectancy of 50 years to allow for expansion.

3. Baseline and Validation Status

(Dollars in Thousands)

	TEC [a], Design	TEC [a], Construction	TEC, Total [a]	OPC Except D&D [a]	OPC, D&D [a c]	OPC, Total [a]	TPC [a]
FY 2013 [b]	3,820	63,440	67,260	27,740	0	27,740	95,000
FY 2014 [b]	3,820	63,440	67,260	27,740	0	27,740	95,000

4. Project Description, Justification, and Scope

Mission Need

The continuing mission of the Idaho National Laboratory (INL), associated ongoing and planned operations, and Naval spent fuel activities at the Naval Reactors Facility (NRF) requires continued capability to appropriately dispose of remote-handled low level waste (LLW) in support of Office of Nuclear Energy and Office of Naval Reactors mission-critical operations. The new facility can accommodate disposal of up to twenty years of remote-handled LLW generated at the INL, and provide capability for further expansion.

Scope and Justification

Scope

The project will provide on-site disposal capability for ten to twenty years of remote-handled LLW generated at the Idaho National Laboratory (INL); however, facilities are being designed to allow operation for 50 years to support future expansion, if needed. Replacement capability must be available when the current waste disposal site, which has been in operation since 1952, becomes unavailable for expansion with the closure of the Radioactive Waste Management Complex (RWMC). The subsurface vaults are envisioned to be constructed of precast concrete cylinders (pipe sections) stacked on end and placed in a honeycomb-type array. Based on waste projections, for a 20 year period, approximately 900 canisters of waste will be disposed of at the facility. The facility is projected to be a Hazard Category 2 nuclear facility, subject to the requirements of DOE-STD-1189, "Integration of Safety into the Design Process." The disposal facility will be located on a suitable site within the INL boundary. Performance of the site/facility will be analyzed in accordance with requirements of DOE Order 435.1, "Radioactive Waste Management."

Supporting infrastructure to the new facility will include a paved access road; electrical service; firewater and potable water; security fence and systems; a maintenance building; administration building; communications and emergency systems; and other operational capabilities. Transportation and handling equipment systems also will be developed for onsite shipments of activated metals and debris waste from the Advanced Test Reactor Complex and the Material and Fuels Complex.

Justification

As DOE's lead nuclear energy laboratory, INL is a multipurpose national laboratory delivering specialized science and engineering global solutions for the DOE. INL also hosts the National Nuclear Security Administration's (NNSA) Naval Reactors Facility (NRF). NRF supports the U.S. Navy's nuclear-powered fleet through research and development of materials and equipment and management of naval spent nuclear fuel. In addition to the nuclear energy mission, Environmental Management (EM) is supporting a large-scale cleanup mission at the INL. These activities include closure of the RWMC under CERCLA (42 USC 9601 et seq. 1980). Remote-handled LLW generated by INL and NRF has been disposed of at RWMC since 1952. EM has notified NE and NR that disposal at RWMC should not be assumed beyond September 30, 2017.

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[a] A design-build acquisition strategy is being implemented.

[b] The baseline has been set at the high-end of the TPC range; the project baseline will be approved upon approval of CD-2. No construction will be performed until the project performance baseline has been validated and CD-3 conditions have been addressed and approved by the Acquisition Executive.

[c] D&D of the existing RH LLW Disposal Facility located at RWMC is part of the Waste Area Group-7 CERCLA cleanup activity being performed by the Office of Environmental Management in response to the Idaho Settlement Agreement.
The continuing nuclear energy mission of INL and NRF require continued capability to dispose of remote-handled LLW. Without established, viable remote-handled LLW disposal capability, ongoing and future operations at the INL and NRF would be adversely impacted. In addition to impacting INL operations at the Advanced Test Reactor and Material and Fuels Complex, remote-handled LLW disposal capability also is critical to the NNSA's mission to "provide the United States Navy with safe, militarily effective nuclear propulsion plants and to ensure the safe and reliable operation of those plants." Spent nuclear fuel from the Navy's nuclear-powered fleet is sent to NRF for examination, processing, dry storage, and ultimate disposition. A reliable disposal path for remote-handled LLW is essential to NRF's continued receipt and processing of naval spent nuclear fuel and, therefore, national security. Based on an evaluation of on-site and off-site alternatives and completion of an Environmental Assessment in accordance with the National Environmental Policy Act [NEPA], the highest-ranked alternative for providing continued, uninterrupted remote-handled LLW disposal capability is construction of a new onsite remote-handled LLW disposal facility. The life cycle cost to construct and operate a new onsite facility and the risk to the public have been determined to be significantly lower than the offsite disposal alternatives evaluated.

Project Status
On July 13, 2011, the Office of Nuclear Energy approved Critical Decision-1, selecting development of a new facility for disposal of remote-handled LLW generated at the Idaho site as the preferred alternative to meet the mission need. In accordance with NEPA (42 USC§ 4321 et seq.), a thorough analysis of a range of reasonable alternatives was subsequently performed and, after evaluating the results of the analysis, the DOE Idaho Operations Office Manager issued a Finding of No Significant Impact on December 21, 2011. A preliminary Disposal Authorization Statement, based on the Low-Level Waste Disposal Facility Federal Review Group's review of the facility's current Performance Assessment and related documentation, was received on April 2, 2012. A competitive procurement process was initiated to select a design-build contractor, and will be completed pending the approval of congressional appropriations in FY 2014.

Risks
A detailed evaluation of project risks and mitigations has been performed (INL PLN-2541). Contingency and management reserve adequate to address project risks has been identified and will be managed in accordance with the requirements of DOE O413.3b. 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 related to project planning and execution.

5. Financial Schedule [a]

(Dollars in Thousands) (Total Project Cost @ Upper Bound [c])

	Appropriations [b]			Obligations			Costs
	NE	NR	Total	NE	NR	Total	
Total Estimated Cost (TEC)							
Design [c]							
FY 2013	0	0	0	0	0	0	0
FY 2014	47	1,463	1,510	47	1,463	1,510	700
FY 2015	940	1,370	2,310	940	1,370	2,310	1,510
FY 2016	0	0	0	0	0	0	1,610
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	0	0	0	0	0	0	0
FY 2014	16,351	19,610	35,961	16,351	19,610	35,961	20,870
FY 2015	8,559	13,050	21,609	8,559	13,050	21,609	28,170
FY 2016	5,870	0	5,870	5,870	0	5,870	14,400
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	0	0	0	0	0	0	0
FY 2014	16,398	21,073	37,471	16,398	21,073	37,471	21,570
FY 2015	9,499	14,420	23,919	9,499	14,420	23,919	29,680
FY 2016	5,870	0	5,870	5,870	0	5,870	16,010
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**
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	1,600
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

(Dollars in Thousands) (Total Project Cost @ Upper Bound [c])

	Appropriations			Obligations			Costs
	NE	NR	Total	NE	NR	Total	
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	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	1,600
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	**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	430	1,310	1,740	430	1,310	1,740	1,740
FY 2014	16,813	22,148	38,961	16,813	22,148	38,961	23,060
FY 2015	10,529	14,990	25,519	10,529	14,990	25,519	31,280
FY 2016	10,040	3,640	13,680	10,040	3,640	13,680	23,820
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**

[a] Budget figures shown are only estimates and based on the high end of the cost range.

[b] The FY 2013 Annualized Continuing Resolution NR TEC amount is $0; however, $8,890,000 was originally requested for FY 2013. The FY 2013 annualized Continuing Resolution NE TEC amount is $0; however, $6,280,000 was originally requested for FY 2013.

[c] Design costs are part of the design-build contract, which is funded with construction funds.

6. Details of Project Cost Estimate [a]

(Dollars in Thousands)

	CD-1 Upper Bound Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	3,220	3,220	N/A
Contingency	600	600	N/A
Total, Design	3,820	3,820	N/A
Construction			
Site Preparation	N/A	N/A	N/A
Equipment	10,000	10,000	N/A
Construction	51,520	51,520	N/A
Contingency	1,920	1,920	N/A
Total, Construction	63,440	63,440	N/A
Total, TEC	67,260	67,260	N/A
Contingency, TEC	2,520	2,520	N/A
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	8,030	8,030	N/A
Conceptual Design	3,240	3,240	N/A
Other OPC Costs	8,490	8,490	N/A
Start-Up	3,430	3,430	N/A
Contingency	4,550	4,550	N/A
Total, OPC except D&D	27,740	27,740	N/A
D&D			
D&D	0	0	N/A
Contingency	0	0	N/A
Total, D&D	0	0	N/A
Total, OPC	27,740	27,740	N/A
Contingency, OPC	4,550	4,550	N/A
Total, TPC	95,000	95,000	N/A
Total, Contingency	7,070	7,070	N/A

[a] CD-2 approval is expected during the 2Q FY 2014. All funding numbers are only estimates and based on the high end of the cost range approved at CD-1.

7. Schedule of Appropriation Requests

(Dollars in Thousands)

Request		Prior Years	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	Outyears	Total
FY 2013 (Initial Request)	TEC	0	15,170	39,490	12,600	0	0			67,260
	OPC	11,990	1,740	1,490	1,600	7,810	3,110			27,740
	TPC	11,990	16,910	40,980	14,200	7,810	3,110	0	0	95,000
FY 2014 [a]	TEC	0	0	37,471	23,919	5,870	0			67,260
	OPC	11,990	1,740	1,490	1,600	7,810	3,110			27,740
	TPC	11,990	1,740	38,961	25,519	13,680	3,110	0	0	95,000

8. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (Fiscal Quarter or Date)	3Q FY 2018
Expected Useful Life [a] (Number of Years)	50 years
Expected Future Start of D&D of this capital asset (Fiscal Quarter)	3Q FY 2058

(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	N/A	$102,600	N/A
Maintenance	$490	N/A	$9,800	N/A
Total, Operations & Maintenance	$5,620	N/A	$112,400	N/A

[a] CD-2 approval is expected during the 2Q FY 2014. All funding numbers are only estimates and based on the high end of the cost range approved at CD-1.

[b] Facility is designed for a 50 year life-expectancy. Funding requested will provide up to 20 years of disposal capacity and infrastructure with a life expectancy of 50 years to allow for expansion.

9. Required D&D Information

Area	Acres
Area of new construction	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:

- The existing Remote-handled LLW disposal vaults are located within the Subsurface Disposal Area of the Radioactive Waste Management Complex. The RWMC, including the existing remote-handled LLW disposal vaults is funded by DOE EM as part of CERCLA remediation of Waste Area Group 7, Operable Unit 13/14 and is not included in this PDS.

10. Acquisition Approach

The INL Management and Oversight (M&O) 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 siting study and an environmental assessment; preparation and support to DOE Headquarters approval of a performance assessment and composite analysis; preparation of disposal facility waste acceptance criteria; preparation of nuclear safety documentation; preparation of requests for proposal and performance specifications; subcontractor selection and contract administration; facility design and construction management; and, operational readiness activities.

13-D-904, KS Radiological Work and Storage Building
Kesselring Site, West Milton, NY
Project Data Sheet (PDS) is for Design and Construction

1. Significant Changes

The most recent DOE O 413.3B approved Critical Decision (CD) is CD-1, Approve Alternative Selection and Cost Range, which was approved on June 8, 2012 with a preliminary cost range of $20,500K to $21,500K and a CD-4 of FY 2017.

A Federal Project Manager has been assigned to this project.

This PDS is a new start for the budget year.

The FY 2013 Request included $2,000K in design funding in FY 2013 to initiate the project; however, pursuant to Section 102(a), P.L. 112-175, Continuing Appropriations Resolution, 2013, new construction projects are not authorized while operating under the Continuing Resolution.

2. Design, Construction, and D&D Schedule [a]

(Fiscal Quarter or Date)

	CD-0	CD-1	Design Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2013	4/19/2011	2Q FY2012	3Q FY2014	3Q FY2013	3Q FY2014	4Q FY2016	3Q FY2012	3Q FY2013
FY 2014	4/19/2011	6/08/2012	2Q FY2015	2Q FY2014	3Q FY2014	3Q FY2017	3Q FY2012	3Q FY2013

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

3. Baseline and Validation Status [b]

(Dollars in Thousands)

	TEC, Design	TEC, Construction	TEC, Total	OPC, Except D&D	OPC, D&D	OPC, Total	TPC
FY 2013	2,600	17,900	20,500	725	N/A	725	21,225
FY 2014	2,600	17,900	20,500	1,000	N/A	1,000	21,500

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, other site defueling operations) will exceed the site capacity of current buildings and enclosures. The Radiological Work and Storage Building (RWSB) will provide radiological work space and a radiological storage space to meet the space demand.

[a] 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

Radiological work space is currently housed in specific facilities at the Kesselring Site. However, starting with the Land-based Prototype Refueling Overhaul, the radiological work space requirement will exceed the capacity of current buildings and enclosures. Additional space is required to provide a radiologically controlled, clean-area work environment for activities that include access to the M-140 shipping containers, tooling preparation, training, and core basket/thermal shield discharge. The RWSB is required to be a radiologically controlled area. During the previous refueling, the equipment acquired low-level radiological contamination. Re-use of the existing refueling equipment was deemed more cost effective than the acquisition of new equipment.

Additionally, radiologically controlled materials are stored in certain buildings at the Kesselring Site. However, starting with the Land-based Prototype Refueling Overhaul, the radiological storage space need will exceed the capacity of current buildings. Additional space is required to store materials such as liquid waste, solid waste, parts, tooling, and items temporarily removed from radiologically controlled areas during availabilities and overhauls.

Naval Reactors thoroughly examined alternatives to construction of a new facility, including:

- Building a smaller RWSB and purchasing new equipment.
  - Equipment costs alone greatly exceed the current plan for the RWSB.
- Construction of temporary radiological work and storage facilities.
  - Increases long-term costs to NR by creating a need for another facility.
    - RWSB will be re-used to support other site defueling operations
- Use of existing spaces
  - Insufficient space on site.
  - Dockside Work Center (1080 sq. ft.) would cost $5.8M to make ready, equivalent space in RWSB costs ~$2.9M.
  - Building 21 (2400 sq. ft.) would cost $4.4M to make ready, equivalent space in RWSB costs ~$1.6M.
  - Silo (625 sq. ft. and used in the last refueling) is beyond repair, and cannot be refurbished.
  - Existing spaces are not centrally located and would add inefficiency to Land-based Prototype Refueling Overhaul.

The RWSB MCP will provide:

- A new facility will be constructed on an existing storage pad within range of the Kesselring Site reactor servicing crane, a required capability to support the Land-based Prototype Refueling Overhaul.
- 3,600 sq. ft. of radiological trades work space.
- 6,426 sq. ft. of radiological storage space, which includes:
  - At least 3,600 sq. ft. within reach of the reactor servicing crane.
  - At least 2,800 sq. ft. to enhance the project's efficiency through centralization of operations and the re-use of existing equipment, which acquired low-level contamination from the previous overhaul.

The project is being conducted in accordance with the NR Implementation Bulletin for DOE O 413.3 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)			
Design			
FY 2013	0 [b]	0	0
FY 2014	600	600	600
Total, Design	600	600	600
Construction			
FY 2015	17,900	17,900	6,400
FY 2016	0	0	11,200
FY 2017	0	0	300
Total, Construction	17,900	17,900	17,900
TEC			
FY 2013	0 [b]	0	0
FY 2014	600	600	600
FY 2015	17,900	17,900	6,400
FY 2016	0	0	11,200
FY 2017	0	0	300
Total, TEC	18,500	18,500	18,500
Other Project Cost (OPC)			
OPC except D&D			
FY 2011	200	200	0
FY 2012	0	0	200
FY 2013	100	100	100
FY 2014	100	100	100
FY 2015	100	100	100
FY 2016	400	400	400
FY 2017	100	100	100
Total, OPC except D&D	1,000	1,000	1,000
D&D	N/A	N/A	N/A
Total, D&D	N/A	N/A	N/A
OPC			
FY 2011	200	200	0
FY 2012	0	0	200
FY 2013	100	100	100
FY 2014	100	100	100
FY 2015	100	100	100
FY 2016	400	400	400
FY 2017	100	100	100
Total OPC	1,000	1,000	1,000

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

[b] The FY 2013 annualized Continuing Resolution amount is 0; however, $2,000,000 was originally requested for FY 2013.

	(Dollars in Thousands)		
	Appropriations	Obligations	Costs
Total Project Cost (TPC)			
FY 2011	200	200	0
FY 2012	0	0	200
FY 2013	100	100	100
FY 2014	700	700	1,300
FY 2015	18,000	18,000	7,100
FY 2016	400	400	11,600
FY 2017	100	100	400
Total, TPC	19,500	19,500	19,500

6. Details of Project Cost Estimate [a]

(Dollars in Thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	2,400	2,400	N/A
Contingency	200	200	N/A
Total, Design	2,600	2,600	N/A
Construction			
Site Preparation	0	0	N/A
Equipment	0	0	N/A
Other Construction	16,100	16,300	N/A
Contingency	1,800	1,600	N/A
Total, Construction	17,900	17,900	N/A
Total, TEC	20,500	20,500	N/A
Contingency, TEC	2,000	1,800	N/A
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	0	0	N/A
Conceptual Design	200	100	N/A
Start-up	800	625	N/A
Contingency	0	0	N/A
Total, OPC except D&D	1,000	725	N/A
D&D	0	0	N/A
Total, D&D	0	0	N/A
Total, OPC	1,000	725	N/A
Contingency, OPC	0	0	N/A
Total, TPC	21,500	21,225	N/A
Total, Contingency	2,000	1,800	N/A

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

7. Schedule of Appropriation Requests

(Dollars in Thousands)

		Prior Years	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	Outyears	Total
FY 2013 (Initial Request)	TEC	0	2,000	600	17,900	0	0	0	0	20,500
	OPC	100	0	100	100	425	0	0	0	725
	TPC	100	2,000	700	18,000	425	0	0	0	21,225
FY 2014	TEC	0	0 [a]	600	17,900	0	0	0	0	18,500
	OPC	200	100	100	100	400	100	0	0	1000
	TPC	200	100	700	18,000	400	100	0	0	19,500

8. Related Operations and Maintenance Funding Requirements

Not applicable.

9. Required D&D Information

Not applicable.

10. Acquisition Approach

Not applicable.

[a] The FY 2013 annualized Continuing Resolution amount is 0; however, $2,000,000 was originally requested for FY 2013.

08-D-190, Expended Core Facility (ECF) M-290 Receiving/Discharge Station,
Naval Reactors Facility, Idaho
Project Data Sheet (PDS) is for Design/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 $75,200K 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 2013 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	Design Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2008	11/30/2006	4Q FY2007	2Q FY2010	TBD	TBD	TBD	N/A	N/A
FY 2009	11/30/2006	8/17/2007	2Q FY2010	TBD	TBD	TBD	N/A	N/A
FY 2010	11/30/2006	8/17/2007	2Q FY2010	3Q FY2009	1Q FY2010	2Q FY2014	N/A	N/A
FY 2011	11/30/2006	8/17/2007	3Q FY2010	1Q FY2010	1Q FY2011	3Q FY2014	N/A	N/A
FY 2012	11/30/2006	8/17/2007	6/28/2010	11/30/2009	2Q FY2011	1Q FY2015	N/A	N/A
FY 2013	11/30/2006	8/17/2007	6/28/2010 [a]	11/30/2009	4/25/2011	1Q FY2015	N/A	N/A
FY 2014	11/30/2006	8/17/2007	6/28/2010 [a]	11/30/2009	4/25/2011	1Q FY2015	N/A	N/A

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

3. Baseline and Validation Status

(Dollars in Thousands)

	TEC, Design	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2008	850	TBD	TBD	298	N/A	TBD	TBD
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 funds going into FY 2011.

(Dollars in Thousands)

	TEC, Design	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2014	4,258	66,637	70,895	4,423	N/A	4,423	75,318

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

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)			
Design			
FY 2008	545	545	436
FY 2009	300	300	95
FY 2010	3,236	3,236	3,507
FY 2011	177	177	220
Total, Design	4,258	4,258	4,258
Construction			
FY 2010	6,264	6,264	212
FY 2011	24,773	24,773	8,537
FY 2012	27,800	27,800	18,850
FY 2013	27,970 [b]	5,700	27,135
FY 2014	1,700	1,700	10,819
FY 2015	400	400	1,084
Total, Construction	88,907	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	18,850
FY 2013	27,970 [b]	5,700	27,135
FY 2014	1,700	1,700	10,819
FY 2015	400	400	1,084
Total, TEC	93,165 [c]	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	297	297	297
FY 2014	260	260	260

[a] Costs in FY 2012 and earlier reflect actual figures. Costs in FY 2013 and beyond reflect best estimates.

[b] The FY 2013 appropriated TEC amount in this table, $27,970,000, is the amount calculated for the FY 2013 Annualized Continuing Resolution. The calculation was in accordance with the level of legal control mandated by Section 301(c) of Division B of the Consolidated Appropriations Act, 2012 (Public Law 112-74). The amount in the FY 2013 budget request was $5,700,000.

[c] When total appropriations exceed total obligations or costs, it may indicate future unused appropriations.

(Dollars in Thousands)

	Appropriations	Obligations	Costs
FY 2015	500	500	500
Total, OPC except D&D	4,423	4,423	4,423
D&D	N/A	N/A	N/A
Total, D&D	N/A	N/A	N/A
OPC			
FY 2007	144	144	144
FY 2008	418	418	418
FY 2009	1,999	1,999	1,999
FY 2010	107	107	107
FY 2011	580	580	580
FY 2012	118	118	118
FY 2013	297	297	297
FY 2014	260	260	260
FY 2015	500	500	500
Total, OPC	4,423	4,423	4,423
Total Project Cost (TPC)			
FY 2007	144	144	144
FY 2008	963	963	854
FY 2009	2,299	2,299	2,094
FY 2010	9,607	9,607	3,826
FY 2011	25,530	25,530	9,337
FY 2012	27,918	27,918	18,968
FY 2013	28,267	5,997	27,432
FY 2014	1,960	1,960	11,079
FY 2015	900	900	1,584
Total, TPC	97,588 [a]	75,318	75,318

[a] When total appropriations exceed total obligations or costs, it may indicate future unused appropriations.

6. Details of Project Cost Estimate

(Dollars in Thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	4,258	4,258	3,770
Contingency	0	0	311
Total, Design	4,258	4,258	4,081
Construction			
Site Preparation	0	0	0
Equipment	10,053	10,053	9,901
Other Construction	50,307	49,219	47,407
Contingency	6,277	7,365	9,556
Total, Construction	66,637	66,637	66,864
Total, TEC	70,895	70,895	70,945
Contingency, TEC	6, 277	7,365	9,867
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	655	655	655
Conceptual Design	1,310	1,310	1,310
Start-up	2,458	2,276	2,276
Contingency	0	0	0
Total, OPC except D&D	4,423	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	4,423	4,241	4,241
Contingency, OPC	0	0	0
Total, TPC	75,318	75,136	75,186
Total, Contingency	6,277	7,365	9,867

7. Schedule of Appropriation Requests

(Dollars in Thousands)

		Prior Years	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	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	6,800	0	0	0	0	0	0	22,545
	OPC	453	16	180	0	0	0	0	0	649
	TPC	16,198	6,816	180	0	0	0	0	0	23,194
FY 2011	TEC	63,145	5,700	1,700	400	0	0	0	0	70,945
	OPC	3,366	115	260	500	0	0	0	0	4,241
	TPC	66,511	5,815	1,960	900	0	0	0	0	75,186
FY 2012	TEC	63,145	5,700	1,700	400	0	0	0	0	70,945
Performance	OPC	3,366	115	260	500	0	0	0	0	4,241
Baseline	TPC	66,511	5,815	1,960	900	0	0	0	0	75,186
FY 2013	TEC	63,095	5,700	1,700	400	0	0	0	0	70,895
	OPC	3,366	115	260	500	0	0	0	0	4,241
	TPC	66,461	5,815	1,960	900	0	0	0	0	75,136
FY 2014	TEC	63,095	27,970 [a]	1,700	400	0	0	0	0	93,165
	OPC	3,366	297	260	500	0	0	0	0	4,423
	TPC	66,461	28,267	1,960	900	0	0	0	0	97,588 [b]

8. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	1Q FY 2015
Expected Useful Life (number of years)	40
Expected Future Start of D&D of this capital asset (fiscal quarter)	2Q FY 2055

(Related Funding Requirements)

(Dollars in Thousands)

	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	350	350	21,605	21,605
Maintenance	857	857	52,902	52,902
Total, Operations and Maintenance	1,207	1,207	74,507	74,507

[a] The FY 2013 appropriated TEC amount in this table, $27,970,000, is the amount calculated for the FY 2013 Annualized Continuing Resolution. The calculation was in accordance with the level of legal control mandated by Section 301(c) of Division B of the Consolidated Appropriations Act, 2012 (Public Law 112-74). The amount in the FY 2013 budget request was $5,700,000.

[b] When total appropriations exceed total obligations or costs, it may indicate future unused appropriations.

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.

GENERAL PROVISIONS

(including cancellation and transfer of funds)

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 2014 until the enactment of the Intelligence Authorization Act for fiscal year 2014.

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]The Secretary of Energy may transfer up to $48,000,000 from any appropriation or combination of appropriations made available to the Department of Energy in this or prior Acts to any other appropriation, for the purpose of carrying out domestic uranium enrichment research, development, and demonstration activities: Provided, That any transfer pursuant to this section does not transfer funds from the national defense (050) budget function to any other budget function, or from any other budget function to the national defense (050) budget function.Note.--A full-year 2013 appropriation for this account was not enacted at the time the budget was prepared; therefore, this account is operating under a continuing resolution (P.L. 112-175). The amounts included for 2013 reflect the annualized level provided by the continuing resolution.

Office of the Administrator

Weapons Activities

Defense Nuclear Nonproliferation

Naval Reactors