DOE/CF-024
Volume 1

Department of Energy

FY 2009 Congressional Budget Request

National Nuclear Security Administration

Office of the Administrator
Weapons Activities
Defense Nuclear Nonproliferation
Naval Reactors

DOE/CF-024
Volume 1

Department of Energy

FY 2009 Congressional Budget Request

National Nuclear Security Administration

Office of the Administrator
Weapons Activities
Defense Nuclear Nonproliferation
Naval Reactors

February 2008 *Office of Chief Financial Officer* *Volume 1*

Office of the Administrator 

Weapons Activities 

Defense Nuclear Nonproliferation 

Naval Reactors 

Office of the Administrator

Weapons Activities

Defense Nuclear Nonproliferation

Naval Reactors

Volume 1

Table of Contents

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

Department of Energy
Appropriation Account Summary
(dollars in thousands - OMB Scoring)

	FY 2007 Current Op. Plan	FY 2008 Current Approp.	FY 2009 Congressional Request	FY 2009 vs. FY 2008 $	FY 2009 vs. FY 2008 %
Discretionary Summary By Appropriation					
Energy And Water Development, And Related Agencies					
Appropriation Summary:					
Energy Programs					
Energy efficiency and renewable energy	——	1,722,407	1,255,393	-467,014	-27.1%
Electricity delivery and energy reliability	——	138,556	134,000	-4,556	-3.3%
Nuclear energy	——	961,665	853,644	-108,021	-11.2%
Legacy management	——	33,872	——	-33,872	-100.0%
Energy supply and Conservation	2,145,149	——	——	——	——
Fossil energy programs					
Clean coal technology	——	-58,000	——	+58,000	+100.0%
Fossil energy research and development	580,946	742,838	754,030	+11,192	+1.5%
Naval petroleum and oil shale reserves	21,316	20,272	19,099	-1,173	-5.8%
Strategic petroleum reserve	164,441	186,757	344,000	+157,243	+84.2%
Northeast home heating oil reserve	7,966	12,335	9,800	-2,535	-20.6%
Total, Fossil energy programs	774,669	904,202	1,126,929	+222,727	+24.6%
Uranium enrichment D&D fund	556,606	622,162	480,333	-141,829	-22.8%
Energy information administration	90,653	95,460	110,595	+15,135	+15.9%
Non-Defense environmental cleanup	349,687	182,263	213,411	+31,148	+17.1%
Science	3,836,613	3,973,142	4,721,969	+748,827	+18.8%
Nuclear waste disposal	99,206	187,269	247,371	+60,102	+32.1%
Departmental administration	147,943	148,415	154,827	+6,412	+4.3%
Inspector general	41,819	46,057	51,927	+5,870	+12.7%
Innovative technology loan guarantee program	——	4,459	——	-4,459	-100.0%
Total, Energy Programs	8,042,345	9,019,929	9,350,399	+330,470	+3.7%
Atomic Energy Defense Activities					
National nuclear security administration:					
Weapons activities	6,258,583	6,297,466	6,618,079	+320,613	+5.1%
Defense nuclear nonproliferation	1,824,202	1,335,996	1,247,048	-88,948	-6.7%
Naval reactors	781,800	774,686	828,054	+53,368	+6.9%
Office of the administrator	358,291	402,137	404,081	+1,944	+0.5%
Total, National nuclear security administration	9,222,876	8,810,285	9,097,262	+286,977	+3.3%
Environmental and other defense activities:					
Defense environmental cleanup	5,731,240	5,349,325	5,297,256	-52,069	-1.0%
Other defense activities	636,271	754,359	1,313,461	+559,102	+74.1%
Defense nuclear waste disposal	346,500	199,171	247,371	+48,200	+24.2%
Total, Environmental & other defense activities	6,714,011	6,302,855	6,858,088	+555,233	+8.8%
Total, Atomic Energy Defense Activities	15,936,887	15,113,140	15,955,350	+842,210	+5.6%
Power marketing administrations:					
Southeastern power administration	5,602	6,404	7,420	+1,016	+15.9%
Southwestern power administration	29,998	30,165	28,414	-1,751	-5.8%
Western area power administration	232,326	228,907	193,346	-35,561	-15.5%
Falcon & Amistad operating & maintenance fund	2,665	2,477	2,959	+482	+19.5%
Colorado River Basins	——	-23,000	-23,000	——	——
Total, Power marketing administrations	270,591	244,953	209,139	-35,814	-14.6%
Federal energy regulatory commission	——	——	——	——	——
Subtotal, Energy And Water Development and Related Agencies	24,249,823	24,378,022	25,514,888	+1,136,866	+4.7%
Uranium enrichment D&D fund discretionary payments	-452,000	-458,787	-463,000	-4,213	-0.9%
Excess fees and recoveries, FERC	-43,595	-34,411	-36,932	-2,521	-7.3%
Total, Discretionary Funding	**23,754,228**	**23,884,824**	**25,014,956**	**+1,130,132**	**+4.7%**

National Nuclear Security Administration

Overview

Appropriation Summary

(dollars in thousands)

	FY 2007 Current Appropriations	FY 2008 Original Appropriation	FY 2008 Adjustments	FY 2008 Current Appropriation	FY 2009 Request
National Nuclear Security Administration					
Office of the Administrator	358,291	405,987	-3,850	402,137	404,081
Weapons Activities	6,258,583	6,355,633	-58,167	6,297,466	6,618,079
Defense Nuclear Nonproliferation	1,824,202	1,673,275	-15,279	1,657,996	1,247,048
Naval Reactors	781,800	781,800	-7,114	774,686	828,054
Total, NNSA	**9,222,876**	**9,216,695**	**-84,410**	**9,132,285**	**9,097,262**
Rescission of Prior Year Balances	0	-322,000	0	-322,000	0
Total, NNSA (OMB Scoring)	**9,222,876**	**8,894,695**	**-84,410**	**8,810,285**	**9,097,262**

The FY 2009 Request for the National Nuclear Security Administration (NNSA) is $9.1 billion, a decrease of $35 million or 0.4 percent from the FY 2008 appropriation.

Within the Weapons Activities appropriation, the Defense Programs request of $5.2 billion shows an increase of $125 million over the FY 2008 appropriation, about 2.4 percent, and refocuses the work to support stockpile and complex transformation. Within the requested level, NNSA will continue all programs to meet the immediate needs of the stockpile, stockpile surveillance, annual assessment, and Life Extension Programs; will continue to move ahead with complex transformation, and increase the rate of warhead dismantlements. The Weapons Dismantlement activities increase $13.4 million, about 26 percent, reflecting an increased focus on dismantling retired Cold War warheads. Additionally, $10 million is requested to enable maturation of the Reliable Replacement Warhead design. The funding requested for Campaigns decreases by 13 percent from the FY 2008 appropriation, reflecting completion of major construction projects, including the National Ignition Facility and the Microsystems and Engineering Sciences Applications at the national laboratories, and the conclusion of the Pit Manufacturing and Certification campaign. Readiness in Technical Base and Facilities increases about 5 percent over the FY 2008 appropriation, primarily in the Construction account to cover project baseline funding requirements.

Other growth areas in the Weapons Activities appropriation include Cyber Security and Nuclear Weapons Incident Response. The Cyber Security activities increase $22.2 million, about 22 percent, to support the next step in a major five-year effort focused on revitalization, certification, accreditation and training across the NNSA complex. Funding for the Nuclear Weapons Incident Response program increases $63.3 million, 40 percent, supporting our increased focus on nuclear counterterrorism and defeating improvised nuclear devices. The funding increase results from two functional transfers and increased funding for two national security initiatives started in FY 2008. The request proposes a

Transformation Disposition program at $77.4 million as a new initiative to begin to eliminate excess NNSA facilities consistent with complex transformation activities.

The FY 2009 budget request for the Defense Nuclear Nonproliferation appropriation totals $1.2 billion. The appearance of a significant decrease is due to the final FY 2008 appropriations that added about $480 million in funding above the President's Request to programs in this account. In addition, the FY 2008 Consolidated Appropriations Act (P.L. 110-161) shifted the funding for the Mixed Oxide (MOX) Fuel Fabrication Facility DOE's Office of Nuclear Energy and funding for the related Pit Disassembly and Conversion Facility/Waste Solidification Building (PDCF/WSB) project to the Weapons Account. This shift represents over $600 million in funding that would have been requested within the Defense Nuclear Nonproliferation appropriation in FY 2009. In the out years, the Defense Nuclear Nonproliferation appropriation budget projections remain relatively constant at about $1.1 billion; these out year estimates do not reflect funding for the MOX Project or the PDCF/WSB project. These shifts do not change or diminish in any way the importance of these projects to the nation's nuclear nonproliferation efforts, and in total, the funding commitment to DOE's nonproliferation activities is $1.853 billion in FY 2009. The budget describes a shift in emphasis from work completed under the Bratislava agreement to additional Second Line of Defense sites, including Megaports, and continued expansion of nuclear and radiological material removal under the Global Threat Reduction Initiative.

The Office of the Administrator account is requested at $404.1 million, essentially level with the FY 2008 appropriation reflecting a leveling of staffing growth. The Naval Reactors program is requested at $828.1 million, supporting all naval nuclear propulsion work, beginning with reactor technology development, continuing through reactor operations, and ending with reactor plant disposal.

The NNSA budget justification contains information for five years as required by Sec. 3253 of P.L. 106-065. This section, entitled *Future-Years Nuclear Security Program (FYNSP)*, requires the Administrator to submit to Congress each year the estimated expenditures necessary to support the programs, projects and activities of the NNSA for a five-year fiscal period, in a level of detail comparable to that contained in the budget.

Outyear Appropriation Summary

NNSA Future-Years Nuclear Security Program (FYNSP)

(dollars in thousands)

	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
NNSA					
Office of the Administrator	404,081	419,848	436,266	451,771	469,173
Weapons Activities	6,618,079	6,985,695	7,197,844	7,286,912	7,460,318
Defense Nuclear Nonproliferation	1,247,048	1,082,680	1,076,578	1,111,337	1,133,982
Naval Reactors	828,054	848,641	869,755	880,418	899,838
Total, NNSA	**9,097,262**	**9,336,864**	**9,580,443**	**9,730,438**	**9,963,311**

The FY 2009-2013 Future-Years Nuclear Security Program projects $47.7 billion for NNSA programs though 2013. The principal decrease from the FY 2008-2012 FYNSP is a result of the transfer of funding for the MOX Facility program from NNSA to the Office of Nuclear Energy starting in FY 2008.

FY 2007 Budget Execution[a] [b]

(dollars in thousands)

	FY 2007 Appropriation	PY Balance/ General Reduction	Supplemental Appropriations	Reprogramming and Other Transfers	Total Adjustments	Final FY 2007
Office of the Administrator	340,291	0	1,000	17,000	18,000	358,291
Weapons Activities	6,275,583	0	0	-17,000	-17,000	6,258,583
Defense Nuclear Nonproliferation	1,683,339	0	134,000	6,863	140,863	1,824,202
Naval Reactors	781,800	0	0	0	0	781,800
Total, NNSA	**9,081,013**	**0**	**135,000**	**6,863**	**141,863**	**9,222,876**

FY 2008 Budget Execution

(dollars in thousands)

	FY 2008 Appropriation	PY Balance/ General Reduction	Section 312 Rescission	Reprogramming and Other Transfers	Total Adjustments	Current FY 2008
Office of the Administrator	405,987	0	-3,850	0	-3,850	402,137
Weapons Activities	6,442,147	-86,514	-58,167	0	-144,681	6,297,466
Defense Nuclear Nonproliferation	1,673,275	0	-15,279	0	-15,279	1,657,996
Naval Reactors	781,800	0	-7,114	0	-7,114	774,686
Total, NNSA	**9,303,209**	**-86,514**	**-84,410**	**0**	**-170,924**	**9,132,285**
Rescission of Prior Year Balances	-322,000	0	0	0	0	-322,000
Total, NNSA (OMB Scoring)	**8,981,209**	**-86,514**	**-84,410**	**0**	**-170,924**	**8,810,285**

Preface

The NNSA was created by the Congress in 2000 to focus the management of the nation's nuclear defense through a single, separately organized and managed agency within the Department of Energy (DOE). The NNSA brought together three existing major program components that maintain all of the weapons in the U.S. nuclear weapons stockpile and the nuclear weapons complex infrastructure; lead the Administration's efforts to reduce and prevent the proliferation of nuclear weapons, materials, and expertise; and provide cradle-to-grave support for the U. S. Navy fleet's nuclear propulsion.

The NNSA is funded through four appropriations. The Weapons Activities appropriation funds mission programs in five organizations, (Defense Programs, Emergency Operations, Infrastructure and Environment, Defense Nuclear Security, and Cyber Security), and has 15 Government Performance and Results Act (GPRA) units. The Defense Nuclear Nonproliferation appropriation funds one program, Defense Nuclear Nonproliferation, with 6 GPRA Units. The Naval Reactors appropriation supports all

[a] The amount of $17,000,000 for the Office of the Administrator appropriation transfer was approved on August 9, 2007.

[b] Defense Nuclear Nonproliferation "Reprogramming and Other Transfers" reflects the amount of $12,053,000 for international contributions and -$5,190,000 appropriation transfer for Small Business Innovative Research.

activities, including Program Direction, for that program, and is a single GPRA Unit. The Office of the Administrator appropriation provides support for all Federal NNSA employees in Headquarters and its field elements (except Secure Transportation Asset couriers and Naval Reactors), and also provides for Information Technology for Federal employees in Headquarters and field locations and is a single GPRA Unit Program.

This overview will describe Mission, Strategic Goals, and Funding by GPRA Unit Program. These items together put the NNSA program in perspective. It will also address the Program Assessment Rating Tool (PART) assessments for NNSA subprograms, and Significant Program Shifts, and provides a high level summary of the program proposals.

Mission

The mission of the National Nuclear Security Administration is to strengthen national security through the military application of nuclear energy and by reducing the global threat from terrorism and weapons of mass destruction.

Strategic Themes and Goals

The Department's Strategic Plan identifies five Strategic Themes (one each for Energy Security, Nuclear Security, Scientific Discovery and Innovation, Environmental Responsibility, and Management Excellence aspects of the mission) plus sixteen Strategic Goals that tie to the Strategic Themes. The NNSA supports the following elements of the DOE Strategic Plan:

Theme 2, Nuclear Security: Ensuring America's Nuclear Security.

Contribution to Strategic Goals

Strategic Goal 2.1, Nuclear Deterrent: Transform the nation's nuclear weapons stockpile and supporting infrastructure to be more responsive to the threats of the 21st century.

This Administration inherited an aging nuclear weapons complex and a legacy nuclear stockpile that was too large, lacked modern safety and security features, did not have acceptable long-term reliability, and was poorly suited for the uncertain future of the 21st century.

The FY 2004-directed reductions of the U.S. nuclear weapons stockpile were completed in 2007, 5 years early. Today's nuclear weapons stockpile is now the size envisioned for 2012, and by 2012 it will be almost 15 percent less than that—a total that is just 25 percent of what it was at the end of the Cold War. The NNSA has created a vision that replaces the large, old Cold-War nuclear weapons complex with a small, modern nuclear security enterprise that will be able to respond to our nation's needs in the 21st century. It will allow further reductions in the nuclear stockpile by providing an industrial hedge against geopolitical or technical problems and will reduce security costs by consolidating nuclear materials. Complex Transformation is in the planning stages at this time; in compliance with the National Environmental Policy Act, NNSA is preparing a Complex Transformation supplement to the 1996 Stockpile Stewardship and Management Programmatic Environmental Impact Statement. NNSA expects to issue a Record of Decision in the fall of 2008.

The NNSA activities funded by the Weapons Activities appropriation contribute to achieving these goals in support of Strategic Goal 2.1. These programs provide personnel and facilities and support for research, development, and production activities associated with maintaining the nuclear weapons

stockpile. The activities are conducted at a nationwide network of government-owned, contractor operated laboratories, testing facilities and production plants that are secured, maintained, and recapitalized by the Federal government, and staffed by a highly specialized and trained scientific/technical workforce to assure a robust infrastructure supporting the U.S. nuclear deterrent. The NNSA activities assure physical and cyber security for all NNSA facilities, and support the long-term environmental stewardship at NNSA sites after completion of remediation activities by the DOE Office of Environmental Management.

Although the NNSA mission activities are undertaken for purposes of Stockpile Stewardship, many Weapons Activities' programs and facilities also contribute to Strategic Goal 3.2, Foundations of Science, to advance the nation's science enterprise. Signature facilities and world-class visibility remain critical elements of the long-term recruitment and retention of scientific and technical expertise in the national security science and technology enterprise. Today, NNSA is a proven leader in areas including the scientific computing achieved in the NNSA Advanced Simulation and Computing Campaign, high energy density physics through the National Ignition Facility, applied and basic research in microelectronics, plutonium metallurgy, neutron science, and a number of other disciplines.

The science, technology and engineering capabilities of NNSA, while remaining focused on Nuclear Weapons stewardship and non-proliferation, are strongly leveraged for a broader range of national security mandates, from responding to national security threats to addressing the stability of our energy supplies. A strong national capability in a broad spectrum of science disciplines allows the nation to address a unique range of current and future national security issues and is essential for a strong U.S. global presence. The NNSA and its laboratories have a unique national role in taking on immense projects requiring both breadth and depth of science as well as an ability to respond to rapidly changing priorities. For example, simulation tools and computers developed in the Advanced Simulation and Computing Campaign, together with science, technology and engineering expertise, are supporting nuclear forensics activities in Emergency Operations including post-detonation device characterization, and nuclear counterterrorism activities such as improvised nuclear device modeling, simulation, analysis and device signature identification. The co-location of the multi-disciplinary national security science and technology skills at the laboratories provides the Complex the versatility to address urgent national needs.

The NNSA Laboratories have the skills and infrastructure to assume an enhanced responsibility with broader national security scope, making use of their distinctive collection of people and facilities, working in partnership with other federal agencies. The NNSA provides a wide range of science and technology expertise on nuclear security issues to the intelligence community and to the national security agencies. This expertise, honed through decades of research in national defense-related disciplines, is being tapped to address a host of issues; from applying expertise in shaped explosive charges to understand and mitigate the effects of the more sophisticated Improvised Explosive Devices (IEDs) used by terrorists, to building on our experience in modeling to predict the spread and containment of infectious diseases, either of natural origin or maliciously introduced. Currently, supercomputers and weapons codes are being developed and coordinated with the Nuclear Nonproliferation programs to conduct research and development in seismic signal detection, propagation, and interpretation in support of nuclear explosives monitoring. As these and many other examples demonstrate, the Nation may be challenged in ways that can not be anticipated. We must maintain and reinvigorate the talent and infrastructure to be able to respond to future surprises.

The NNSA envisions partnering with other agencies on national security issues through the focusing of key capabilities at the appropriate national laboratories. The consolidation of activities, enabled through complex transformation, will ensure that our partners will have a clear understanding of technical resources that can be tapped for particular areas of science; furthermore, this consolidation will result in eliminating areas of unnecessary redundancy.

Some NNSA facilities, including the Los Alamos Neutron Science Center (LANSCE) at Los Alamos National Laboratory and the OMEGA laser at the University of Rochester, support scientific research users from other elements of the DOE, as well as other Federal agencies, and partners in the academic and industrial communities. The NNSA, through Readiness in Technical Base and Facilities (RTBF), will determine what steps need to be taken to guarantee the reliability of the LANSCE as a user facility and as a central facility enabling science at Los Alamos. This work in the RTBF line will ultimately provide a foundational basis for establishing a signature experimental facility for materials research. The importance of a signature experimental facility at Los Alamos is recognized by the NNSA and the Department of Energy and options are under consideration. Also, Weapons Activities programs support Strategic Goal 5.3, Infrastructure, through the Facilities and Infrastructure Recapitalization programs, Readiness in Technical Base and Facilities, construction projects, and the Complex Transformation planning.

Detailed multi-year performance goals, indicators, annual targets, and results for all programs funded by the Weapons Activities appropriation are included on tables within each GPRA Unit.

Strategic Goal 2.2, Weapons of Mass Destruction: Prevent the acquisition of nuclear and radiological materials for use in weapons of mass destruction and in other acts of terrorism.

Under a variety of programs, the United States is working to improve the security of fissionable material in the former Soviet Union. The multi-part strategy involves ending fissile material production, eliminating these materials where feasible, and if not, consolidating materials and improving security. The Departments of State and Defense contribute to this effort, but the DOE has the lead in multiple areas.

All NNSA activities funded by the Defense Nuclear Nonproliferation appropriation contribute to achieving Strategic Goal 2.2. The nonproliferation programs address the full dimension of the threat of weapons of mass destruction proliferation, and achieve the desired controls through enhanced detection capabilities, protecting or eliminating weapons and weapons-usable materials, infrastructure, and expertise, and by reducing the risk of accidents in nuclear fuel cycle facilities worldwide.

Global Partnership: The Global Partnership Against the Spread of Weapons and Materials of Mass Destruction, formed at the G-8 Kananaskis Summit in June 2002 has recommitted the G-8 nations (the U.S., Canada, France, Germany, Italy, Japan, Russia, and the United Kingdom) to address nonproliferation, disarmament, counter-terrorism, and nuclear safety issues. The G-8 leaders have pledged to devote up to $20 billion over ten years to support cooperative efforts, initially in Russia, and have invited other similarly motivated countries to participate in this partnership. The President has committed the U.S. to provide $10 billion over ten years to be matched by $10 billion from the other members, attesting to the belief that nonproliferation concerns are of the highest government priority; and therefore that this program's work is of paramount importance for the security of the nation and the world. The table below reflects the DOE activities, by country and program.

Three agencies fund the $1 billion per year U.S. commitment to Global Partnership. The Department of Energy and Department of Defense carry the majority of this responsibility with the Department of State contributing a smaller portion. In FY 2006 through 2009, DOE will have contributed more than than 50 percent of the required interagency funding for Global Partnership. Although the DOE projects a lower contribution in the outyears of the current FYNSP, DOE's contribution will still average approximately $300 million per year.

DOE Nonproliferation and Threat Reduction Assistance to Former Soviet States

($ in millions)

Summary by Country	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Russia	584.9	430.3	269.9	233.1	216.4	225.2
Kyrgyzstan	2.0	0	0	0	0	0
Kazakhstan	52.7	35.4	12.8	3.2	3.7	2.7
Ukraine	5.3	12.8	7.4	10.1	4.8	5.3
Uzbekistan	1.0	0	0	0	0	0
Azerbaijan	7.9	2.6	1.3	1.3	1.3	1.0
Georgia	10.3	0.5	0.5	0.5	0	0
Tajikistan	0	0	0	2.8	0	0
Turkmenistan	0	4.0	2.4	2.4	.2	.2
Total, NN Contribution	**664.1**	**485.6**	**294.3**	**253.4**	**226.4**	**234.4**

Strategic Goal 2.2 is also supported by programs funded in the Weapons Activities appropriation, with national assets for transportation of weapons, weapon components, and materials and national nuclear emergency response assets.

Detailed multi-year performance goals, indicators, annual targets, and results for all programs funded within the Defense Nuclear Nonproliferation appropriation are included on tables within each GPRA Unit.

Strategic Goal 2.3, Nuclear Propulsion Plants: Provide safe, militarily effective nuclear propulsion plants to the U.S. Navy.

All NNSA activities funded by the Naval Reactors appropriation contribute to Strategic Goal 2.3. Naval Reactors is responsible for all naval nuclear propulsion work, beginning with reactor technology development, and continuing through reactor operation, and ending with reactor plant disposal. The program ensures the safe operation of reactor plants in operating nuclear powered submarines and aircraft carriers (constituting 40 percent of the Navy's principal combatants), and fulfills the Navy's requirements for new nuclear propulsion plants that meet current and future national defense requirements. Detailed multi-year performance goals, indicators, annual targets and results for the Naval Reactors program are included on tables within the GPRA Unit Program Goal.

Strategic Theme 5, Management Excellence: Enabling the mission through sound management

Strategic Goals 5.1, Integrated Management, Goal 5.2 Human Capital, and Goal 5.4, Resources

The Office of the Administrator appropriation supports Strategic Goal 2.1, Nuclear Deterrent and Strategic Goal 2.2, Weapons of Mass Destruction, and funding is distributed under those strategic goals. However, it also supports Strategic Theme 5, Management Excellence. The Office of the Administrator contributes to the National Nuclear Security Administration's Strategic Goals by providing the Federal personnel and resources necessary to plan, manage, and oversee the operation of the programs designed to meet these goals.

Funding by Strategic and GPRA Unit Program Goal

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
Strategic Goal 2.1, Nuclear Deterrent			
GPRA Unit Program Goal 2.1.26.00, Directed Stockpile Work	1,430,192	1,401,252	1,670,715
GPRA Unit Program Goal 2.1.27.00, Science Campaign	267,758	287,624	328,070
GPRA Unit Program Goal 2.1.28.00, Engineering Campaign	161,736	169,548	142,742
GPRA Unit Program Goal 2.1.29.00, ICF Ignition and High Yield Campaign	489,706	470,206	421,242
GPRA Unit Program Goal 2.1.30.00, Advanced Simulation and Computing Campaign	611,253	574,537	561,742
GPRA Unit Program Goal 2.1.31.00, Pit Manufacturing and Certification Campaign	242,392	213,831	0
GPRA Unit Program Goal 2.1.32.00, Readiness Campaign	201,713	158,088	183,037
GPRA Unit Program Goal 2.1.33.00, Readiness in Technical Base and Facilities	1,613,241	1,637,381	1,720,523
GPRA Unit Program Goal 2.1.34.00, Secure Transportation Asset	209,537	211,523	221,072
GPRA Unit Program Goal 2.1.35, Nuclear Weapons Incident Response	133,514	158,655	221,936
GPRA Unit Program Goal 2.1.36.00, Facilities and Infrastructure Recapitalization Program	169,383	179,991	169,549
GPRA Unit Program Goal 2.1.57.00, Defense Nuclear Security	656,653	799,233	737,328
GPRA Unit Program Goal 2.1.58.00, Cyber Security	104,505	100,287	122,511
GPRA Unit Program Goal 2.1.38.00, Environmental Projects and Operations	0	8,592	40,587
GPRA Unit 2.1.59.00, Transformation Disposition	0	0	77,391
GPRA Unit 2.0.25, Office of the Administrator	300,219	340,321	341,314
All Other			
Congressionally Directed Projects	0	47,232	0
Offset for Safeguards and Security Work for Others	-33,000	-34,000	0
Use of Prior Year Balances	0	-86,514	-366
Total, Strategic Goal 2.1, Nuclear Deterrent	**6,558,802**	**6,637,787**	**6,959,393**

Funding by Strategic and GPRA Unit Program Goal (cont'd)

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
Strategic Goal 2.2, Weapons of Mass Destruction			
GPRA Unit Program Goal 2.2.39.00, Nonproliferation and Verification Research and Development	265,197	387,196	275,091
GPRA Unit Program Goal 2.2.40.00, Elimination of Weapons-Grade Plutonium Production	231,152	179,940	141,299
GPRA Unit Program Goal 2.2.41.00, Nonproliferation and International Security	128,911	149,993	140,467
GPRA Unit Program Goal 2.2.42.00, International Nuclear Materials Protection, and Cooperation	597,646	624,482	429,694
GPRA Unit Program Goal 2.2.43.00, Fissile Materials Disposition	470,062	66,235	41,774
GPRA Unit Program Goal 2.2.44.00, Global Threat Reduction Initiative	131,234	193,225	219,641
GPRA Unit 2.0.25, Office of the Administrator	58,072	61,816	62,767
All Other			
Congressionally Directed Projects	0	7,380	0
International Nuclear Fuel Bank	0	49,545	0
Use of Prior Year Balances	0	0	-918
Total, Strategic Goal 2.2, Weapons of Mass Destruction	**1,882,274**	**1,719,812**	**1,309,815**
Total, Strategic Goal 2.3, Program Goal 2.3.45.00, Defense Nuclear Power (Naval Reactors)	**781,800**	**774,686**	**828,054**
Total, NNSA	**9,222,876**	**9,132,285**	**9,097,262**

Outyear Funding by Strategic and GPRA Unit Program Goal

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
Strategic Goal 2.1, Nuclear Deterrent				
GPRA Unit Program Goal 2.1.26.00, Directed Stockpile Work	1,757,079	1,784,979	1,755,218	1,771,388
GPRA Unit Program Goal 2.1.27.00, Science Campaign	314,091	300,192	301,662	304,902
GPRA Unit Program Goal 2.1.28.00, Engineering Campaign	148,863	146,565	150,475	153,907
GPRA Unit Program Goal 2.1.29.00, ICF Ignition and High Yield Campaign	434,007	381,173	373,005	377,762
GPRA Unit Program Goal 2.1.30.00, Advanced Simulation and Computing Campaign	526,373	510,808	514,405	520,645
GPRA Unit Program Goal 2.1.31.00, Pit Manufacturing and Certification Campaign	0	0	0	0
GPRA Unit Program Goal 2.1.32.00, Readiness Campaign	170,003	161,139	161,130	164,295
GPRA Unit Program Goal 2.1.33.00, Readiness in Technical Base and Facilities	1,904,398	2,153,557	2,275,909	2,372,916
GPRA Unit Program Goal 2.1.34.00, Secure Transportation Asset	249,555	261,543	268,134	269,325
GPRA Unit Program Goal 2.1.35.00, Nuclear Weapons Incident Response	229,661	235,211	242,425	250,947
GPRA Unit Program Goal 2.1.36.00, Facilities and Infrastructure Recapitalization Program	192,945	196,379	195,096	194,779
GPRA Unit Program Goal 2.1.57.00, Defense Nuclear Security	818,285	817,809	793,856	814,928
GPRA Unit Program Goal 2.1.58.00, Cyber Security	113,690	120,874	130,121	140,621
GPRA Unit Program Goal 2.1.38.00, Environmental Projects and Operations	37,288	39,026	37,468	36,040
GPRA Unit Program Goal 2.1.59.00, Transformation Disposition	89,457	88,589	88,008	87,863
Offset for Safeguards and Security Work for Others	0	0	0	0
GPRA Unit Program Goal 2.0.25, Office of the Administrator	354,835	368,917	382,234	397,115
Total, Strategic 2.1, Nuclear Deterrent	**7,340,530**	**7,566,761**	**7,669,146**	**7,857,433**
Strategic Goal 2.2, Weapons of Mass Destruction				
GPRA Unit Program Goal 2.2.39.00, Nonproliferation and Verification Research and Development	318,620	334,182	343,397	351,098
GPRA Unit Program Goal 2.2.40.00, Elimination of Weapons-Grade Plutonium Production	24,507	0	0	0
GPRA Unit Program Goal 2.2.41.00, Nonproliferation and International Security	151,052	158,711	171,108	175,368
GPRA Unit Program Goal 2.2.42.00, International Materials, Protection, Control, and Cooperation	400,511	394,626	395,225	404,064
GPRA Unit Program Goal 2.2.43.00, Fissile Materials Disposition	37,691	27,985	28,435	26,000
GPRA Unit Program Goal 2.2.44.00, Global Threat Reduction Initiative	150,299	161,074	173,172	177,452
GPRA Unit Program Goal 2.0.25, Office of the Administrator	65,013	67,349	69,537	72,058
Total, Strategic Goal 2.2, Weapons of Mass Destruction	**1,147,693**	**1,143,927**	**1,180,874**	**1,206,040**
Total, Strategic Goal 2.3, Program Goal 2.3.45.00, Defense Nuclear Power (Naval Reactors)	**848,641**	**869,755**	**880,418**	**899,838**
Total, NNSA	**9,336,864**	**9,580,443**	**9,730,438**	**9,963,311**

Program Assessment Rating Tool (PART)

The PART was developed by the Office of Management and Budget (OMB) to provide a standardized way to assess the effectiveness of the Federal Government's portfolio of programs. The PART provides a standardized assessment of how well Federal programs are managed to deliver meaningful results to taxpayers. The ratings are intended to help link budget requests to actual program performance and provide a consistent approach to rating programs across the Federal government.

The structured framework of the PART provides a means through which programs can assess their activities differently than through traditional technical reviews. The PART process links seamlessly with the NNSA Planning, Programming, Budgeting, and Evaluation (PPBE) concept, and PART "self-assessments" for all NNSA programs are a prominent aspect of the annual program evaluation cycle. The NNSA ratings on PART self-assessments have achieved consistency with the OMB ratings, which indicates rigor in our process.

The NNSA program management and financial structures are completely integrated, and each program is working toward a number of longer-term "endpoint targets" that facilitate development of realistic annual targets for each year of the FYNSP. These provide meaningful information for program management and evaluation, and are the basis for performance management linkage from the DOE Strategic Plan through the Headquarters programs to the laboratories, test site, and plants carrying out the technical mission work.

The FY 2009-2013 budget cycle marks the sixth year DOE has participated in the OMB PART review. NNSA program ratings compare very favorably with PART ratings in the DOE and across the government. In the first 6 years, 11 of 23 NNSA program assessments were rated as *"Effective"* and the remaining 12 were rated as "*Moderately Effective."* Results of PART assessments are summarized in the following table:

National Nuclear Security Administration
OMB PART Assessments for the Past Six Years

FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Advanced Simulation and Computing Campaign – *Effective*	Inertial Confinement Fusion Ignition & High Yield Campaign and National Ignition Facility – *Moderately Effective*	Directed Stockpile Work – *Moderately Effective*	Science Campaign – *Moderately Effective*	Nuclear Weapons Incident Response – *Moderately Effective*	Advanced Simulation and Computing Campaign – *Effective*
International Materials Protection and Cooperation – *Effective*	Readiness in Technical Base and Facilities – Operations – *Moderately Effective*	Secure Transportation Asset – *Moderately Effective*	Readiness Campaign – *Effective*	Pit Campaign – *Effective*	Readiness in Technical Base and Facilities – *Moderately Effective*

FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Facilities and Infrastructure Recapitalization – *Moderately Effective*	Elimination of Weapons Grade Plutonium Production (new program) – *Results Not Demonstrated (reassessed in FY 2007 as Effective)*	Nonproliferation and International Security – *Effective*	Nonproliferation and Verification Research and Development – *Moderately Effective*	Global Threat Reduction Initiative – *Effective*	International Nuclear Materials Protection and Cooperation -- *Effective*
Safeguards and Security – *Adequate (reassessed in FY 2006 as Moderately Effective)*			Global Initiatives for Proliferation Prevention – *Effective*	Fissile Materials Disposition – *Moderately Effective*	
			Naval Reactors – *Effective*	Engineering Campaign – *Moderately Effective*	

NNSA Budget Request Summary

The NNSA FY 2009-2013 budget proposal continues significant efforts to meet Administration and Secretarial priorities. Key focus areas include:

- Transforming the nuclear weapons infrastructure while meeting Department of Defense (DoD) requirements;
- Addressing Nonproliferation priorities through innovative programs in the Former Soviet Union and other countries;
- Supporting naval nuclear propulsion requirements for the U. S. Navy;
- Providing nuclear counter-terrorism and emergency response assets and capabilities in support of homeland security;
- Maintaining comprehensive security for facilities, employees and information;
- Reducing the deferred maintenance backlog for critical facilities and achieving facility footprint reduction goals; and,
- Providing corporate management and oversight for NNSA programs and operations.

Outyear Budget/Future-Years Nuclear Security Program baselines were established in the FY 2008 President's Budget and realigned for FY 2009 to reflect program adjustments and to best balance priorities and efforts within outyear funding levels.

Key Changes within the FY 2009 Request:

- The Defense Programs request includes funding to support Life Extension Program activities to meet Department of Defense requirements.

- Within Directed Stockpile Work, $10 million is requested to enable maturation of the Reliable Replacement Warhead (RRW) design to comply with direction in the FY 2008 Consolidated Appropriations Act (P.L. 110-161) to address questions raised by the JASON review;

- In the Science Campaign, $20 million is requested for the Advanced Certification program will continue efforts begun in FY 2008 at the direction of the Congress to review, evaluate and implement key recommendations from the JASON's RRW study regarding approaches to establishing an accredited warhead certification plan without nuclear testing;

- Within Enhanced Surety, $10 million is included in the request for evaluation of surety options for possible future systems, whether LEPs or RRW systems;

- Funding supporting complex transformation activities is based upon the preferred alternative in the Draft Complex Transformation Supplemental Programmatic Environmental Impact Statement (SPEIS) to the extent possible; these funding estimates will continue to evolve until a Record of Decision, informed by public comments, is made;

- The request for Weapons Dismantlement and Disposition activities increases by 26 percent to $64.7 million to continue to aggressively dismantle retired Cold War warheads;

- The Pit Manufacturing and Certification Campaign has been concluded and activities have been realigned to Directed Stockpile Work and the Science Campaign;

- Safeguards and Security charges for reimbursable work will be direct-funded by the program offices. Starting in FY 2009, there is no longer an offset in the program appropriations or the Departmental Administration account;

- The request for the Nuclear Weapons Incident Response program increases by 40 percent to $221.9 million, reflecting functional transfers to unify within this program the scientific, technology and engineering efforts of the nuclear security enterprise supporting counterterrorism;

- Significant growth (+22 percent) is provided in Cyber Security to continue urgent, high priority actions to address problem areas at the laboratories, and to continue systematic revitalization of the cyber security infrastructure; it is also proposed as a separate GPRA Unit starting in FY 2009;

- The Facilities and Infrastructure Recapitalization Program is focused on meeting its remaining endpoint performance targets and bringing its activities to conclusion in 2013; a new initiative for Transformation Disposition is proposed (below);

- Emphasis shifts in the Defense Nuclear Nonproliferation programs to reflect completion of Elimination of Weapons-Grade Plutonium Production efforts and increases in the Global Threat Reduction Initiative, and Research and Development;

- Emphasis shifts within the International Nuclear Materials Protection and Cooperation program to Sustainability and Second Line of Defense activities, including additional Megaports;

- The FY 2008 appropriations act shifted the funding for the Mixed Oxide Fuel Fabrication Facility (MOX) project to the Office of Nuclear Energy, and shifted funding for the Pit Disassembly and Conversion Facility/Waste Solidification Building projects to Defense Programs. The FY 2009 request also reflects these funding changes; and,

- Functional transfers include: 5 full-time equivalents and associated funding from Environmental Management supporting the Environmental Projects and Operations Long Term Stewardship programs; $3 million annually transferred from Weapons Activities/Readiness in Technical Base and Facilities to the Office of Legacy Management to cover the transfer of responsibility for the cost of pensions, medical coverage and life insurance for General Electric retirees from the Pinellas Plant; $4.73 million transferred internally from Defense Nuclear Nonproliferation to Nuclear Weapons Incident Response for the International Emergency Management and Cooperation activities, and, $52 million transferred internally from Defense Programs to Nuclear Weapons Incident Response for the Office of Nuclear Counterterrorism.

New Initiatives:

- Transformation Disposition is proposed as a separate new activity and separate GPRA Unit, and funding is requested at $77.4 million in 2009 to capitalize upon and redirect the program and project management expertise and proven performance in facility disposition built through the Facilities and Infrastructure Recapitalization Program. The Transformation Disposition program's goal will be to start to reduce the size of the nuclear weapons complex by eliminating the backlog of over 10 million square feet of excess NNSA facilities. This program supports the NNSA's complex transformation vision, and is separate from, but complementary to, the Environmental Management mission of legacy contaminated facilities disposition.

Significant Program Shifts

Complex Transformation

Transformation will be implemented through a set of coherent activities across all aspects of the nuclear weapons program. The transformation of physical assets and methods of operations for the Complex is required as a way of ensuring that the U.S. has the means to respond to all possible future challenges to our national security. This transformation is independent of whether that stockpile consists of legacy designs or Reliable Replacement Warhead (RRW) concept designs.

The NNSA relies on four implementing strategies to achieve complex transformation: (1) transform the nuclear stockpile in partnership with the DoD; (2) transform to a small but modernized, cost-effective nuclear security enterprise; (3) create a fully integrated and interdependent complex; and (4) drive the science and technology base essential for long-term national security. The future enterprise will be realized through a combination of ongoing and new activities that will lead to the elimination of expensive and unneeded redundancies and ensure improvements in efficiency. Missions, capabilities,

and special nuclear materials (SNM) will be consolidated reducing the footprint. The number of sites with quantities of SNM requiring costly security protection will be reduced from seven to five by 2012. Experimental facilities will be shared. As production centers are updated and refurbished and existing facilities are removed, the total footprint will be reduced significantly, going from greater than 35 million to less than 26 million square feet. In addition, weapons dismantlement will occur at a significantly faster pace.

Preferred Alternative: In conjunction with the Complex Transformation Supplemental Programmatic Environmental Impact Statement (SPEIS), a preferred alternative for the future nuclear weapons complex infrastructure has been developed. This preferred alternative identifies the major facilities proposed for the future in addition to consolidation of missions, capabilities, SNM, and facility square footage used in production, testing, and research and development. The FY 2009 budget includes funding to pursue a future weapons program consistent with the preferred alternative assuming that a Record of Decision is promulgated in 2008.

Funding for proposed new facility acquisitions, while eliminating unneeded existing buildings and structures, is a priority that must be addressed starting in FY 2009. The preferred alternative includes the following elements that are reflected in the budget submission:

- Category I & II quantities of SNM would be consolidated from seven to five of the sites in the Complex by 2012, with the footprint associated with these materials reduced significantly at the five remaining sites.

- Technical Area-55 at Los Alamos National Laboratory would be the center for plutonium research and development and production. The Chemistry and Metallurgy Research Replacement-Nuclear Facility would be built to be the only Plutonium surveillance and R&D facility in the future nuclear security enterprise. It would allow closure of the 50+ year old CMR facility at Los Alamos and would allow us to stop programmatic work with Category I and II quantities of plutonium at the Lawrence Livermore National Laboratory. Additionally, it would support production at TA-55 of 50 – 80 pits per year for the stockpile.

- Y-12 National Security Complex at Oak Ridge, TN, would remain the center for uranium R&D and production. The Highly Enriched Uranium Materials Facility would be completed and the proposed Uranium Processing Facility would be built. A consolidated manufacturing complex would be built to consolidate remaining Y-12 production operations that do not require high levels of security.

- Pantex Plant at Amarillo, TX, would remain the weapons assembly/disassembly center. Non-destructive surveillance would be consolidated at Pantex and SNM would be consolidated leading to the proposed elimination of the Zone 4 security area.

- The NNSA would cease operations at the Tonopah Test Range, NV, and instead would conduct flight tests at Department of Defense facilities.

- Major environmental testing would be consolidated at Sandia National Laboratories in NM and high-consequence testing would be consolidated at the Nevada Test Site.

- Tritium experimental operations would be consolidated at the Savannah River Site.

- Missions and capabilities across the Complex would be consolidated to facilitate elimination of numerous buildings and structures.

Defense Programs is continuing to refine its planning for Complex Transformation. The draft Preferred Alternative for Complex Transformation Supplemental Programmatic Environmental Impact Statement was released for public comment in January 2008.

Reliable Replacement Warhead Related Activities

The FY 2008 Consolidated Appropriations Act (P.L. 110-161) did not fund completion of the Phase 2A study of the Reliable Replacement Warhead that was intended to establish the feasibility of a safer, more secure warhead that would help to assure long-term confidence in the reliability of the nuclear weapons stockpile without nuclear testing. NNSA continues to believe that the warhead features characteristic of the RRW are the right ones for ensuring the future of our nation's nuclear deterrent, and the Congress specifically directed that the Administration continue related work in FY 2008 in two key NNSA areas:

- A new "Advanced Certification" campaign designed to address issues raised in the recent JASON's study of the feasibility of certifying RRW designs without nuclear testing.

- Work in the Enhanced Surety campaign "to increase the safety and security of weapons in the existing stockpile and develop new technologies for incorporation into potential future systems." This is fully consistent with efforts to apply state-of-the-art technology to enhance security and prevent unauthorized nuclear weapons use by terrorists, rogue nations or criminal organizations.

Also, the Congress appropriated $15M in the FY 2008 Defense Appropriations Bill for the U.S. Navy to carry out studies related to the integration of the RRW warhead with the Trident SLBM reentry system.

NNSA will follow the Congressional direction to initiate and fund these activities in FY 2008, and the FY 2009 Request will advance this overall strategy by requesting continuing funding for Advanced Certification and Enhanced Surety. The May 2008 report to the Congress, specified in the FY 2008 Consolidated Appropriations Act (P.L. 110-161), will provide specific options and plans for achieving the Advanced Certification goals.

The FY 2009 request also includes $10 million in Directed Stockpile Work, Reliable Replacement Warhead, to enable maturation of the design in order to address questions raised by the JASON review of RRW feasibility study activities. Design refinement is necessary to establish parameters for potential impact on certification. Without further design work, there is insufficient detail available to use this design to resolve certification questions raised by the JASONs review. This funding will also facilitate documenting the Phase 2A RRW work that has been completed through 2007, prior to the FY 2008 Consolidated Appropriations Act (P.L. 110-161), to support future administration decisions on options for our nuclear weapons stockpile. The Department of Defense and the Joint DoD-DOE Nuclear Weapons Council fully support continuing efforts to examine how the RRW concept can address issues of safety, security and long-term reliability of the nation's nuclear deterrent.

Materials Consolidation

The nuclear national security programs have now been operating for more than half a century, and with the end of the Cold War, significant quantities of plutonium and highly enriched uranium have become surplus to defense needs, both in the U. S. and Russia. Continued arms reductions efforts and accelerated dismantlement schedules are expected to result in increases in the stockpiles of these surplus, weapons-usable fissile materials. The U.S. seeks to aggressively reduce its holdings of these materials, and the Department of Energy is developing and implementing disposition paths for U. S. material.

A DOE-wide coordinating committee has spent the past several years studying the requirements and issues associated with consolidation and disposition of nuclear materials excess to national security requirements. The Nuclear Materials Disposition Consolidation Coordinating Committee supports the NNSA, and the Department's Office of Nuclear Energy, Office of Environmental Management, and Office of Science. The materials consolidation issue is particularly compelling for NNSA in its efforts to transform and reduce the size of the nuclear weapons complex infrastructure, and because of the high cost of securing quantities of these materials.

Therefore, in late FY 2007, NNSA decided to begin to integrate materials consolidation activities at NNSA sites under a single project, and initiate several urgent actions using available funding starting in FY 2008. While efforts to create a separate office and budget for these activities are still to be determined in the FY 2010-2014 budget cycle, the NNSA FY 2009 budget justification highlights specific materials consolidation activities in NNSA and the associated funding. This effort focuses on development of implementation plans to consolidate nuclear materials excess to NNSA's mission.

The initial scope of these activities focuses on "de-inventorying" Category I and II quantities of nuclear materials from several NNSA sites, paying for disposition of these materials as needed, and continuing ongoing efforts for disposition of inactive actinide materials at NNSA sites. In FY 2008, NNSA plans to spend about $23 million for the following activities: complete removal of Category I and II quantities of nuclear materials from the Sandia National Laboratories in New Mexico; safely store and begin preparations for processing of sodium debris removed from SNL and relocated to the Idaho National Laboratory; continue removal of Category I and II quantities of nuclear materials from the Lawrence Livermore National Laboratory in California, and continue consolidation and disposition of excess uranium and other nuclear materials from the Oak Ridge Y-12 Plant (Y-12) in Tennessee.

These activities will continue in FY 2009 at a similar level of effort, and they are highlighted in the budget justification for the Weapons Activities appropriation.

Mixed Oxide Fuel Fabrication Facility and Related Projects

The Mixed Oxide Fuel Fabrication Facility Project in South Carolina is a key component of the U.S. strategy for plutonium disposition. It is the centerpiece of a comprehensive approach for disposing of surplus weapons-usable plutonium by fabricating it into mixed-oxide (MOX) fuel for irradiation in existing nuclear reactors. This meets key national security and nonproliferation objectives by converting the plutonium into forms not readily usable for weapons and supports efforts to consolidate nuclear materials throughout the weapons complex.

In addition to its role in the disposition of excess nuclear materials at home, the U. S. views the MOX project as a key component of U. S. global nuclear nonproliferation efforts in which fissile material

disposition is the final step in a balanced nuclear nonproliferation strategy aimed at employing measures necessary to detect, secure, and dispose of dangerous nuclear material. In 2007, the U.S. and Russian governments agreed on a framework for a technically and financially credible Russian plutonium disposition program based on the irradiation of plutonium as MOX fuel in fast reactors. When implemented, it will enable the U.S. and Russia to meet their commitments under a 2000 agreement to dispose of a combined total of 68 metric tons of surplus weapon-grade plutonium—enough material for approximately 17,000 nuclear weapons.

The FY 2008 Consolidated Appropriations Act (P.L. 110-161) funds the MOX project in the Nuclear Energy program and funds the related Pit Disassembly and Conversion Facility/Waste Solidification Building project within Defense Programs. The Mixed Oxide Fuel Fabrication Facility project remains the cornerstone of the nation's nuclear nonproliferation efforts. In total, the funding commitment to DOE's nonproliferation activities is $1.853 billion in 2009.

DOE Nuclear Nonproliferation Activities

($ in Millions)

	FY 2007 Actual	FY 2008 Actual	FY 2009 Request	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
NNSA							
Defense Nuclear Nonproliferation	1,824.2	1,658.0	1,247.0	1,082.7	1,076.6	1,111.3	1,134.0
Pit Disassembly and Conversion	——[1]	68.7	119.0	243.1	323.1	317.4	319.9
Subtotal, NNSA	1,824.2	1,726.7	1,366.0	1,325.8	1,399.7	1,428.7	1,453.9
Nuclear Energy							
Mixed Oxide Fuel Fabrication Facility	——[1]	278.8[2]	487.0	450.7[3]	395.8[3]	482.2[3]	519.5[3]
Total, DOE Funding	**1,824.2**	**2,005.5**	**1,853.0**	**1,776.5**	**1,795.5**	**1,910.9**	**1,973.4**

[1] Funding included in NNSA/Defense Nuclear Nonproliferation.

[2] Does not include $115M in prior year balances moved with the Mixed Oxide Fuel Fabrication Facility in FY 2008.

[3]Out year amounts for the Mixed Oxide Fuel Fabrication Facility reflect the Total Project Cost estimates in the current Project Data Sheet.

The FY 2009 President's Request funds this activity in the Nuclear Energy Program; a formal transition plan has not yet been developed.

Nuclear Counterterrorism

Nuclear counterterrorism is an increasingly important focus for NNSA programs. Our core expertise in nuclear sciences is central to the national effort to prevent a nuclear or radiological terrorist attack. Programs throughout NNSA are making important contributions to this effort. In recognition of that fact, this budget request highlights the important role that these programs play in combating nuclear terrorism.

The NNSA programs have evolved since the 9/11 terrorist attacks and today weave together to play a crucial counterterrorism role in protecting the homeland. For example, the DOE and other agencies rely on the national laboratories' knowledge of nuclear weapons design to identify novel and unconventional nuclear threats; to support the design and evaluation of radiation detection systems; to design technologies to disarm a terrorist nuclear device; and, to evaluate safeguards and security of existing and future nuclear facilities.

The NNSA's nonproliferation programs continue to work to secure nuclear weapons and Weapons of Mass Destruction (WMD) materials in other countries, strengthen international nuclear safeguards and foreign export control capabilities, halt nuclear smuggling, and provide ground-based, air-based and space-based solutions to identify, locate and track WMD materials, processes and facilities. In addition to aiding in preventing the spread of nuclear weapons to hostile nation states, these activities also reduce the danger that terrorists could obtain WMD weapons, materials or technologies. Further, we work with other nations to develop emergency management programs and infrastructure to reduce the risk of nuclear and radiological events, and to mitigate the consequences of such an event. Working with other agencies, we are expanding the overseas detection and interception tripwires to find and stop nuclear materials in transit. Finally, our response teams provide the nation's last line of defense to search for and render safe a nuclear device, and to provide consequence management support in the event of an incident.

Across all of these areas, the NNSA contributes to a comprehensive, multi-layered defense of the nation against the nuclear terrorism threat.

NNSA Summary by Appropriation / GPRA Unit

	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Office of the Administrator							
Office of the Administrator	358,291	379,997	404,081	419,848	436,266	451,771	469,173
Congressionally Directed Projects	—	22,140	—	—	—	—	—
Total, Office of the Administrator	358,291	402,137	404,081	419,848	436,266	451,771	469,173
Weapons Activities							
Defense Programs							
Directed Stockpile Work	1,430,192	1,401,252	1,675,715	1,762,079	1,789,979	1,760,218	1,776,388
Science Campaign	267,758	287,624	323,070	309,091	295,192	296,662	299,902
Engineering Campaign	161,736	169,548	142,742	148,863	146,565	150,475	153,907
Inertial Confinement Fusion Ignition and High Yield Campaign	489,706	470,206	421,242	434,007	381,173	373,005	377,762
Advanced Simulation and Computing Campaign	611,253	574,537	561,742	526,373	510,808	514,405	520,645
Pit Manufacturing and Certification Campaign	242,392	213,831	—	—	—	—	—
Readiness Campaign	201,713	158,088	183,037	170,003	161,139	161,130	164,295
Readiness in Technical Base and Facilities	1,613,241	1,637,381	1,720,523	1,904,398	2,153,557	2,275,909	2,372,916
Secure Transportation Asset	209,537	211,523	221,072	249,555	261,543	268,134	269,325
Total, Defense Programs	5,227,528	5,123,990	5,249,143	5,504,369	5,699,956	5,799,938	5,935,140
Nuclear Weapons Incident Response	133,514	158,655	221,936	229,661	235,211	242,425	250,947
Facilities and Infrastructure Recapitalization Program	169,383	179,991	169,549	192,945	196,379	195,096	194,779
Environmental Projects and Operations	—	8,592	40,587	37,288	39,026	37,468	36,040
Transformation Disposition	—	—	77,391	89,457	88,589	88,008	87,863
Safeguards and Security							
Defense Nuclear Security	623,653	765,233	737,328	818,285	817,809	793,856	814,928
Cyber Security	104,505	100,287	122,511	113,690	120,874	130,121	140,621
Subtotal, Safeguards and Security	728,158	865,520	859,839	931,975	938,683	923,977	955,549
Congressionally Directed Projects	—	47,232	—	—	—	—	—
Use of Prior Year Balances	—	-86,514	-366	—	—	—	—
Total, Weapons Activities	6,258,583	6,297,466	6,618,079	6,985,695	7,197,844	7,286,912	7,460,318
Defense Nuclear Nonproliferation							
Nonproliferation and Verification Research and Development	265,197	387,196	275,091	318,620	334,182	343,397	351,098
Nonproliferation and International Security	128,911	149,993	140,467	151,052	158,711	171,108	175,368
International Nuclear Materials Protection and Cooperation	597,646	624,482	429,694	400,511	394,626	395,225	404,064
Elimination of Weapons-Grade Plutonium Production	231,152	179,940	141,299	24,507	—	—	—
Fissile Materials Disposition	470,062	66,235	41,774	37,691	27,985	28,435	26,000
Global Threat Reduction Initiative	131,234	193,225	219,641	150,299	161,074	173,172	177,452
International Nuclear Fuel Bank	—	49,545	—	—	—	—	—
Congressionally Directed Projects	—	7,380	—	—	—	—	—
Use of Prior Year Balances	—	—	-918	—	—	—	—
Total, Defense Nuclear Nonproliferation	1,824,202	1,657,996	1,247,048	1,082,680	1,076,578	1,111,337	1,133,982
Naval Reactors							
Naval Reactors	781,800	774,686	828,054	848,641	869,755	880,418	899,838
Total, Naval Reactors	781,800	774,686	828,054	848,641	869,755	880,418	899,838
Total, NNSA	9,222,876	9,132,285	9,097,262	9,336,864	9,580,443	9,730,438	9,963,311

NNSA Budget Summary by Program

The NNSA FY 2009 Request is $9.1 billion, essentially level with the FY 2008 appropriation. The FY 2009-2013 FYNSP will provide a program level of $47.7 billion.

Weapons Activities

The Weapons Activities appropriation funds five NNSA program organizations.

Defense Programs

The FY 2009 budget request for Defense Programs is $5.2 billion, an increase of 2.4 percent over the FY 2008 appropriation. Outyear considerations for this program are focused on the needs for transformation of the stockpile and the weapons complex infrastructure. The current outyear funding profile increases at greater than the rate of escalation in the near years due to requirements for major construction project funding.

Within the requested level, the NNSA will continue all programs to meet the immediate needs of the stockpile, stockpile surveillance, annual assessment, and Life Extension Programs. The request for Directed Stockpile Work (DSW) increases 19.6 percent, due mainly to the completion of the Pit Manufacturing and Certification Campaign that realigned over $200 million in pit-related work to DSW.

The FY 2009 budget request will continue Reliable Replacement Warhead-related activities. Within the Science Campaign, the Advanced Certification line will continue efforts begun in FY 2008 at the direction of the Congress to review, evaluate and implement key recommendations from the JASON's RRW study regarding approaches to establishing an accredited warhead certification plan, without nuclear testing, in an era where changes to nuclear components will occur due to aging. The required May 2008 report to the Congress will provide specific options and plans for achieving the Advanced Certification goals. The Enhanced Surety work will support evaluation of surety options for possible future systems, whether LEPs or RRW systems. Within Directed Stockpile Work, $10 million is requested to enable maturation of the RRW design to address questions raised by the JASON review of RRW feasibility study activities. Design refinement is necessary to establish parameters for potential impact on certification. Without further design work, there is insufficient detail available to use this design to resolve certification questions raised by the JASONs review. This funding will also facilitate documenting the Phase 2A RRW work that has been completed through 2007 (prior to the FY 2008 Consolidated Appropriations Act (P.L. 110-161)) to support future administration decisions on options for our nuclear weapons stockpile. The Department of Defense and the Joint DoD-DOE Nuclear Weapons Council fully support continuing efforts to examine how the RRW concept can address issues of safety, security and long-term reliability of the nation's nuclear deterrent.

The DSW request supports plans to increase the rate of warhead dismantlements, pursue complex-wide risk mitigation efforts, and expand the NNSA dismantlement infrastructure of people, processes, equipment, and tooling. The funding for the Pit Disassembly and Conversion Facility/Waste Solidification Building projects was also shifted to this activity in FY 2008 from Defense Nuclear Nonproliferation, and remains here in the FY 2009 Request.

The Campaign activities decrease by 13 percent, mainly attributable to the conclusion of the Pit Campaign. In FY 2007, the Pit Manufacturing and Certification Campaign successfully completed its multi-year goal of re-establishing a pit manufacturing capability with the production of 10 war-reserve

W88 pits. With the accomplishment of this goal, beginning in FY 2009, all Pit Manufacturing and Certification Campaign activities have been realigned to DSW and Science Campaigns. The Advanced Simulation and Computing campaign decreases slightly from the FY 2008 appropriation. The Inertial Confinement Fusion Ignition and High Yield Campaign is requested at $421 million to continue to refine requirements for the first ignition experiments in 2010. In addition, consistent with direction in the FY 2008 appropriation, a new Science Campaign, Advanced Certification, has been implemented to initiate expanded, independent peer review mechanisms to improve the weapons certification process.

The Readiness in Technical Base and Facilities increases about 5 percent over the FY 2008 appropriation, primarily in the Construction account. Construction projects increase 8 percent due to programmed changes in project baselines and completion of funding for the Highly Enriched Uranium Materials Facility. One new construction project start is requested for the Test Capabilities Revitalization at Sandia National Laboratories.

Secure Transportation Asset (STA) increases 4.5 percent. The STA plans to acquire a total of three transport category aircraft. One 737-type aircraft will be purchased each year in FY 2010, FY 2011, and FY 2012 to replace the aging aircraft.

Nuclear Weapons Incident Response/Emergency Operations

The Nuclear Weapons Incident Response (NWIR) program responds to and mitigates nuclear and radiological incidents worldwide as the United States (U.S.) government's primary capability for radiological and nuclear emergency response. The FY 2009 Request for these activities is $221.9 million, supporting the base programs and including $18.7 million to support continuing the Stabilization Implementation activities and $13 million for the National Technical Nuclear Forensics program. This request is a 40 percent increase, supporting an increased focus on nuclear counterterrorism and defeating improvised nuclear devices.

The Nuclear Weapons Incident Response program has six subprograms; five of these are homeland security-related. The FY 2009 request includes funding for the Office of International Emergency Management and Cooperation and the Office of Nuclear Counterterrorism. The emergency management functions were transferred to the organization from the Office of Defense Nuclear Nonproliferation in June 2007, and the nuclear counterterrorism design support was transferred from the Office of Defense Programs in December 2007.

Infrastructure and Environment

This organization is responsible for the Facilities and Infrastructure Recapitalization Program (FIRP), the new Transformation Disposition Program, and the Long-Term Stewardship for NNSA facilities that follows completion of remediation activities by the DOE Office of Environmental Management.

The FY 2009 request for the FIRP is $169.5 million, a decrease of $10.4 million or 5.8 percent from the FY 2008 appropriation. The funding level shows a decrease across the FYNSP, most of which is shifted to Transformation Disposition. The FIRP continues to prioritize and fund outyear legacy deferred maintenance reduction projects that significantly reduce the NNSA deferred maintenance backlog to acceptable levels and support both the Stockpile Stewardship Program mission and complex transformation. The program is scheduled to conclude in 2013.

The proposed new Transformation Disposition Program is a new GPRA Unit and is designed to eliminate half of the more than 10,000,000 gross square feet of excess facilities identified in the FY 2008 Ten-Year Site Plans. Project priorities will be developed in FY 2009, in line with transformation planning.

The Environmental Projects and Operations/Long-Term Stewardship program request is $40.6 million in FY 2009, an increase of $32 million over the FY 2008 appropriation. The five-year estimates for this program are driven by regulatory compliance requirements following the completion of legacy environmental cleanup. Because these activities are regulation-driven, NNSA will be evaluating the need for additional funding adjustments in FY 2008 to meet requirements. The large increase in 2009 is driven by the need for Long-Term Stewardship at two additional NNSA sites, Lawrence Livermore National Laboratory Site 300 and Pantex, and to support requirements in the outyears.

Defense Nuclear Security

The FY 2009 request for Defense Nuclear Security is $737.3 million to support the base program and the program's focus on sustaining the NNSA sites 2003 Design Basis Threat baseline operations and implementing the 2005 Design Basis Threat Policy upgrades. Starting in FY 2009, there is no longer an offset in this account or Departmental Administration for the security charges associated with reimbursable work. These activities will be fully funded by the programs with direct appropriations.

During FY 2009, the program will focus on eliminating or mitigating identified vulnerabilities across the weapons complex. Measures will include additional protective force training, acquiring updated weapons and support equipment, improving physical barrier systems and standoff distances, and reducing the number of locations with "targets of interest." Physical security systems will be upgraded and deployed to enhance detection and assessment, add delay and denial capabilities, and to improve perimeter defenses at several key sites. The Nevada Test Site will be compliant with the 2005 DBT in FY 2009. There are no new construction starts.

Defense Nuclear Security will partner with Defense Programs in the complex transformation process, to ensure seamless integration with operations and the security mission.

Cyber Security

The Cyber Security program will sustain the NNSA infrastructure and upgrade elements that will counter cyber threats from external and internal attacks using the latest available technologies.

The FY 2009 Request for Cyber Security is $122.5 million, an increase of 22 percent over the FY 2008 appropriation level. The Cyber Security increases are the next step in a major five-year effort focused on revitalization, certification, accreditation and training across the NNSA complex. Revitalization enables NNSA to respond to its highest priorities and to address current and future risks; certification and accreditation assure proper documentation of risks and justification of associated operations for systems at all sites; and, education and awareness provides training for federal and contractor personnel to meet expanding skill requirements of NNSA cyber security and information environments. Cyber Security is a separate GPRA unit starting in FY 2009.

Defense Nuclear Nonproliferation

The Defense Nuclear Nonproliferation program goal is to detect, prevent, and reverse the proliferation of Weapons of Mass Destruction (WMD). Our programs address the threat that hostile nations or terrorist groups may acquire weapons of mass destruction or weapons-usable material, dual-use production or technology, or WMD capabilities, by securing or eliminating vulnerable stockpiles of weapon-usable materials, technology, and expertise in Russia and other countries of concern.

The FY 2009 budget request for the Defense Nuclear Nonproliferation appropriation totals $1.247 billion. The appearance of a significant decrease is due to the final FY 2008 appropriations that added about $480 million in funding above the President's Request to programs in this account. In addition, the FY 2008 Consolidated Appropriations Act (P.L. 110-161) shifted the funding for the MOX project to DOE's Nuclear Energy Program and funding for the related Pit Disassembly and Conversion Facility/Waste Solidification Building (PDCF/WSB) project to the Weapons Account. This shift represents over $600 million in funding that would have been requested within the Defense Nuclear Nonproliferation appropriation in FY 2009. In the out years, the Defense Nuclear Nonproliferation appropriation budget projections remain relatively constant at about $1.1 billion; these out year estimates do not reflect funding for the MOX Project or the PDCF/WSB.

In FY 2009, the Elimination of Weapons Grade Plutonium Production program continues activities to complete two major projects in the Russian Federation by FY 2011. The decrease in this program's FY 2009 funding request is due to the ramp down of requirements to complete the Seversk Project, offset by an increase in construction activities for the Zheleznogorsk Project.

Funding in the International Nuclear Materials Protection and Cooperation FY 2009 request of $429.7 million provides for sustainability support to Russian warhead and material sites with completed MPC&A upgrades, MPC&A upgrades to areas/buildings agreed to after the Bratislava Summit and the acceleration of projects to assist the Russian Federation and other partner countries in establishing the necessary infrastructure to sustain effective MPC&A operations. In addition, the budget provides for the installation of radiation detection equipment at an additional 49 foreign sites in 14 countries and at 9 additional Megaports (increasing the number of completed ports to 32).

The FY 2009 request for Nonproliferation and International Security is $140.5 million, supporting the Next Generation Safeguards Initiative (NGSI), which aims to strengthen international safeguards and revitalize the U.S. technical base; and disablement, dismantlement, and verification of nuclear programs in North Korea. The request also funds activities to control the export of items and technology useful for WMD programs; continue an augmented export control cooperation program involving emerging suppliers and high-traffic transit states; improve multilateral export control guidelines; develop and implement policy in support of global nonproliferation regimes; provide the technical edge within the interagency process in the various interdiction activities; develop and implement transparency measures to ensure that nuclear materials are secure; and transition WMD scientific communities in high-risk nations.

The Nonproliferation and Verification R&D program is requested at $275.1 million to fund the development of next-generation nuclear detection technologies and methods to detect foreign nuclear materials and weapons production. It also funds the Global Burst Detector (GBD) and Space and Atmospheric Burst Reporting System (SABRS) satellite payloads for detecting and reporting nuclear detonations and supports a joint effort with the DOE Office of Science and the Department of Homeland

Security (DHS) to construct approximately 200,000 gross square feet of laboratories, offices, and facilities, known as the Physical Sciences Facility (PSF) at the Pacific Northwest National Laboratory.

The Fissile Materials Disposition program request for FY 2009 is $41.8 million. The program retains three principal elements: efforts to dispose of U.S. highly enriched uranium (HEU) declared surplus to defense needs primarily by down-blending it into low enriched uranium; technical analyses and support to negotiations among the United States, Russia, and the International Atomic Energy Agency (IAEA) on monitoring and inspection regimes required by a 2000 U.S.-Russia plutonium disposition agreement; and limited support for the early disposition of Russia's plutonium in that country's BN-600 reactor including U.S. technical support to oversee work in Russia for early disposition of Russian weapon-grade plutonium in fast reactors.

The FY 2009 Request for GTRI is $219.6 million, 14 percent above the FY 2008 appropriated level, and will fund: an additional 8 domestic and foreign reactor conversions for a cumulative total of 69 research reactors converted or shutdown; repatriation or disposal of an additional 695 kilograms of HEU fuel under the Russian-origin, U.S.-origin, and Gap removal efforts, for a cumulative total of 2,870 kilograms of HEU removed; removal of an additional 2,250 excess and unwanted sealed sources from locations in the United States for a cumulative total of 20,000 sources removed; and completion of protection upgrades at an additional 125 international sites, for a cumulative total of 915 high-priority radiological sites protected. The budget also shows a decrease due to the completion of the Kazakhstan Spent Fuel work in CY 2010, although funding for this program as a whole shows an increase through the FYNSP.

Naval Reactors

The NNSA continues to provide the United States Navy with safe, military effective nuclear propulsion plants and ensure their continued safe and reliable operation. The FY 2009 request for Naval Reactors of $828.1 million is an increase of 6.9 percent over the FY 2008 appropriation.

The outyear projections for the Naval Reactors appropriation total $3.5 billion. The trend through the five-year period remains relatively level and reflects a continuing achievement of the program's mission and performance measure milestones. However, adjustments to program priorities as highlighted below may result in a realignment of resources.

Nuclear Powered Surface Combatant: The Navy is in the process of defining its requirements and completing an Analysis of Alternatives (AoA) to support a potential anti-air warfare and ballistic missile mission focus. Recent Department of Navy and congressional findings and actions indicate that a nuclear-powered next-generation cruiser is a potential platform to deliver the mission, especially in light of rising fuel costs. The preferred approach for a nuclear powered cruiser would be to modify a single next-generation aircraft carrier propulsion plant (such as that planned for installation in the new GERALD R FORD class of carriers). If the nuclear propulsion option is selected, additional funding and aggressive actions will be required to complete the necessary design work to support procurement of long-lead time reactor plant components starting in FY 2009.

Next-Generation Submarine: The Navy is in the process of performing a study to assess the capabilities for a follow-on strategic weapon system to replace the TRIDENT Strategic Weapon System currently deployed on OHIO-class ballistic missile submarines. Per the Navy's 30-year shipbuilding plan, ship

construction for an Ohio-Class replacement is scheduled to begin in FY 2019. To support this schedule, funding for initial propulsion plant concept design efforts would be needed in FY 2010.

Dry Storage of Naval Spent Nuclear Fuel: Startup of dry storage operations began in late FY 2006 at the Naval Reactors Facility (NRF) in Idaho. This involves the packaging of spent nuclear fuel from wet to dry storage for ultimate shipment to a geological repository. As production tempos will steadily increase over the next several years in line with external agreements, demands for resources and facility improvements will follow. As a result, a commensurate shift in resources from Program laboratories to NRF and the Expended Core Facility (ECF) is expected. Further, as infrastructure related to spent-fuel processing is 50+ years old, NR is currently developing a mission need statement (CD-0) to retain this capability for the long term.

Office of the Administrator

This appropriation provides for all Federal NNSA staff in Headquarters and field locations except those supporting Naval Reactors and the Secure Transportation Asset couriers. The FY 2009 request is $404.1 million, essentially level with the FY 2008 appropriation.

Staffing is projected to increase by 95 to a total of 1,942 FTE in FY 2009, in support of new hires brought on-board at the end of FY 2008 and beginning of FY 2009 to meet increased requirements in Defense Nuclear Nonproliferation and Emergency Operations program goals as well as address NNSA workforce planning skill mix issues. Information Technology (IT) for the Federal staff is also included in this account, and the FY 2009 request is level with 2008.

The outyear budget for this account projects a 3.7 percent increase in FY 2010, followed by about 4 percent annually in the ensuing years. There remain significant challenges in managing this account due to the essentially uncontrollable impacts of escalation on payroll and benefits that consume over 70 percent of this account.

Site Estimates
(Dollars in Thousands)

Site	FY 2007 Op Plan	FY 2008 Omnibus	FY 2009				
			OA	WA	NN	NR	Total
Ames	357	488	—	—	353	—	353
ANL	24,888	29,967	—	2,188	28,599	—	30,787
BAPL	382,585	394,490	—	—	—	427,300	427,300
BNL	44,322	46,971	—	1,702	38,999	—	40,701
CH	34,461	34,468	—	36,122	—	—	36,122
GA	20,463	23,231	—	17,658	—	—	17,658
HQ	377,669	414,166	212,394	413,217	24,685	18,504	668,800
ID	2,501	2,878	—	1,237	1,230	—	2,467
INL	96,350	106,219	—	9,086	31,250	60,300	100,636
KAPL	301,587	288,214	—	—	—	302,800	302,800
KCP	427,689	400,737	—	477,669	2,341	—	480,010
KSO	6,040	6,267	6,951	—	—	—	6,951
LANL	1,544,495	1,578,742	—	1,371,916	173,330	—	1,545,246
LASO	17,665	17,674	20,601	—	—	—	20,601
LBNL	5,113	6,173	—	—	4,538	—	4,538
LEX	1,987	4,010	—	—	—	—	—
LLNL	1,195,320	1,091,146	—	950,805	85,275	—	1,036,080
LSO	21,214	17,591	19,605	—	—	—	19,605
NBL	743	1,055	—	200	810	—	1,010
NETL	4,438	1,850	—	1,892	—	—	1,892
NREL	705	820	—	—	768	—	768
NRL	21,000	23,105	—	1,500	—	—	1,500
NNSA Service Center	694,524	905,717	77,858	226,906	345,589	—	650,353
NTS	268,026	292,315	—	273,578	7,531	—	281,109
NVSO	126,181	107,877	19,347	99,859	1,284	—	120,490
OR	30	—	—	—	—	—	—
ORISE	14,450	12,896	—	13,528	758	—	14,286
ORNL	182,114	172,005	—	1,199	102,799	—	103,998
OSTI	162	81	—	136	—	—	136
Pittsburgh NR	9,731	10,357	—	—	—	10,905	10,905
PNNL	168,982	206,522	—	12,628	160,150	—	172,778
PSO	14,204	12,645	13,330	—	—	—	13,330
PX	475,773	510,919	—	511,391	353	—	511,744
RL	1,513	1,328	—	1,286	—	—	1,286
SNL	1,242,711	1,211,070	—	997,163	167,028	—	1,164,191
SR	295,683	13,949	—	15,732	12,065	—	27,797
SRS	257,597	243,383	—	252,881	19,171	—	272,052
SRSO	4,688	23,245	4,087	19,890	—	—	23,977
SSO	13,632	13,681	15,005	—	—	—	15,005
Schenectady NR	7,217	7,924	—	—	—	8,245	8,245
UR/LLE	46,399	60,480	—	58,302	—	—	58,302
Y-12	861,814	909,047	—	842,660	16,177	—	858,837
YSO	38,853	47,096	14,903	6,114	22,883	—	43,900
Adjustments	-33,000	-120,514	—	-366	-918	—	-1,284
Grand Total	9,222,876	9,132,285	404,081	6,618,079	1,247,048	828,054	9,097,262

Indirect Costs and Other Items of Interest

Institutional General Plant Projects

Institutional General Plant Projects (IGPP) provide for minor new construction of a general institutional nature at multi-program sites, funded out of Management and Operating Contractor indirect funds. IGPPs benefit multi-program users (e.g., NNSA and Office of Science) at a site. The following are planned IGPP funding projections:

(dollars in millions)

	FY 2007	FY 2008	FY 2009	$ Change	% Change
Los Alamos National Laboratory	7.6	0.4	10.9	10.5	2725%
Lawrence Livermore National Laboratory	9.5	4.6	10.8	6.2	135%
Sandia National Laboratories	7.3	9.8	2.6	-7.2	-73.50%
Total Site IGPP	**24.4**	**14.8**	**24.3**	**9.5**	**64.10%**

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

In FY 2009, examples of NNSA approved projects for LANL, SNL and LLNL include:

- LANL – Priority projects include upgrades to the Diamond Drive and Eniwetock Intersection and the TA-54 Intersection.
- LLNL – Priority projects are the Seismic Building Upgrades to Building 511, and the LGS-37 Switchgear Upgrades.
- SNL – IGPP efforts will focus on the construction of an access road to Building 894 Parking Lots and Re-roofing of Building C912.

Facilities Maintenance and Repair

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

Indirect-Funded Maintenance and Repair [a,]

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
Bettis Atomic Power Laboratory	5,934	6,035	6,194
Kansas City Plant	9,410	9,350	9,569
Kesselring Site Operations	2,900	2,784	2,739
Knolls Atomic Power Laboratory	7,514	7,728	8,194
Lawrence Livermore National Laboratory	91,248	92,812	96,572
Los Alamos National Laboratory	48,387	47,420	46,238
Naval Reactors Facility	333	490	475
Nevada Test Site	25,316	44,311	50,605
Pantex Plant	0	0	0
Sandia National Laboratories	74,659	83,698	84,370
Savannah River Site	3,334	3,979	1,841
Y-12 National Security Complex	0	0	0
Total, Indirect-Funded Maintenance and Repair	**269,035**	**298,607**	**306,797**

Outyear Indirect-Funded Maintenance and Repair [a]

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
Bettis Atomic Power Laboratory	5,977	6,032	6,115	6,119
Kansas City Plant	9,809	10,054	9,073	9,390
Kesselring Site Operations	2,531	2,532	2,820	2,848
Knolls Atomic Power Laboratory	8,716	9,011	9,123	8,959
Lawrence Livermore National Laboratory	98,793	100,925	103,925	105,359
Los Alamos National Laboratory	46,238	46,238	46,238	46,238
Naval Reactors Facility	521	459	451	495
Nevada Test Site	51,769	52,960	54,178	55,424
Pantex Plant	0	0	0	0
Sandia National Laboratories	83,149	81,248	84,928	84,710
Savannah River Site	1,890	1,941	1,994	2,047
Y-12 National Security Complex	0	0	0	0
Total, Indirect-Funded Maintenance and Repair	**309,393**	**311,400**	**318,845**	**321,589**

[a] All other FY funding profiles are estimates based on FY 2007 Ten-Year Site Plans (TYSPs) and are consistent with outyear FYNSP guidance.

Direct-Funded Maintenance and Repair [a,]

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
Bettis Atomic Power Laboratory	0	0	0
Kansas City Plant	24,762	24,308	22,329
Kesselring Site Operations	3,628	3,626	4,114
Knolls Atomic Power Laboratory	692	758	684
Lawrence Livermore National Laboratory	3,171	3,238	3,425
Los Alamos National Laboratory	46,446	45,517	41,908
Naval Reactors Facility	6,318	9,305	9,030
Nevada Test Site	13,824	13,688	20,120
Pantex Plant	33,000	35,157	45,255
Sandia National Laboratories	5,808	5,260	5,478
Savannah River Site	19,345	21,959	26,697
Y-12 National Security Complex	49,658	52,426	53,632
Total, Direct-Funded Maintenance and Repair	**206,652**	**215,242**	**232,672**

Outyear Direct-Funded Maintenance and Repair

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
Bettis Atomic Power Laboratory	0	0	0	0
Kansas City Plant	22,887	23,459	24,045	21,169
Kesselring Site Operations	4,361	4,482	4,893	4,568
Knolls Atomic Power Laboratory	685	677	723	760
Lawrence Livermore National Laboratory	3,504	3,585	3,667	3,752
Los Alamos National Laboratory	41,908	41,908	41,908	41,908
Naval Reactors Facility	9,896	8,713	8,564	9,411
Nevada Test Site	20,623	21,021	21,187	21,731
Pantex Plant	46,296	47,361	48,450	49,565
Sandia National Laboratories	4,846	6,352	5,488	4,493
Savannah River Site	27,418	28,158	28,919	26,699
Y-12 National Security Complex	54,865	56,127	57,418	58,738
Total, Direct-Funded Maintenance and Repair	**237,289**	**241,843**	**245,262**	**242,794**

[a] All other FY funding profiles are estimates based on FY 2007 Ten-Year Site Plans (TYSPs) and are consistent with outyear FYNSP guidance.

Direct-Funded Deferred Maintenance Backlog Reduction [a,b,c]

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
Kansas City Plant	2,000	0	0
Lawrence Livermore National Laboratory	31,839	30,354	19,316
Los Alamos National Laboratory	52,460	51,965	31,123
Nevada Test Site	25,147	17,007	5,553
Pantex Plant	26,405	35,110	17,586
Sandia National Laboratories	16,439	15,986	6,022
Savannah River Site	0	0	0
Y-12 National Security Complex	47,520	30,914	4,455
Total, Direct-Funded Deferred Maintenance Backlog Reduction	**201,810**	**181,336**	**84,055**

Outyear Direct-Funded Deferred Maintenance Backlog Reduction [a,b,c]

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
Kansas City Plant	0	0	0	0
Lawrence Livermore National Laboratory	22,387	23,061	23,061	23,061
Los Alamos National Laboratory	36,071	37,157	37,157	37,157
Nevada Test Site	15,708	16,181	16,181	16,181
Pantex Plant	25,018	25,771	25,771	25,771
Sandia National Laboratories	10,863	21,516	21,516	21,516
Savannah River Site	0	0	0	0
Y-12 National Security Complex	50,299	51,813	51,813	51,813
Total, Direct-Funded Deferred Maintenance Backlog Reduction	**160,346**	**175,499**	**175,499**	**175,499**

[a] FY 2009 FIRP Recapitalization and Planning Operations and Maintenance is shown as Direct Funded Deferred Maintenance Backlog Reduction (FIRP).

[b] Total excludes FIRP Line Items, FIRP Disposition, Roof Asset Management Program (RAMP) or other possible sources of repair and/or deferred maintenance funding. Excludes corporate facilities management and administrative activities such as FIMS, CAIS, FFC, DCAA, and E-gov.

[c] Outyear funding profiles are consistent with outyear FYNSP guidance.

Total Maintenance and Repair Dollars

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
Bettis Atomic Power Laboratory	5,934	6,035	6,194
Kansas City Plant	36,172	33,658	31,898
Kesselring Site Operations	6,528	6,410	6,853
Knolls Atomic Power Laboratory	8,206	8,486	8,878
Lawrence Livermore National Laboratory	126,258	126,404	119,313
Los Alamos National Laboratory	147,293	144,902	119,269
Naval Research Laboratory	6,651	9,795	9,505
Nevada Test Site	64,287	75,006	76,278
Pantex Plant	59,405	70,267	62,841
Sandia National Laboratories	96,906	104,944	95,870
Savannah River Site	22,679	25,938	28,538
Y-12 National Security Complex	97,178	83,340	58,087
Total, Maintenance and Repair Dollars	**677,497**	**695,185**	**623,524**

Total Outyear Maintenance and Repair Dollars

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
Bettis Atomic Power Laboratory	5,977	6,032	6,115	6,119
Kansas City Plant	32,696	33,513	33,118	30,559
Kesselring Site Operations	6,892	7,014	7,713	7,416
Knolls Atomic Power Laboratory	9,401	9,688	9,846	9,719
Lawrence Livermore National Laboratory	124,684	127,571	130,653	132,172
Los Alamos National Laboratory	124,217	125,303	125,303	125,303
Naval Research Laboratory	10,417	9,172	9,015	9,906
Nevada Test Site	88,100	90,162	91,546	93,336
Pantex Plant	71,314	73,132	74,221	75,336
Sandia National Laboratories	98,858	109,116	111,932	110,719
Savannah River Site	29,308	30,099	30,913	31,746
Y-12 National Security Complex	105,164	107,940	109,231	110,551
Total, Outyear Maintenance and Repair Dollars	**707,028**	**728,742**	**739,606**	**742,882**

In addition to the above, other costs such as line items, expense funded projects, and General Plant Projects can be attributed to Maintenance activities. However, these dollars have not been captured.

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, [$405,987,000]*$404,081,000,* to remain available until expended. *(Energy and Water Development and Related Agencies Appropriation Act, 2008.)*

Explanation of Change

The FY 2009 Request supports salaries and benefits escalation and 95 additional full time equivalents to meet increased requirements in Defense Nuclear Nonproliferation and Emergency Operations program goals as well as address NNSA workforce planning skill mix issues. The end-state staffing level is planned by early FY 2009 and maintained through the outyear period.

Office of the Administrator
National Nuclear Security Administration

Overview

Appropriation Summary by Program

(dollars in thousands)

	FY 2007 Current Appropriation	FY 2008 Original Appropriation	FY 2008 Adjustments	FY 2008 Current Appropriation	FY 2009 Request	$ Change
Office of the Administrator						
Office of the Administrator	358,291[a]	383,487	-3,490	379,997	404,081	+24,084
Congressional Directed Projects	0	22,500	-360	22,140	0	-22,140
Total, Office of the Administrator	358,291	405,987	-3,850[b]	402,137	404,081	+1,944

Public Law Authorization:
FY 2008 Consolidated Appropriations Act (P.L. 110-161)
National Nuclear Security Administration Act, (P.L. 106-65), as amended

Outyear Appropriation Summary

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
Office of the Administrator	419,848	436,266	451,771	469,173

Mission
The Office of the Administrator creates a well-managed, inclusive, responsive, and accountable organization through the strategic management of human capital; enhanced cost-effective utilization of information technology; and greater integration of budget and performance data.

Benefits
The Office of the Administrator provides the Federal personnel and resources necessary to plan, manage, and oversee the operation of the National Nuclear Security Administration (NNSA). The Nation benefits from having a highly educated and skilled cadre of Federal managers overseeing the operations of the defense mission activities and performing many specialized duties including leading Emergency Response teams and safeguards and security oversight. The Nation also benefits from

[a] Reflects the Congressionally approved appropriation transfer of $17,000,000 (07-D-04) from a source within the Weapons Activities appropriation and $1,000,000 from the FY 2007 supplemental in support of the Defense Nuclear Nonproliferation program.

[b] Reflects a rescission of $3,850,000 as cited in the FY 2008 Consolidated Appropriations Act (P.L. 110-161).

rigorous program management standards in the Program Assessment Rating Tool (PART), for the most efficient and cost-effective deployment of Federally-funded management resources.

Strategic Theme and Goals
The Department's Strategic Plan identifies five strategic themes (one each for defense, energy, science, environment, and management aspects of the mission) plus strategic goals that tie to the strategic themes. The Office of the Administrator appropriation supports the following strategic goals:

Strategic Theme, Nuclear Security: Ensuring America's Nuclear Security.

Strategic Goal 2.1, Nuclear Deterrent: Transform the Nation's nuclear weapons stockpile and supporting infrastructure to be more responsive to the threats of the 21st Century.

Strategic Goal 2.2, Weapons of Mass Destruction: Prevent the acquisition of nuclear and radiological materials for use in weapons of mass destruction and in other acts of terrorism.

Contribution to Strategic Goals 2.1 and 2.2
The Office of the Administrator (GPRA Unit Program Number 2.0.25.00), contributes to the Strategic Goals by providing the Federal personnel and resources necessary to plan, manage, and oversee the operation of the National Nuclear Security Administration's programs designed to meet these goals.

Funding by Strategic Goal

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
Strategic Goal 2.1, Nuclear Deterrent	300,219	340,321	341,314
Strategic Goal 2.2, Weapons of Mass Destruction	58,072	61,816	62,767
Total, Office of the Administrator	358,291	402,137	404,081

Outyear Funding by Strategic Goal

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
Strategic Goal 2.1, Nuclear Deterrent	354,835	368,917	382,234	397,115
Strategic Goal 2.2, Weapons of Mass Destruction	65,013	67,349	69,537	72,058
Total, Office of the Administrator	419,848	436,266	451,771	469,173

Annual Performance Results and Targets

(R = Results; T = Targets)

Performance Indicators	FY 2006 Results	FY 2007 Results	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Endpoint Target
Strategic Goal 2.1 (Nuclear Deterrent) GPRA Unit Program Goal 2.0.25.00, Office of the Administrator									
Annual average NNSA Program score on the OMB Program Assessment Rating Tool (PART) assessment indicating progress in budget performance integration and results (Efficiency)	R : 82%[a] T: 80%	R : 84.3% [a] T: 85%	T: 85%	T: 85%	T: 85%	T: 85%	T: 85%	T: 85%	By 2007, increase annual average PART scores to 85%.

[a] Prior to FY 2008, the cumulative average NNSA PART score was used.

Means and Strategies

The Office of the Administrator Program will use various means and strategies including collaborative activities to achieve its goals. The NNSA is working with the DOE to adopt enhanced business systems to make sure that we are excellent stewards of U.S. national nuclear security. The NNSA has implemented a disciplined planning, programming, and budgeting process to assure taxpayers that these programs are integrated and cost effective. The program is also implementing information and acquisition management tools and practices for improved job performance and efficiency. The NNSA will use creative personnel practices to ensure the best talent is recruited, retained, and rewarded, and all employees are accountable to the NNSA Administrator for performance in achieving their elements of the NNSA's mission.

The Office of the Administrator budget is comprised of 72 percent Salaries and Benefits for NNSA Federal staff. The remaining 28 percent includes several major efforts with largely fixed costs in the areas of Information Technology, Space and Occupancy, and support for the International Offices. A small percentage of discretionary funds are spent for Travel, Training, and Support Services.

Validation and Verification

To validate and verify program performance, the NNSA will conduct various internal and external reviews and audits. The NNSA's programmatic activities are subject to continuing review by the Congress, the Government Accountability Office, the Department's Inspector General, the National Security Council, the Defense Nuclear Facilities Safety Board, the Department's Office of Engineering and Construction Management, and the Department's Office of Independent Oversight and Performance Assurance. Each year, numerous external independent reviews are conducted of selected projects. Additionally, NNSA Headquarters senior management and field managers conduct frequent, in-depth reviews of cost, schedule, and scope to ensure projects are on-track and within budget.

The NNSA has established a comprehensive validation and verification process as part of its Planning, Programming, Budgeting and Evaluation (PPBE) system. Long-term performance goals are established/validated during the Planning Phase and linked in a performance cascade to annual targets and detailed technical milestones. During the Programming Phase, budget and resources trade-offs and decisions are evaluated based on the impact to annual and long-term performance measures. These NNSA decisions are documented and used to develop the budget requests during the Budgeting Phase. Program and financial performance for each measure is monitored and progress verified during the Execution and Evaluation Phase.

NNSA validation and verification activities during the PPBE Execution and Evaluation Phase include a set of tiered performance reviews to examine program management and corporate performance against long-term goals. This set of reviews includes: (1) the Office of Management and Budget's (OMB) Program Assessment Rating Tool (PART); (2) NNSA Administrator Program Reviews; (3) the NNSA Mid-Year Finance and Performance Review; (4) quarterly reporting of progress through the Department's JOULE performance tracking system; (5) Program Management Self Assessment (PMSA) reporting; and (6) the NNSA Administrator's Annual Performance Report.

The NNSA Administrator reviews each NNSA program at least annually during the NNSA Administrator Reviews. These reviews involve all members of the NNSA management council to ensure progress and recommendations are fully integrated for corporate improvement. The focus of these reviews is to verify and validate that NNSA programs are on track to meet their long-term goals and annual targets.

The results of these reviews are reported quarterly in the Department's JOULE performance tracking system and PMSA reporting, and annually in the NNSA Administrator's Annual Performance Report and the DOE Performance Accountability Report (PAR). These documents help to measure the progress that NNSA programs are making toward achieving both annual targets and long-term goals. These summary level documents help senior managers verify and validate progress toward NNSA and Departmental commitments listed in the budget.

Significant Program Shifts

- Staffing increases in FY 2009 by 95 full time equivalents (FTEs), from 1,847 to 1,942 in support of new hires brought on-board at the end of FY 2008 and beginning of FY 2009 to meet increased requirements in Defense Nuclear Nonproliferation and Emergency Operations program goals as well as address NNSA workforce planning skill mix issues. The end-state staffing level is planned by early FY 2009 and maintained through the outyear period.

- The training budget increased significantly from FY 2005/FY 2006 levels, meeting NNSA's goal of doubling the training budget for NNSA Federal staff by FY 2008/FY 2009.

- Space and Occupancy costs experience normal growth combined with the effect of moving toward the policy of full cost recovery for office space occupied by NNSA Federal staff.

- Beginning in FY 2009, there is a functional transfer of 5 FTEs for Long-term Stewardship (LTS) at completed NNSA sites, which is included within the 95 FTE increase. The FTEs are associated with activities at sites that will complete cleanup in FY 2008, Pantex (1 FTE) and Lawrence Livermore Site 300 (4 FTEs), with the transfer of LTS responsibility to NNSA in FY 2009. (FY 2009: +$879,000).

- Beginning in FY 2009, there is a functional transfer within the Weapons Activities Appropriation. The Nuclear Counterterrorism Design Support Program will be transferred from Defense Programs to the Emergency Operations Program to consolidate the emergency mission, functions, and authorities. Program Direction allocations will be internally adjusted accordingly.

- The FY 2008 Consolidated Appropriations Act (P.L. 110-161), authorizes and funds the Mixed Oxide Fuel (MOX) Fabrication Facility in the Nuclear Energy Appropriation. Due to this provision, the FY 2009 Congressional Submission transfers $5 million from the Office of the Administrator Appropriation to the Nuclear Energy Appropriation to support 12 FTEs.

Five Year Priorities and Assumptions

- The Five Year projections for the Office of the Administrator account total $2,181,139,000 (FY 2009 through FY 2013). The trend for the account through the five-year period is increasing consistent with approved escalation, and reflects steady National Nuclear Security Administration (NNSA) Federal staff levels.

Historically Black Colleges and Universities (HBCU) Support

A research and education partnership program with the HBCUs and the Massie Chairs of Excellence was initiated by the Congress through Congressionally directed projects in the Office of the Administrator appropriation in FY 2005. The NNSA has established an effective program to target

national security research opportunities for these institutions to increase their participation in national security-related research and to train and recruit HBCU graduates for employment within the NNSA. The NNSA goal is a stable $10 million annual effort. However, the FY 2008 Consolidated Appropriations Act (P.L. 110-161), included $22.1 million in congressionally directed projects in support of the HBCU programs within the Office of the Administrator account. In FY 2009, the Office of the Administrator appropriation will provide funding of $3.6 million to support HBCU activities. Additionally, the Weapons Activities appropriation will provide up to $6 million; the Defense Nuclear Nonproliferation appropriation will provide up to $3 million; and the Naval Reactors program will fund up to $1 million of HBCU efforts in FY 2009 in multiple research areas directly supporting program activities.

Office of the Administrator

Full Time Equivalents (FTEs)

	Actual FY 2007	Projected FY 2008	FY 2008 Change	Requested FY 2009	FY 2009 Change
Office of the Administrator					
Headquarters					
Office of the Administrator	71	71	-	71	-
Defense Programs	173	180	7	189	9
Defense Nuclear Nonproliferation	229	237	8	249	12
Emergency Operations	80	90	10	90	-
Infrastructure and Environment	28	31	3	31	-
Management and Administration	88	90	2	90	-
Defense Nuclear Security	24	26	2	29	3
Future Leaders Program	53	54	1	57	3
Subtotal, Headquarters	*746*	779	*33*	*806*	*27*
NNSA Service Center	433	443	10	466	23
Livermore Site Office	95	98	3	107	9
Los Alamos Site Office	102	105	3	116	11
Sandia Site Office	83	83	-	92	9
Nevada Site Office	93	98	5	109	11
Pantex Site Office	83	83	-	86	3
Y-12 Site Office	83	84	1	86	2
Kansas City Site Office	44	44	-	49	5
Savannah River Site Office	27	30	3	25	(5)
Total, Office of the Administrator	**1,789**	**1,847**	**58**	**1,942**	**95**

Office of the Administrator

Funding by Site

(dollars in thousands)

	FY 2007 Current Appropriation	FY 2008 Current Appropriation	FY 2009 Request	$ Change	% Change
NNSA Office of the Administrator					
Office of the Administrator					
Headquarters	178,838	203,472	212,394	+8,922	+4.4%
NNSA Service Center	76,001	71,794	77,858	+6,064	+8.4%
Livermore Site Office	17,666	17,591	19,605	+2,014	+11.4%
Los Alamos Site Office	16,825	17,674	20,601	+2,927	+16.6%
Sandia Site Office	13,632	13,681	15,005	+1,324	+9.7%
Nevada Site Office	17,780	18,079	19,347	+1,268	+7.0%
Pantex Site Office	12,850	12,645	13,330	+685	+5.4%
Y-12 Site Office	13,971	14,084	14,903	+819	+5.8%
Kansas City Site Office	6,040	6,267	6,951	+684	+10.9%
Savannah River Site Office	4,688	4,710	4,087	-623	-13.2%
Total, Office of the Administrator	**358,291**	**379,997**	**404,081**	**+24,084**	**+6.3%**
Congressionally Directed Projects					
NNSA Service Center	-	22,140	-	(22,140)	-100.0%
Total, Congressionally Directed Projects	-	**22,140**	-	**(22,140)**	-100.0%
Total, NNSA Office of the Administrator	**358,291**	**402,137**	**404,081**	**+1,944**	+0.5%

Office of the Administrator

Funding by Object Class

(dollars in thousands)

	FY 2007 Current Appropriation	FY 2008 Current Appropriation	FY 2009 Request	$ Change	% Change
NNSA Office of the Administrator					
Office of the Administrator					
Salaries and Benefits	254,320	263,100	289,314	+26,214	+10.0%
Travel	12,716	14,100	13,100	-1,000	-7.1%
Support Services	26,976	24,491	23,491	-1,000	-4.1%
Other Related Expenses					
Space and Occupancy Costs	26,798	39,996	38,996	-1,000	-2.5%
Information Technology	27,715	24,949	24,949	+0	+0.0%
Other Related Expenses	7,864	10,327	11,197	+870	+8.4%
Training	1,902	3,034	3,034	+0	+0.0%
Subtotal, Other Related Expenses	64,279	78,306	78,176	-130	-0.2%
Total, Office of the Administrator	**358,291**	**379,997**	**404,081**	**+24,084**	**+6.3%**
Congressionally Directed Projects					
Other Related Expenses	-	22,140	-	(22,140)	-100.0%
Total, Congressionally Directed Projects	-	**22,140**	-	**(22,140)**	-100.0%
Total, NNSA Office of the Administrator	**358,291**	**402,137**	**404,081**	**+1,944**	+0.5%

Detailed Justification

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
Salaries and Benefits	**254,320**	**263,100**	**289,314**

Provides support for the National Nuclear Security Administration (NNSA) Federal staff (1,942 FTEs in FY 2009), including annual cost of living adjustments, base salary increases, promotions, severance costs, performance awards, health and retirement benefits, workman's compensation, and other payroll adjustments (including NNSA's pay for performance pilot). The request also supports the international offices, including Foreign Service Nationals.

FY 2009 continues to provide Salaries and Benefits funding to support the Future Leaders Program (the fourth class of NNSA interns is planned to start in the 4th quarter of FY 2008). The Future Leaders Program supports the interns for two years: during this time they are not counted against a site's managed staffing targets. After the two years, the interns assume a position within the staffing targets at the receiving locations.

Salaries consume approximately 80 percent of the estimate, leaving about 20 percent for benefits.

Travel	**12,716**	**14,100**	**13,100**

Supports domestic and foreign travel necessary to conduct NNSA business. Domestic travel provides management oversight, public outreach, and national security assistance and interface with the Site Offices, the Service Center, Headquarters, the laboratories and plants, and local governments. Domestic travel reflects efficiencies resulting from NNSA efforts to constrain travel expenses by increasing utilization of the existing video teleconferencing capabilities and reducing the number of employees on instances where travel is absolutely mission essential.

International travel is increasing with the growth of the Defense Nuclear Nonproliferation mission; it is a key element of the nonproliferation work with international agencies and the Former Soviet Union republics. Defense Nuclear Nonproliferation travel accounts for 31 percent of the total travel request.

Support Services	**26,976**	**24,491**	**23,491**

Provides technical support for highly specialized analytical expertise required to address critical technical program issues in nonproliferation and national security; including areas of security, facilities representatives, ES&H, and project management (FY 2009 $9,186,192).

Administrative support includes the operation of mailrooms and maintenance of various databases in addition to clerical support (FY 2009 $12,954,801).

Funding request provides management support for studies and review of NNSA corporate policies and procedures concerning management operations and planning (FY 2009 $1,350,247).

Any escalation cost increases or new contract requirements will be offset by reductions to the burn rate of existing tasks and/or the elimination of other tasks.

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
Other Related Expenses	**64,279**	**78,306**	**78,176**

Provides Information Technology (IT) support for the NNSA Federal staff, including network services, maintenance and equipment; help desk support; and user equipment and software, including support for Department-wide systems such as the financial information reporting systems.

The IT request for FY 2009 is $24,948,855 and provides minimal support for responding to deferred activities such as desktop and network equipment refresh, application consolidation; Energy Enterprise Solutions Service (EES) payments to the Department, and replacing sunset technology. Also included is support for implementation of NNSA's capital planning and acquisition management programs associated with IT investments at NNSA Management and Operating facilities.

Supports $38,996,349 in Space and Occupancy costs for Headquarters and the field including the NNSA contribution to the Working Capital Fund and overall operations and maintenance of both rented and Federally owned space. The FY 2009 allocation for space and occupancy costs is comprised of the following areas and associated funding estimates:

- Rental payments $15,627,085
- Facilities and maintenance $7,176,020
- Utilities $7,233,815
- Office space – full cost recovery $2,426,656
- Internal Control $1,792,000
- I-MANAGE, Standard Accounting and Reporting System (STARS) $2,435,000
- Supplies and materials $1,248,851
- Equipment maintenance $727,583
- Printing and production $329,339

A component of the Space and Occupancy funding level is the Working Capital Fund (WCF) located within Headquarters. The WCF provides a framework for managing certain common administrative services within the Department. An underlying goal is to give program office customers the opportunity, incentive, and information to make cost-effective decisions regarding their use of such services. The following table outlines the specific funding levels within the Space and Occupancy category for WCF by Business Lines. Beginning in FY 2009, the following items are added to the WCF for a total of $3,161,000: Forrestal Safe Havens, Downtown/Germantown Shuttle bus, Logistics Support services contract, courier/messenger service, STRIPEs Operations, On-line learning Center and STARS.

(dollars in thousands)

FY 2007	FY 2008	FY 2009

(dollars in thousands)

	FY 2007 Current Appropriation	FY 2008 Current Appropriation	FY 2009 Request
Supplies	540	527	550
Mail Services	278	451	466
Copying Service	308	340	256
Printing and Graphics	214	346	277
Building Occupancy	13,219	13,796	15,841
Phone Service	1,416	1,636	2,098
Networking	1,190	1,228	1,445
Procurement Management	113	186	186
Payroll and Personnel	938	998	998
Corporate Training Services	43	158	428
Project Management	198	198	220
I-MANAGE	1,195	1,256	2,435
Internal Control	1,636	1,953	1,792
Total, WCF at HQ	**21,288**	**23,073**	**26,992**

Provides $3,288,013 in FY 2009 for operational costs associated with the international offices in Moscow, Vienna, Tokyo, Kiev, and Beijing; all critical to executing the Defense Nuclear Nonproliferation programs. The international office funding supports full operation of the Beijing Office, State Department security cost sharing charges, and the State Department's international cooperative administrative support charges.

Supports necessary training and skills maintenance of the NNSA Federal staff of $3,033,818. The FY 2009 training budget meets the NNSA goal of doubling the training budget from FY 2005/FY 2006 levels.

FY 2009 supports $3,600,000 in continuing funding for the NNSA's partnership with the Historically Black Colleges and Universities (HBCU) and the Massie Chairs of Excellence Program.

Provides $3,125,797 in support of non-payroll funding for Permanent Change of Station (PCS) moves for Federal personnel.

Supports $1,018,025 in funding for activities required for NNSA's Federal personnel, including minor procurements; the National Archives and Records Administration (NARA); the Diversity Partnership program; Small Business Administration Certification and Training; and other services and miscellaneous activities.

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
Supports the Defense Contract Audit Agency (DCAA) audit assessment of $153,000.			
Provides $12,000 for official reception and representation expenses for NNSA activities.			
Total, Office of the Administrator	**358,291**	**379,997**	**404,081**

Explanation of Funding Changes

	FY 2009 vs. FY 2008 ($000)
▪ **Salary and Benefits**	
Reflects an increase to support 95 additional FTEs (+$14.2 million) and projected cost of living adjustments; benefit escalation; promotions and within-grade increases; excepted service increases; and the implementation of the NNSA pay for performance pilot for general schedule employees (+12.0 million).	+26,214
▪ **Travel**	
Reflects a decrease due to efficiencies resulting from NNSA efforts to constrain travel expenses by increasing utilization of the existing video teleconferencing capabilities and reducing the number of employees on instances where travel is absolutely mission essential.	-1,000
▪ **Support Services**	
Reflects a decrease for reductions to the burn rate of existing tasks and/or the elimination of other tasks in administrative, management, and technical support areas. The decrease in support service funding is possible due to the increase in NNSA Federal staff.	-1,000
▪ **Other Related Expenses**	
Reflects a decrease due to a one-time furniture purchase.	-130
Total Funding Change, Office of the Administrator	**+24,084**

Funding Profile by Category

	(dollars in thousands/whole FTEs)		
	FY 2007	FY 2008	FY 2009
Headquarters			
Salaries and Benefits	116,600	120,411	131,875
Travel	9,301	10,678	9,678
Support Services	16,009	15,329	14,329
Other Related Expenses	36,928	57,054	56,512
Total, Headquarters	178,838	203,472	212,394
Total, Full Time Equivalents	746	779	806
NNSA Service Center			
Salaries and Benefits	50,444	52,125	57,277
Travel	1,419	1,419	1,419
Support Services	5,151	4,416	4,416
Other Related Expenses	18,987	13,834	14,746
Total, NNSA Service Center	76,001	71,794	77,858
Total, Full Time Equivalents	433	443	466
Livermore Site Office			
Salaries and Benefits	14,008	14,625	16,639
Travel	373	373	373
Support Services	1,280	1,200	1,200
Other Related Expenses	2,005	1,393	1,393
Total, Livermore Site Office	17,666	17,591	19,605
Total, Full Time Equivalents	95	98	107
Los Alamos Site Office			
Salaries and Benefits	15,005	15,600	19,027
Travel	228	228	228
Support Services	563	443	443
Other Related Expenses	1,029	1,403	903
Total, Los Alamos Site Office	16,825	17,674	20,601
Total, Full Time Equivalents	102	105	116
Sandia Site Office			
Salaries and Benefits	11,651	11,884	13,208
Travel	250	250	250
Support Services	781	669	669
Other Related Expenses	950	878	878
Total, Sandia Site Office	13,632	13,681	15,005
Total, Full Time Equivalents	83	83	92

Funding Profile by Category (continued)

(dollars in thousands/whole FTEs)

	FY 2007	FY 2008	FY 2009
Nevada Site Office			
Salaries and Benefits	14,023	14,925	16,193
Travel	237	237	237
Support Services	1,352	1,133	1,133
Other Related Expenses	2,168	1,784	1,784
Total, Nevada Site Office	17,780	18,079	19,347
Total, Full Time Equivalents	93	98	109
Pantex Site Office			
Salaries and Benefits	11,495	11,667	12,352
Travel	235	235	235
Support Services	678	449	449
Other Related Expenses	442	294	294
Total, Pantex Site Office	12,850	12,645	13,330
Total, Full Time Equivalents	83	83	86
Y-12 Site Office			
Salaries and Benefits	11,728	11,988	12,807
Travel	275	275	275
Support Services	1,044	784	784
Other Related Expenses	924	1,037	1,037
Total, Y-12 Site Office	13,971	14,084	14,903
Total, Full Time Equivalents	83	84	86
Kansas City Site Office			
Salaries and Benefits	5,668	5,725	6,409
Travel	182	182	182
Support Services	37	7	7
Other Related Expenses	153	353	353
Total, Kansas City Site Office	6,040	6,267	6,951
Total, Full Time Equivalents	44	44	49
Savannah River Site Office			
Salaries and Benefits	3,698	4,150	3,527
Travel	216	223	223
Support Services	81	61	61
Other Related Expenses	693	276	276
Total, Savannah River Site Office	4,688	4,710	4,087
Total, Full Time Equivalents	27	30	25

Funding Profile by Category (continued)

(dollars in thousands/whole FTEs)

	FY 2007	FY 2008	FY 2009
Office of the Administrator			
Salaries and Benefits	254,320	263,100	289,314
Travel	12,716	14,100	13,100
Support Services	26,976	24,491	23,491
Other Related Expenses	64,279	78,306	78,176
Total, Office of the Administrator	358,291	379,997	404,081
Total, Full Time Equivalents	1,789	1,847	1,942

Outyear Funding Profile by Category

(dollars in thousands/FTEs)

	FY 2010	FY 2011	FY 2012	FY 2013
Headquarters				
Salaries and Benefits	138,260	144,467	151,035	157,933
Travel	9,872	10,109	10,210	10,414
Support Services	14,616	14,967	15,117	15,419
Other Related Expenses	57,642	59,025	59,615	60,807
Total, Headquarters	220,390	228,568	235,977	244,573
Total, Full Time Equivalents	806	806	806	806
NNSA Service Center				
Salaries and Benefits	59,854	62,547	65,362	68,303
Travel	1,447	1,482	1,497	1,527
Support Services	4,504	4,612	4,658	4,751
Other Related Expenses	15,041	15,402	15,556	15,867
Total, NNSA Service Center	80,846	84,043	87,073	90,448
Total, Full Time Equivalents	466	466	466	466
Livermore Site Office				
Salaries and Benefits	17,388	18,170	18,988	19,842
Travel	380	389	393	401
Support Services	1,224	1,253	1,266	1,291
Other Related Expenses	1,421	1,455	1,470	1,499
Total, Livermore Site Office	20,413	21,267	22,117	23,033
Total, Full Time Equivalents	107	107	107	107
Los Alamos Site Office				
Salaries and Benefits	19,883	20,778	21,713	22,690
Travel	233	239	241	246
Support Services	452	463	468	477
Other Related Expenses	921	943	952	971
Total, Los Alamos Site Office	21,489	22,423	23,374	24,384
Total, Full Time Equivalents	116	116	116	116
Sandia Site Office				
Salaries and Benefits	13,802	14,423	15,072	15,750
Travel	255	261	264	269
Support Services	682	698	705	719
Other Related Expenses	896	918	927	946
Total, Sandia Site Office	15,635	16,300	16,968	17,684
Total, Full Time Equivalents	92	92	92	92

Outyear Funding Profile by Category (continued)

(dollars in thousands/FTEs)

	FY 2010	FY 2011	FY 2012	FY 2013
Nevada Site Office				
Salaries and Benefits	16,922	17,683	18,479	19,311
Travel	242	248	250	255
Support Services	1,156	1,184	1,196	1,220
Other Related Expenses	1,820	1,864	1,883	1,921
Total, Nevada Site Office	20,140	20,979	21,808	22,707
Total, Full Time Equivalents	109	109	109	109
Pantex Site Office				
Salaries and Benefits	12,908	13,489	14,096	14,730
Travel	240	246	248	253
Support Services	458	469	474	483
Other Related Expenses	300	307	310	316
Total, Pantex Site Office	13,906	14,511	15,128	15,782
Total, Full Time Equivalents	86	86	86	86
Y-12 Site Office				
Salaries and Benefits	13,383	13,985	14,614	15,272
Travel	281	288	291	297
Support Services	800	819	827	844
Other Related Expenses	1,058	1,083	1,094	1,116
Total, Y-12 Site Office	15,522	16,175	16,826	17,529
Total, Full Time Equivalents	86	86	86	86
Kansas City Site Office				
Salaries and Benefits	6,697	6,998	7,313	7,642
Travel	186	190	192	196
Support Services	7	7	7	7
Other Related Expenses	360	369	373	380
Total, Kansas City Site Office	7,250	7,564	7,885	8,225
Total, Full Time Equivalents	49	49	49	49
Savannah River Site Office				
Salaries and Benefits	3,686	3,852	4,025	4,206
Travel	227	232	234	239
Support Services	62	63	64	65
Other Related Expenses	282	289	292	298
Total, Savannah River Site Office	4,257	4,436	4,615	4,808
Total, Full Time Equivalents	25	25	25	25

Outyear Funding Profile by Category (continued)

(dollars in thousands/FTEs)

	FY 2010	FY 2011	FY 2012	FY 2013
Office of the Administrator				
Salaries and Benefits	302,783	316,392	330,697	345,679
Travel	13,363	13,684	13,820	14,097
Support Services	23,961	24,535	24,782	25,276
Other Related Expenses	79,741	81,655	82,472	84,121
Total, Office of the Administrator	419,848	436,266	451,771	469,173
Total, Full Time Equivalents	1,942	1,942	1,942	1,942

Support Services by Category

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
Administrative support	14,542	13,580	12,955
Management support	1,040	1,350	1,350
Technical support			
Other technical support	3,227	2,621	2,246
Security support	4,227	3,700	3,700
ES&H technical support	1,571	1,266	1,266
Project management support	2,060	1,728	1,728
Facility representative support	309	246	246
Subtotal, Technical support	11,394	9,561	9,186
Total, Support Services	**26,976**	**24,491**	**23,491**

Other Related Expenses by Category

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
Training	1,902	3,034	3,034
Space and Occupancy Costs			
Rental payments	10,083	16,804	15,627
Facilities and maintenance	7,423	8,090	7,176
Utilities	3,103	6,792	7,234
Office space - full cost recovery	2,359	2,427	2,427
Internal Control	1,101	2,101	1,792
I-MANAGE	804	1,351	2,435
Supplies and materials	1,074	1,266	1,249
Equipment maintenance	653	741	727
Printing and production	198	424	329
Subtotal, Space and Occupancy Costs	26,798	39,996	38,996
Other Expenses			
International Offices	3,288	3,288	3,288
HBCU/HSIs	1,501	2,888	3,600
PCS moves	2,326	3,126	3,126
Other Services	741	1,013	1,171
Reception and representation	8	12	12
Subtotal, Other Expenses	7,864	10,327	11,197
Subtotal, Other Related Expenses	34,662	50,323	50,193
Information Technology	27,715	24,949	24,949
Total, Other Related Expenses	**64,279**	**78,306**	**78,176**

Congressional Directed Projects

Funding by Subprogram

(dollars in thousands)

	FY 2007	FY 2008 [a]	FY 2009
Congressionally Directed Projects	[2,971]	22,140	[2,741]

Description

The FY 2008 Consolidated Appropriation Act (P.L. 110-161) included 7 congressionally directed projects within the Office of the Administrator account. Funding for these projects was appropriated as a separate funding line although specific projects may relate to ongoing work in a specific programmatic area. Prior year funding is noted in the table as a non-additive column entry.

A research and education partnership program with Historically Black Colleges and Universities (HBCU) and the Massie Chairs of Excellence was initiated by the Congress through Congressionally directed projects in the Office of the Administrator appropriation in FY 2005 and FY 2006. The NNSA has established an effective program to target national security research opportunities for these institutions to increase their participation in national security-related research and to train and recruit HBCU graduates for employment within the NNSA. The NNSA goal is a stable $10 million annual effort. However, the FY 2008 Consolidated Appropriation Act included $22.1 million in congressionally directed projects in support of the HBCU programs within the Office of the Administrator account. In FY 2009, the Office of the Administrator appropriation will provide funding of $3.6 million to support HBCU activities ($2.5 million Massie Chairs of Excellence and $1.1 million HBCU). Additionally, the Weapons Activities appropriation will provide up to $6 million; the Defense Nuclear Nonproliferation appropriation will provide up to $3 million; and the Naval Reactors program will fund up to $1 million of HBCU efforts in FY 2009 in multiple research areas directly supporting program activities. The above table does not include all NNSA funding provided to HBCUs in FY 2007 ($9.1 million total). The table only reflects comparable data provided to the specific schools included in FY 2008 Congressionally directed projects for HBCU support.

[a] Reflects a rescission of $360,000 as cited in the FY 2008 Consolidated Appropriations Act (P.L. 110-161).

Detailed Justification

(dollars in thousands)

	FY 2007 *(non-add)*	FY 2008 with Rescission	FY 2009
Congressionally Directed Projects			
• HBCU, ACE Program at Maricopa Community Colleges (AZ)	[75]	984	[23]
• HBCU, Morehouse College Energy Science Research and Education Initiative (GA)	[188]	1,968	[59]
• HBCU, South Carolina Math and Science Initiative (SC)	[208]	10,332	[468]
• HBCU, Wilberforce (OH)	[2,000] [a]	1,476	[1,000] [a]
• HBCU, Central State (OH)	[500] [a]	1,476	[700] [a]
• HBCU, Educational Advancement Alliance Graduate Program (PA)	0	3,936	[351]
• HBCU, Marshall Fund Minority Energy Science Initiative (MD)	0	1,968	[140]
Total, Congressionally Directed Projects	[2,971]	22,140	[2,741]

The above table does not include all NNSA funding provided to HBCUs in FY 2007 ($9.1 million total). The table only reflects comparable data provided to the specific schools included in FY 2008 Congressionally directed projects for HBCU support.

Explanation of Funding Changes

	FY 2009 vs. FY 2008 ($000)
Congressionally Directed Projects	
Reflects a decrease due to the FY 2008 Consolidated Appropriation Act (P.L. 110-161) add-on for NNSA support for HBCU activities. The Office of the Administrator appropriation will provide $3.6 million ($2.5 million for the Massie Chairs of Excellence and $1.1 million HBCU); the Weapons Activities appropriation will provide up to $6 million; the Defense Nuclear Nonproliferation appropriation will provide up to $3 million; and the Naval Reactors program will provide up to $1 million for HBCU efforts in FY 2009.	-22,140
Total, Congressionally Directed Projects	**-22,140**

[a] Wilberforce and Central are funded within Weapons Activities and Defense Nuclear Nonproliferation since the activities directly support program work.

Weapons Activities

Weapons Activities

Table of Contents

Weapons Activities

Proposed Appropriation Language

For Department of Energy expenses, including the purchase, construction, and acquisition of plant and capital equipment and other incidental expenses necessary for atomic energy defense weapons activities in carrying out the purposes of the Department of Energy Organization Act (42 U.S.C. 7101 et seq.), including the acquisition or condemnation of any real property or any facility or for plant or facility acquisition, construction, or expansion, *the purchase of not to exceed two passenger motor vehicles, and one ambulance;* [$6,355,633,000]*$6,618,079,000,* to remain available until expended [: *Provided,* That $38,957,000 is authorized to be appropriated for Project 06-D-14-05 (PED) Uranium Processing Facility, Y-12 Plant, Oak Ridge, Tennessee: *Provided further,* That $69,330,000 is authorized to be appropriated for Project 99-D-141 Pit Disassembly and Conversion Facility (PDCF) Savannah River Site, South Carolina: *Provided further,* That $74,809,000 is authorized to be appropriated for 04-D-125 Chemistry and Metallurgy facility replacement project, Los Alamos, New Mexico: *Provided further,* That $10,000,000 is authorized to be appropriated for Ion Beam Laboratory refurbishment, Sandia National Laboratory, Albuquerque, New Mexico: *Provided further,* That $14,846,000 is authorized to be appropriated for Material Security and Consolidation project, Idaho National Laboratory, Idaho]. *(Energy and Water Development and Related Agencies Appropriation Act, 2008.)*

Explanation of Change

The FY 2009 Request increase is largely due to the following: The Defense Programs efforts to support the stockpile and complex transformation, to continue its increased focus on dismantling retired Cold War warheads, and to cover project baseline funding requirements for Construction projects. Cyber Security activities to increase support for revitalization, certification, accreditation and training across the NNSA complex. The budget for the Nuclear Weapons Incident Response program increased from two functional transfers and increased funding for two national security initiatives started in FY 2008. Finally, the new Transformation Disposition program initiative to begin to eliminate excess NNSA facilities consistent with complex transformation activities.

Weapons Activities

Funding Profile by Subprogram

(dollars in thousands)

	FY 2007 Current Appropriation	FY 2008 Original Appropriation	FY 2008 Adjustments	FY 2008 Current Appropriation	FY 2009 Request
Weapons Activities					
Directed Stockpile Work	1,430,192	1,413,879	-12,627	1,401,252	1,675,715
Science Campaign	267,758	290,216	-2,592	287,624	323,070
Engineering Campaign	161,736	171,075	-1,527	169,548	142,742
Inertial Confinement Fusion Ignition and High Yield Campaign	489,706	474,442	-4,236	470,206	421,242
Advanced Simulation and Computing Campaign	611,253	579,714	-5,177	574,537	561,742
Pit Manufacturing and Certification Campaign	242,392	215,758	-1,927	213,831	0
Readiness Campaign	201,713	159,512	-1,424	158,088	183,037
Readiness in Technical Base and Facilities	1,613,241	1,652,132	-14,751	1,637,381	1,720,523
Secure Transportation Asset	209,537	213,428	-1,905	211,523	221,072
Nuclear Weapons Incident Response	133,514	160,084	-1,429	158,655	221,936
Facilities and Infrastructure Recapitalization Program	169,383	181,613	-1,622	179,991	169,549
Environmental Projects and Operations	0	8,669	-77	8,592	40,587
Transformation Disposition	0	0	0	0	77,391
Defense Nuclear Security	656,653	806,434	-7,201	799,233	737,328
Cyber Security	104,505	101,191	-904	100,287	122,511
Congressionally Directed Projects	0	48,000	-768	47,232	0
Subtotal, Weapons Activities	**6,291,583**	**6,476,147**	**-58,167**	**6,417,980**	**6,618,445**
Security Charge for Reimbursable Work	-33,000	-34,000		-34,000	0
Use of Prior Year Balances	0	-86,514		-86,514	-366
Total, Weapons Activities	**6,258,583**	**6,355,633**	**-58,167**	**6,297,466**	**6,618,079**

Public Law Authorization:

FY 2008 Consolidated Appropriations Act (P.L. 110-161)
National Nuclear Security Administration Act, (P.L. 106-65), as amended

Outyear Funding Profile by Subprogram

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
Weapons Activities				
Directed Stockpile Work	1,762,079	1,789,979	1,760,218	1,776,388
Science Campaign	309,091	295,192	296,662	299,902
Engineering Campaign	148,863	146,565	150,475	153,907
Inertial Confinement Fusion Ignition and High Yield Campaign	434,007	381,173	373,005	377,762
Advanced Simulation and Computing Campaign	526,373	510,808	514,405	520,645
Pit Manufacturing and Certification Campaign	0	0	0	0
Readiness Campaign	170,003	161,139	161,130	164,295
Readiness in Technical Base and Facilities	1,904,398	2,153,557	2,275,909	2,372,916
Secure Transportation Asset	249,555	261,543	268,134	269,325
Nuclear Weapons Incident Response	229,661	235,211	242,425	250,947
Facilities and Infrastructure Recapitalization Program	192,945	196,379	195,096	194,779
Environmental Projects and Operations	37,288	39,026	37,468	36,040
Transformation Disposition	89,457	88,589	88,008	87,863
Defense Nuclear Security	818,285	817,809	793,856	814,928
Cyber Security	113,690	120,874	130,121	140,621
Total, Weapons Activities	**6,985,695**	**7,197,844**	**7,286,912**	**7,460,318**

Major Outyear Priorities and Assumptions

Major outyear considerations are described in each GPRA Unit.

Weapons Activities Summary

The National Nuclear Security Administration (NNSA) FY 2009-FY 2013 budget proposal continues significant efforts to meet Administration and Secretarial priorities for Weapons Activities. Key focus areas include:

- Meeting the immediate needs of the stockpile,
- Transforming the nuclear weapons stockpile and infrastructure, while meeting Department of Defense (DoD) requirements, through Complex Transformation initiatives,
- Creating a smaller footprint for the Complex supported by Weapons Activities by eliminating redundant missions, consolidating capabilities and special nuclear materials, and transferring custody of excess infrastructure to alternate landlords or eliminating it where necessary while acquiring a limited number of replacement facilities consistent with complex transformation initiatives,
- Supporting Cyber Security revitalization, certification and accreditation, and education and training initiatives,
- Standup of the proposed new Transformation Disposition Program and continued maintenance of critical facilities while achieving facility footprint reduction,

- Providing nuclear emergency response assets in support of homeland security, and continuing Research and Development efforts for both the Render Safe Research and Development (R&D) and Stabilization Implementation Programs, in addition to concentration in collaborative roles in countering nuclear terrorism in support of national security.

- Reducing the deferred maintenance backlog for critical facilities that will not be replaced and performing minimum maintenance on other facilities.

The Defense Programs request includes funding to support Life Extension Program activities to meet Department of Defense (DoD) requirements. The FY 2009 request continues work related to the Reliable Replacement Warhead (RRW) concept and design in three areas: within Directed Stockpile Work, $10,000,000 is included each year to enable maturation of the RRW design in order to address questions raised by the JASON review of the RRW feasibility study activities; in the Science Campaign, the Advanced Certification program will continue efforts begun in FY 2008 at the direction of the Congress to review, evaluate and implement key recommendations from the JASONs RRW study regarding approaches to establishing an accredited warhead certification plan without nuclear testing, and within Enhanced Surety, evaluation of surety options for possible future systems, whether LEPs or RRW systems.

Stockpile Stewardship Program (SSP)

Stockpile Stewardship is working – the stockpile remains safe and reliable. Throughout the past decade, the SSP has proven its ability to successfully sustain the safety and reliability of the nuclear arsenal without use of underground nuclear testing. Stockpile Stewardship is based on cutting-edge scientific and engineering experiments and analyses, including extensive laboratory and flight tests of warhead components and subsystems. Each year, a more complete understanding of the complex physical processes underlying the performance of an aging nuclear stockpile affirms the collective judgment of the scientific community. In the second decade of Stockpile Stewardship, a fundamental challenge is to maintain essential military capabilities, in addition to safety, security, and reliability, over the long term and enable significant reductions in reserve warheads. Furthermore, the U.S. must continue to make progress towards a truly responsive nuclear weapons infrastructure as called for in the Nuclear Posture Review (NPR) submitted to Congress in January 2002. The NPR confirms that nuclear weapons will continue to play an essential role in U.S. National Security Policy in the 21st Century, although that role will be different from what it had been throughout the latter half of the 20th Century. Stewardship of the nuclear weapons stockpile and the supporting infrastructure compels the NNSA to anticipate change and plan for the future.

The stockpile reductions of the 1990s and the SSP began a transformation process that must continue to evolve. In recent years, it has also become clear that it is essential to plan and undertake a revitalization and transformation of the nuclear weapons complex infrastructure. As we move forward then, the NNSA and the SSP have three simultaneous responsibilities: (1) Sustain the legacy stockpile; (2) Complete dismantlement of retired weapons; (3) Revitalize, modernize, and reduce the size of the Nuclear Weapons Complex.

The FY 2009 budget request for Weapons Activities is balanced to fulfill these responsibilities and prioritized to provide for the safety, security, and reliability of the nuclear weapons stockpile. Implementation actions for complex transformation are incorporated into existing program elements:

Directed Stockpile work (DSW), Campaigns, Readiness in Technical Base and Facilities (RTBF), and Secure Transportation Asset (STA). In FY 2007, the Pit Manufacturing and Certification Campaign successfully completed its multi-year goal of re-establishing a pit manufacturing capability with the production of 10 war-reserve W88 pits. With the accomplishment of this goal, beginning with this budget, the Pit Manufacturing and Certification Campaign will be disestablished and the activities will be realigned with DSW (manufacturing capability and manufacturing) and the Science Campaign (certification). Some program elements, such as RTBF, are particularly pivotal in enhancing long-term responsiveness of the nuclear weapons complex. The NNSA approach to transformation relies extensively on existing line program organizations owning individual actions required to change both the stockpile and its supporting infrastructure. This approach emphasizes working within a constrained total budget, re-prioritizing actions, and canceling lower-priority tasks to fund transformation tasks. Table 1 summarizes the approach taken by NNSA management in preparation of the FY 2009 budget to reflect each of the Complex Transformation four strategies.

Complex Transformation – Vision of the Future Complex

December 18, 2007 - STATEMENT BY THE PRESS SECRETARY

Nuclear Weapons Stockpile Transformation

The President has approved a significant reduction in the U.S. nuclear weapons stockpile to take effect by the end of FY 2007. The President's decision, made on the recommendation of Secretary of Defense Robert Gates and Secretary of Energy Samuel Bodman with the full support of the Joint Chiefs of Staff and the Commander, United States Strategic Command, follows a major reduction previously announced in 2004. As a result, by 2012, the U.S. nuclear stockpile will be less than one-quarter its size at the end of the Cold War.

The President's decision further advances policies that he has advocated since assuming office. We are reducing our nuclear weapons stockpile to the lowest level consistent with America's national security and our commitments to friends and allies. A credible deterrent remains an essential part of U.S. national security, and nuclear forces remain key to meeting emerging security challenges. The reduction is part of the President's overall strategy to transform the U.S. nuclear weapons stockpile and its supporting infrastructure to better meet the security needs of the 21st Century. It is a comprehensive effort to reduce U.S. reliance on nuclear weapons and streamline and modernize our nuclear infrastructure.

The future Nuclear Weapons Complex (the Complex) would be smaller, safer and less expensive. It would leverage the unique capabilities of our workers, meet today's national security requirements, and would be responsive to tomorrow's needs. The NNSA, in partnership with the DoD, will implement the approved U.S. policy specified in the Nuclear Posture Review to: (1) Change the size, composition, and character of our nuclear stockpile in a way that reflects the reality that the Cold War is over; (2) Achieve a credible deterrent with the lowest-possible number of nuclear warheads consistent with our national security needs, including obligations to our allies; and (3) Transform our nuclear weapons complex into a responsive infrastructure that supports the specific stockpile requirements and maintains the essential U.S. nuclear capabilities needed for an uncertain global future.

The Complex Transformation vision is implemented through activities across all aspects of the nuclear weapons program. The NNSA relies on four implementing strategies to achieve complex transformation: (1) Transform the nuclear stockpile in partnership with the DoD; (2) Transform to a modernized, cost-effective complex; (3) Create a fully integrated and interdependent complex; and (4) Drive the science and technology base essential for long-term National Security. The future complex will be realized through a combination of ongoing and new activities that would lead to the elimination of redundancies and ensure improvements in efficiency. Missions, capabilities, special nuclear materials (SNM), square footage would be consolidated across the Complex. The number of sites in the Complex with quantities of SNM requiring costly security protection would be reduced to five by 2012. Redundant capabilities would be consolidated and expensive experimental facilities would be shared by the entire Complex. As production centers are updated and refurbished and existing facilities are removed from Weapons Activities roles, the total footprint of the Complex would be reduced by as much as one third, going from greater than 35 million to less than 26 million square feet and over 600 facilities would become excess to Defense Program needs. In addition, weapons dismantlement would occur at a significantly faster pace.

In conjunction with the Complex Transformation Supplemental Programmatic Environmental Impact Statement (SPEIS), a preferred alternative for the future nuclear weapons complex infrastructure was developed. This preferred alternative identifies the major facilities proposed for the future Complex in addition to consolidations of missions, capabilities, SNM, and facility square footage used in production, testing, and R&D. The FY 2009 budget includes funding to pursue a future weapons program consistent with the preferred alternative assuming that a Record of Decision (ROD) is promulgated in FY 2008.

Funding for proposed new facility acquisitions, while eliminating unneeded existing buildings and structures, is a priority that must be addressed starting in FY 2009. The preferred alternative includes the following elements that are reflected in the budget submission:

- Category I & II quantities of SNM would be consolidated from seven to five of the sites in the Complex by 2012, with the footprint associated with these materials reduced significantly at the five remaining sites.

- Technical Area-55 (TA-55) at the Los Alamos site would be the center for plutonium R&D and production. The Chemistry and Metallurgy Research Replacement-Nuclear Facility (CMRR-NF) would be built to support production at TA-55 of 50 – 80 pits per year for the stockpile.

- Y-12 at Oak Ridge, TN, would remain the center for uranium R&D and production. The Highly Enriched Uranium Materials Facility (HEUMF) would be completed and the proposed Uranium Processing Facility (UPF) would be built. A consolidated manufacturing complex (CMC) would be built to consolidate remaining Y-12 production operations that do not require high levels of security.

- Pantex Plant at Amarillo, TX, would remain the weapons assembly/disassembly center. Non-destructive surveillance would be consolidated at Pantex and SNM would be consolidated leading to the proposed elimination of the Zone 4 security area.

- Tonopah Test Range (TTR), NV, would cease operations and NNSA would conduct flight testing at Department of Defense facilities.

- Major environmental testing would be consolidated at Sandia National Laboratories (SNL) in New Mexico, and high-consequence testing would be consolidated at the Nevada Test Site (NTS).

- Tritium experimental operations would be consolidated at the Savannah River Site.

- Missions and capabilities across the Complex would be consolidated to facilitate elimination of numerous buildings and structures from Weapons Activity budgets.

In the next several years, the SSP will be judged not only by the success of efforts to maintain a safe, secure, and reliable nuclear weapons stockpile but also by the success of transformation actions to achieve a truly responsive nuclear weapons infrastructure. The term "responsive" refers to the agility of the nuclear enterprise's capabilities to respond to unanticipated events or emerging threats, as well as the ability to anticipate and counter innovations by an adversary before the nation's deterrent is degraded. The elements of a responsive infrastructure include the people, the science and technology base, the facilities and equipment to support a right-sized nuclear weapons enterprise, as well as practical and streamlined business practices that will enable the Complex to respond rapidly and flexibly to emerging needs. As Complex Transformation proceeds, the NNSA will review Weapons Activities performance measures (goals, indicators, and endpoint and annual targets) to ensure that they are consistent with plans and decisions and to develop any required new measures.

Table 1: Complex Transformation FY 2009 Budget Preparation Approach

Strategy	FY 2009 Budget Approach
Transform the stockpile in partnership with the DoD	Continue Life Extension Program (LEP) strategy for legacy weapons in order to maintain reliability and longevity of nuclear deterrent, with an emphasis on enhanced safety, security and replacement of obsolete equipment in order to allow for secure Complex Transformation. Support the reduction of the nation's nuclear weapons stockpile through the dismantlement and disposition of retired weapons. Provide the capability to develop and manufacture plutonium pits and certify existing pits for reuse to meet other system design requirements.
Transform to a modernized, cost-effective complex	Consolidate Special Nuclear Material (SNM), reduce complex square footage, eliminate duplicative capabilities at multiple sites, and increase productivity improvements to fund changes in the physical infrastructure of the Complex. Implement preferred alternative actions consistent with the Complex Transformation SPEIS and subsequent Record(s) of Decision.
Create a fully integrated and interdependent complex	Make changes to contracts acquisition process, organization structure, project and risk management approaches, and technical business practices as rapidly as practical. Reprioritize existing funding resources to accommodate Complex Transformation in a cost effective manner.

Strategy	FY 2009 Budget Approach
Drive the science and technology base essential for long-term National Security	Focus the Campaigns on the essential long-term science and technology requirements of stockpile stewardship to ensure robustness of the nuclear deterrent.

Mission
The Weapons Activities mission is to ensure that our nuclear weapons continue to serve their essential deterrence role by maintaining and enhancing the safety, security, and reliability of the U.S. nuclear weapons stockpile.

Benefits
The Weapons Activities program supports the DOE/NNSA mission by maintaining a robust infrastructure of people, programs, and facilities to provide specialized scientific and technical capability for stewardship of the nuclear weapon stockpile.

Strategic and GPRA Unit Program Goals
The Department's Strategic Plan identifies five Strategic Themes (one each for energy security, nuclear security, scientific discovery and innovation, environmental responsibility, and management excellence) plus 16 Strategic Goals that tie to the Themes. The Weapons Activities authorization supports the following Strategic Themes and goals:

Strategic Theme 2, Nuclear Security: Ensuring America's Nuclear Security.

Strategic Goal 2.1, Nuclear Deterrent: Transform the Nations nuclear weapons stockpile and supporting infrastructure to be more responsive to the threats of the 21st Century.

Within the Weapons Activities appropriation, 15 programs, Government Performance and Reports Act (GPRA) Units each make unique contributions to Goal 2.1 as follows:

Contribution to GPRA Unit Program 2.1.26.00, Directed Stockpile Work
The Directed Stockpile Work program contributes to this goal by ensuring that the nuclear warheads and bombs in the U.S. nuclear stockpile are safe, secure, and reliable.

Contribution to GPRA Unit Program 2.1.27.00, Science Campaign
The Science Campaign contributes to this goal by developing improved capabilities to assess the safety, reliability, and performance of the nuclear portion of weapons without further underground testing; maintaining readiness to conduct underground nuclear testing if directed by the President; and developing essential scientific capabilities and infrastructure.

Contribution to GPRA Unit Program 2.1.28.00, Engineering Campaign
The Engineering Campaign contributes to this goal by providing validated engineering sciences and engineering modeling and simulation tools for design, qualification, and certification; improved surety technologies; radiation hardening design and modeling capabilities; microsystems and micro technologies; component and material lifetime assessments; and predictive aging models and surveillance diagnostics.

Contribution to GPRA Unit Program 2.1.29.00, Inertial Confinement Fusion Ignition and High Yield Campaign
The Inertial Confinement Fusion Ignition and High Yield Campaign contributes to this goal by developing laboratory capabilities to create and measure extreme conditions of temperature, pressure, and radiation, including thermonuclear burn conditions, approaching those in a nuclear explosion and by conducting weapons-related research in these environments.

Contribution to GPRA Unit Program 2.1.30.00, Advanced Simulation and Computing Campaign
The Advanced Simulation and Computing Campaign contributes to this goal by providing leading edge, high-end simulation capabilities to meet weapons assessment and certification requirements, including weapon codes, weapons science, platforms, and computer facilities.

Contribution to GPRA Unit Program 2.1.31.00, Pit Manufacturing and Certification Campaign
The Pit Manufacturing and Certification Campaign contributes to this goal by restoring the capability and some limited capacity to manufacture pits of all types required for the nuclear weapons stockpile. All Pit Manufacturing and Certification Campaign activities have been realigned to the DSW, Readiness in Technical Base and Facilities, and Science Campaign. For FY 2009, this reflects a funding shift of $242,563,000.

Contribution to GPRA Unit Program 2.1.32.00, Readiness Campaign
The Readiness Campaign contributes to this goal by identifying, developing, and delivering new enhanced processes, technologies, and capabilities to meet the current and future nuclear needs of the stockpile and support the transformation of the nuclear weapons complex into an agile and more responsive enterprise with greater design to production integration, shorter cycle times and lower operating costs.

Contribution to GPRA Unit Program 2.1.33.00, Readiness in Technical Base and Facilities
The Readiness in Technical Base and Facilities contributes to this goal by operating and maintaining NNSA program facilities in a safe, secure, efficient, reliable, and compliant condition, including facility operating costs (e.g. utilities, equipment, facility personnel, training, and salaries); facility and equipment maintenance costs (staff, tools, and replacement parts); environmental, safety, and health costs; and planning, prioritizing and constructing state-of-the-art facilities, infrastructure, and scientific tools that are not directly attributable to Directed Stockpile Work or a Campaign, within approved baseline costs and schedule.

Contribution to GPRA Unit Program 2.1.34.00, Secure Transportation Asset
The Secure Transportation Asset contributes to this goal by safely and securely transporting nuclear weapons, weapons components, and special nuclear materials to meet projected DOE, DoD, and other customer requirements.

Contribution to GPRA Unit Program 2.1.35.00, Nuclear Weapons Incident Response
The Nuclear Weapons Incident Response Program contributes to this goal by responding to and mitigating nuclear and radiological incidents worldwide and supporting our increased focus on nuclear counterterrorism and defeating improvised nuclear devices.

Contribution to GPRA Unit Program 2.1.36.00, Facilities Infrastructure and Recapitalization Program
The Facilities Infrastructure and Recapitalization Program contributes to this goal by restoring, rebuilding, and revitalizing the physical infrastructure of the Nuclear Weapons Complex.

Contribution to GPRA Unit Program 2.1.57.00, Defense Nuclear Security
The Defense Nuclear Security Program contributes to this goal by protecting NNSA personnel, facilities, nuclear weapons, and information from a full spectrum of threats, most notably from terrorism, which has become of paramount concern after the September 11, 2001, attacks in the United States.

Contribution to GPRA Unit Program 2.1.58.00, Cyber Security
The Cyber Security Program contributes to this goal by providing the requisite guidance needed to ensure that sufficient information technology, and information management security safeguards are implemented throughout the NNSA complex.

Contribution to GPRA Unit Program 2.1.38.00, Environmental Projects and Operations
The Environmental Projects and Operations Program contributes to this goal by reducing the risks to human health and the environment at NNSA sites and adjacent areas by operating and maintaining environmental clean-up systems installed by the Office of Environmental Management; performing long-term environmental monitoring activities; and by integrating a responsible environmental stewardship program with the NNSA mission activities at these sites.

Contribution to GPRA Unit Program 2.1.59.00, Transformation Disposition
The Transformation Disposition Program contributes to this goal by supporting minor decontamination, dismantlement, removal and disposal of excess facilities that have been deactivated.

Contribution to Goal 2.2, Weapons of Mass Destruction: Supported by the Weapons Activities program, with national assets for transportation of weapons, weapon components and materials and national nuclear emergency response assets, as well as the Nuclear Counterterrorism Design Support inherent in our nuclear stockpile design efforts.

In addition, NNSA activities that are conducted in direct support of Stockpile Stewardship also contribute indirectly to Goal 3.2, Foundations of Science, that provides world class scientific research capacity needed to ensure the success of the Department missions in national and energy security; advance the frontiers of knowledge in physical sciences and areas of biological, medical, environmental and computational sciences; or provide world-class research facilities for the nation's science enterprise. Similarly, many of the Stockpile Stewardship programs indirectly support Strategic Goals 3.1, Scientific Breakthroughs; 3.3, Research Integration; 4.1, Environmental Cleanup; and 4.2, Managing the Legacy.

Funding by Strategic and GPRA Unit Program Goal

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
Strategic Goal 2.1, Nuclear Deterrent			
GPRA Unit Program Goal 2.1.26.00, Directed Stockpile Work	1,430,192	1,401,252	1,675,715
GPRA Unit Program Goal 2.1.27.00, Science Campaign	267,758	287,624	323,070
GPRA Unit Program Goal 2.1.28.00, Engineering Campaign	161,736	169,548	142,742
GPRA Unit Program Goal 2.1.29.00, Inertial Confinement Fusion Ignition and High Yield Campaign	489,706	470,206	421,242
GPRA Unit Program Goal 2.1.30.00, Advanced Simulation and Computing Campaign	611,253	574,537	561,742
GPRA Unit Program Goal 2.1.31.00, Pit Manufacturing and Certification Campaign	242,392	213,831	0
GPRA Unit Program Goal 2.1.32.00, Readiness Campaign	201,713	158,088	183,037
GPRA Unit Program Goal 2.1.33.00, Readiness in Technical Base and Facilities	1,613,241	1,637,381	1,720,523
GPRA Unit Program Goal 2.1.34.00, Secure Transportation Asset	209,537	211,523	221,072
GPRA Unit Program Goal 2.1.35.00, Nuclear Weapons Incident Response	133,514	158,655	221,936
GPRA Unit Program Goal 2.1.36.00, Facilities and Infrastructure Recapitalization Program	169,383	179,991	169,549
GPRA Unit Program Goal 2.1.38.00, Environmental Projects and Operations	0	8,592	40,587
GPRA Unit Program Goal 2.1.57.00, Defense Nuclear Security	656,653	799,233	737,328
GPRA Unit Program Goal 2.1.58.00, Cyber Security	104,505	100,287	122,511
GPRA Unit Program Goal 2.1.59.00, Transformation Disposition	0	0	77,391
Total, Strategic Goal 2.1, Nuclear Deterrent	**6,291,583**	**6,370,748**	**6,618,445**
Congressionally Directed Projects	0	47,232	0
Use of Prior Year Balances	0	-86,514	-366
Security Charge for Reimbursable Work	-33,000	-34,000	0
Total, Weapons Activities	**6,258,583**	**6,297,466**	**6,618,079**

Outyear Funding by Strategic and GPRA Unit Program Goal

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
Strategic Goal 2.1, Nuclear Deterrent				
GPRA Unit Program Goal 2.1.26.00, Directed Stockpile Work	1,762,079	1,789,979	1,760,218	1,776,388
GPRA Unit Program Goal 2.1.27.00, Science Campaign	309,091	295,192	296,662	299,902
GPRA Unit Program Goal 2.1.28.00, Engineering Campaign	148,863	146,565	150,475	153,907
GPRA Unit Program Goal 2.1.29.00, Inertial Confinement Fusion Ignition and High Yield Campaign	434,007	381,173	373,005	377,762
GPRA Unit Program Goal 2.1.30.00, Advanced Simulation and Computing Campaign	526,373	510,808	514,405	520,645
GPRA Unit Program Goal 2.1.31.00, Pit Manufacturing and Certification Campaign	0	0	0	-
GPRA Unit Program Goal 2.1.32.00, Readiness Campaign	170,003	161,139	161,130	164,295
GPRA Unit Program Goal 2.1.33.00, Readiness in Technical Base and Facilities	1,904,398	2,153,557	2,275,909	2,372,916
Asset	249,555	261,543	268,134	269,325
GPRA Unit Program Goal 2.1.35.00, Nuclear Weapons Incident Response	229,661	235,211	242,425	250,947
GPRA Unit Program Goal 2.1.36.00, Facilities and Infrastructure Recapitalization Program	192,945	196,379	195,096	194,779
GPRA Unit Program Goal 2.1.38.00, Environmental Projects and Operations	37,288	39,026	37,468	36,040
GPRA Unit Program Goal 2.1.57.00, Defense Nuclear Security	818,285	817,809	793,856	814,928
GPRA Unit Program Goal 2.1.58.00, Cyber Security	113,690	120,874	130,121	140,621
GPRA Unit Program Goal 2.1.59.00, Transformation Disposition	89,457	88,589	88,008	87,863
Total, Strategic Goal 2.1, Nuclear Deterrent	**6,985,695**	**7,197,844**	**7,286,912**	**7,460,318**

Funding for a proportional share of the NNSA annual assessment required to pay for Defense Contract Audit Agency activities is included in this appropriation. The estimated amount for the Weapons Activities is $1,328,000 for FY 2008 and FY 2009.

Means and Strategies

The Weapons Activities Program will use various means and strategies to achieve its program goals. However, various external factors may impact the ability to achieve these goals. The program also performs collaborative activities to help meet its goals.

The NNSA will conduct research and a wide range of tests and experimental activities to assess the continuing safety and reliability of the nation's nuclear weapons stockpile. Overall, technical reviews by the weapons laboratories of the stockpile will encompass laboratory and flight tests of materials, components, and warhead subsystems. Computer simulations will be used in these assessments. Weapons analyses will utilize data archived from past underground nuclear tests, along with laboratory experiments that include dynamic experiments with plutonium and other materials. Working through the weapon production plants and the laboratories, the NNSA will make deliveries of limited life and other weapon components for nuclear weapons stockpile management and refurbishment, according to

schedules developed jointly by the NNSA and the DoD. Dismantlement activities are also carried out in support of this objective. We will significantly increase dismantlement activities in this program compared to prior years to demonstrate our commitment to a smaller stockpile and ensure that transformation of the stockpile and infrastructure is not misperceived by other nations as "restarting the arms race." Activities will be conducted with DoD, ranging from training in nuclear weapons field maintenance to partnerships in research supporting non-nuclear munitions.

The NNSA will continue with the use of Campaigns for activities that develop or mature critical capabilities needed to achieve weapons stockpile certification, develop certification processes to replace aged components that can no longer be reproduced, and develop modern technologies for insertion in the stockpile. The Campaigns are forward-looking efforts with specific objectives and milestones, planned and executed by integrated teams from the laboratories, NTS, and production plants. The five campaigns are Science, Engineering, Inertial Confinement Fusion Ignition and High Yield, Advanced Simulation and Computing, and Readiness.

The NNSA will continue to oversee and maintain the physical plant infrastructure at government-owned, contractor-operated laboratories, NTS, and production plants, according to applicable statutes, laws, agreements, and standards. The NNSA is developing detailed cost models for selected facilities to ensure that mission critical requirements for readiness are maintained. The NNSA will implement the President's Nuclear Posture Review by improving infrastructure, hiring and training personnel, and revising and exercising relevant plans and safety documentation. The NNSA test readiness activities are consistent on a timescale established by national policy. The NNSA will continue to institutionalize responsible and accountable corporate facilities management processes and incorporate best practices from industry and other organizations. This includes implementation of a planning process that results in the submission of Ten-Year Site Plans (TYSPs) that establish the foundation for the strategic planning of the facilities and infrastructure of the complex. The NNSA nuclear weapons complex is a government-owned, contractor-operated enterprise, with the exception of the Secure Transportation Asset (STA) program, which is government-owned and operated. The NNSA works proactively with its contractors, external regulators, and host communities to assure that facilities and operations are in compliance with all applicable statutes and agreements to preclude any adverse impact to the environment, safety, and health of workers and the public and to address emergency management issues while minimizing unscheduled disruption to program activities that could affect performance.

The NNSA will provide for enhancements to the STA program to meet increased operating and security standards, and will maintain nuclear emergency operations assets. Beginning in FY 2010, the STA will begin a three-year program to replace its aging fleet of DC-9 aircraft with newer 737-200s (one aircraft per year). The NNSA will identify the workforce skills necessary to meet long-term stockpile stewardship requirements and will develop staffing plans to attract and retain staff.

Some activities will be conducted with DoD, ranging from training in nuclear weapons field maintenance to partnerships in research supporting non-nuclear munitions. Stockpile Stewardship activities are synergistic with Work for Others activity, sponsored principally by the DoD and Department of Homeland Security (DHS).

There are a number of collaborations with universities and colleges, mainly associated with the strategic computing activities, Science Campaign, and Inertial Confinement Fusion Ignition and High Yield (ICF)

Campaign research effort. Also, a limited number of technology partnership efforts with industry may be continued.

Defense Nuclear Security will partner with Defense Programs in the complex transformation process, to ensure seamless integration with operations and the security mission.

Validation and Verification

To validate and verify program performance, the NNSA will conduct various internal and external reviews and audits. The NNSA programmatic activities are subject to continuing review by the Congress, the U.S. Government Accountability Office, the Department's Inspector General, the National Security Council, the Defense Nuclear Facilities Safety Board, the Department's Office of Engineering and Construction Management, the Department's Office of Health, Safety and Security, and various scientific groups. Each year, numerous external independent reviews are conducted of selected program and projects. Additionally, the NNSA Headquarters senior management and field managers conduct frequent, in-depth reviews of cost, schedule, and scope to ensure projects are on-track and within budget.

The NNSA has established a comprehensive validation and verification process as part of its Planning, Programming, Budgeting, and Evaluation (PPBE) process. Long-term performance goals are established/validated during the PPBE Planning Phase and linked in a performance cascade to annual targets and detailed technical milestones. During the PPBE Programming Phase, budget and resource trade-offs and decisions are evaluated based on the impact to annual and long-term performance measures. These NNSA decisions are documented and used to develop the budget requests during Budgeting Formulation. Program and financial performance for each measure is monitored and progress verified during Budget Execution and the PPBE Evaluation Phase.

The NNSA validation and verification activities during the Budget Execution and the PPBE Evaluation Phase include a set of tiered performance reviews to examine a range of information from detailed technical progress to program management controls to corporate performance against long-term goals. This set of reviews includes the: (1) Office of Management and Budget (OMB) Program Assessment Rating Tool (PART); (2) Budget Formulation Validation; (3) Independent Assessment process: (4) NNSA Administrator Program Reviews; (5) Program Manager Detailed Technical Reviews; (6) NNSA Mid-Year Finance and Performance Review; (7) Quarterly reporting of progress through the Department's Joule performance tracking system; (8) Program Management Self Assessment (PMSA) reporting; and (9) NNSA Administrator's Annual Performance Report.

The NNSA is using the OMB PART process to annually perform internal self-assessments of the management strengths and weaknesses of each NNSA GPRA Unit/program. Among other things, the PART process helps NNSA ensure that quality, clarity, and completeness of its performance data and results are in accordance with standards set in the Government Performance and Results Act of 1993 and reinforced by the President's Management Agenda. Independent PART assessments conducted by OMB provide additional recommendations to strengthen the NNSA programs.

Each NNSA program is reviewed at least annually by the NNSA Administrator during NNSA Program Reviews. These reviews involve all members of the NNSA Management Council to ensure progress and recommendations are fully integrated for corporate improvement. The focus of these reviews is to verify and validate that NNSA programs are on track to meet their long-term goals and annual targets.

Periodic program reviews are conducted (e.g., critical programs such as the Life Extension Programs are reviewed monthly and quarterly program reviews are conducted for all programs). The focus of these reviews is to verify and validate that program managers are achieving technical programmatic milestones, within planned, scope, cost, schedule, and maintenance that result in progress toward annual targets and long-term goals. A more detailed program review is conducted by the program managers and for weapons programs, with DoD customers. The focus of these reviews is to verify and validate that NNSA contractors are achieving detailed technical milestones that support programmatic milestone and result in progress towards annual targets and long-term goals. The three types of reviews work together to ensure that NNSA managers are given advanced notice so that corrective actions can be implemented. The NNSA sites are responsible and accountable for accomplishing the verification and validation of their and their sub-contractors performance data and results prior to submission to NNSA Headquarters. During FY 2007, the NNSA developed and implemented an independent assessment process. The Cyber Security Program and Information Technology Program were assessed, and findings from this review are being addressed by each Program.

The results of all of these reviews are reflected quarterly in the DOE Joule performance tracking systems and program management self-assessments, and the DOE Consolidated Quarterly Performance Report (CQPR), and annually in the NNSA Administrator's Annual Performance Report and DOE Performance and Accountability Report (PAR). Both of the latter documents help to measure the progress that the NNSA programs are making toward achieving annual targets en-route to long-term goals. These documents are at a summary level to help senior managers verify and validate progress towards the NNSA and Departmental commitments listed in the budget.

Additionally, the NNSA performs validations of approximately 20 percent of its budget on an annual basis. A two-Phase process was developed to validate the FY 2006 Budget Formulation process and estimate. This process consists of Phase I: Validation of the Need for the Program's Proposed Activities (Program Review) and Phase II: Pricing Validation of Selected Programs (Pricing Review). Budget validation efforts focuses on determining consistency with NNSA strategic planning and program guidance, integration of planned activities/milestones with budget estimates, and reasonableness of budget estimates. During the FY 2009 process, the Advanced Simulating and Computing Campaign, International Nuclear Materials Protection and Cooperation Program, and Readiness in Technical Base and Facilities Program participated in both Phase I and II. The reviews found the overall process for developing the budgets for the FY 2009 satisfactory and the cost estimates were determined to be valid and reasonable.

Program Assessment Rating Tool (PART)

The Department implemented a tool to evaluate select programs. The PART was developed by the Office of Management and Budget (OMB) to provide a standardized way to assess the effectiveness of the Federal Government's portfolio of programs. The structured framework of the PART provides a means through which programs can assess their activities differently than through traditional reviews. The PART process links seamlessly with the NNSA PPBE concept, and we have initiated PART "self-assessments" for all NNSA programs as a prominent aspect of the annual program review cycle.

The current focus is to establish outcome- and output-oriented goals, the successful completion of which will lead to benefits to the public, such as increased national security and energy security, and improved

environmental conditions. The NNSA has incorporated feedback from the OMB into the FY 2009 NNSA Budget Request and will take the necessary steps to continue to improve performance.

Results of PART assessments in prior years are summarized in the table below:

FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Advanced Simulation and Computing Campaign – *Effective*	Inertial Confinement Fusion Ignition & High Yield Campaign and National Ignition Facility – *Moderately Effective*	Directed Stockpile Work – *Moderately Effective*	Science Campaign – *Moderately Effective*	Engineering Campaign – *Moderately Effective*	Advanced Simulation and Computing Campaign – *Effective*
Facilities and Infrastructure Recapitalization – *Moderately Effective*	Readiness in Technical Base and Facilities – Operations – *Moderately Effective*	Secure Transportation Asset – *Moderately Effective*	Readiness Campaign – *Effective*	Pit Manufacturing & Certification Campaign – *Effective*	Readiness in Technical Base and Facilities – *Moderately Effective*
Safeguards and Security – *Adequate (reassessed in FY 2006 as Moderately Effective)*				Nuclear Weapons Incident Response – *Moderately Effective*	

Significant Program Shifts

The NNSA has created a vision that replaces the large, old Cold-War nuclear weapons complex with a small, modern nuclear security enterprise that will be able to respond to our nation's needs in the 21st century. Complex Transformation will result in a nuclear weapons complex able to meet the threats of the 21st century through four strategies focused on changes to: (1) our stockpile, (2) NNSA facilities and physical infrastructure, (3) the way the Complex operates as an integrated, interdependent enterprise, and (4) the way that NNSA ensures our science and technology capabilities serve U.S. national security objectives. During Complex Transformation, the NNSA will continue all programs to meet the immediate needs of the stockpile (e.g., limited-life component supply, surveillance, annual assessment, and Life Extension Programs); pursue Complex-wide business practice improvements and risk mitigation efforts; expand the capability to increase the rate of warhead dismantlements; and sustain an essential science and technology base.

Acquiring major new facilities to modernize the Complex and create a more responsive infrastructure presents a significant Weapons Activities program shift. The NNSA plans to complete a decision process by FY 2009 to support choices between major facility alternatives for Complex Transformation. This decision process is being completed in compliance with the requirements of the National Environmental Policy Act (NEPA). A draft Complex Transformation Supplemental Programmatic

Environmental Impact Statement was issued in January 2008 containing NNSA preferred alternatives. The proposed budget reflects planning consistent with the preferred alternative while retaining the flexibility necessary for the range of likely decisions expected in late 2008. Notable impacts of the preferred alternative on the proposed budget are as follows:

- Technical Area-55 at Los Alamos National Laboratory would be the center for plutonium research and development and production. The Chemistry and Metallurgy Research Replacement-Nuclear Facility would be built to be the only Plutonium surveillance and R&D facility in the future nuclear security enterprise. It would allow closure of the 50+ year old CMR facility at Los Alamos and would allow us to stop programmatic work with Category I and II quantities of plutonium at the Lawrence Livermore National Laboratory. Additionally, it would support production at TA-55 of 50 – 80 pits per year for the stockpile.

- Pantex would serve as the NNSA center for assembly, disassembly, surveillance, and high-explosive (HE) production. The long-term, efficient operation of Pantex requires investments in new facilities to support HE production, surveillance operations, and consolidation of SNM storage while reducing the total footprint of facilities and security perimeter at the site.

- Y-12 would serve as the uranium center which requires completing the HEUMF and subsequently building a UPF for enriched-uranium production operations and a manufacturing complex for other canned subassembly components while reducing the total footprint of facilities and security perimeter at the site.

A total of $10,000,000 is included each year to enable maturation of the RRW design in order to address questions raised by the JASON review of the RRW feasibility study activities. Design refinement is necessary to establish parameters for potential impact on certification among other things. Without further design work, there is insufficient detail available to use this design to resolve certification questions raised by the JASONs review. This funding will also facilitate continued progress on the Phase 2A RRW concept and design work, and documenting that work, to support future administration decisions on options for our nuclear weapons stockpile. The Department of Defense and the Joint DoD-DOE Nuclear Weapons Council fully support continuing efforts to examine how the RRW concept can address issues of safety, security and long-term reliability of the nation's nuclear deterrent.

Within the Science Campaign, the Advanced Certification program will continue efforts begun in FY 2008 to review, evaluate and implement key recommendations from the JASON's study of RRW regarding approaches to establishing an accredited warhead certification plan, without nuclear testing, in an era where changes to nuclear components will occur due to aging or design concerns. A report to Congress to be provided in May, as directed by the FY 2008 Consolidated Appropriations Act (P.L. 110-161), will address plans for achieving the Advanced Certification goals.

The UPF provides an example of the flexibility retained by NNSA until a record of decision is made following issuance of Final Complex Transformation Supplemental Programmatic Environmental Impact Statement later in FY 2008. During FY 2008, the UPF will be in preliminary design that is focused on features of a modern, cost-effective, highly-enriched uranium manufacturing facility that could be sited at any of the locations being considered. UPF final design, which must be very site

specific, is not scheduled to start until after the expected record of decision date. Thus, design of an essential facility required can proceed in a timely manner, while siting flexibility is retained.

The Campaigns are focused on long-term vitality in science and engineering, and on R&D supporting future stockpile requirements. In addition, the NNSA is implementing a responsive infrastructure of people, science and technology base, and facilities and equipment needed to support an appropriate nuclear weapons infrastructure. The NNSA and the Office of Science have established a joint program in high energy density laboratory plasmas (HEDLP), a major sub-area within the discipline of high energy density physics (HEDP). The purpose of the joint program is to steward effectively HEDLP within the DOE while maintaining the interdisciplinary nature of this area of science. The HEDLP effort will be jointly funded by the Office of Science and NNSA and is included in the ICF and Science Campaigns.

All Pit Manufacturing and Certification Campaign activities have been realigned to the DSW, Readiness in Technical Base and Facilities, and Science Campaign. For FY 2009, this reflects a funding shift of $242,563,000. The total amount of $198,829,000 that was planned for Pit Manufacturing and Pit Manufacturing Capabilities activities in FY 2009 will be transferred to the DSW Stockpile Services: $145,269,000 to the Pit Manufacturing sub-program and $53,560,000 to Pit Manufacturing Capability sub-program. The total amount of $42,734,000 that was planned for Pit Certification activities in FY 2009 will be transferred to the Science Campaign: $23,734,000 will be transferred to the new Dynamic Plutonium Experiments (DPE) used to support the conduct of DPE; $9,000,000 will be transferred to the Science Campaign, Primary Assessments and Technology subprogram, to be utilized to continue efforts to reduce uncertainties in the W88 certification; and $10,000,000 will be used to support Advanced Certification created in the Science Campaign in the FY 2008 Consolidated Appropriations Actl (P.L. 110-161).

The NNSA, through Readiness in Technical Base and Facilities, will determine what steps need to be taken to guarantee the reliability of the LANSCE as a user facility and as a central facility enabling science at Los Alamos. This work in the Readiness and Technical Base and Facility line will ultimately provide a foundational basis for establishing a signature experimental facility for materials research. The importance of a signature experimental facility at Los Alamos is recognized by the NNSA and the Department of Energy and options are under consideration.

The Facilities and Infrastructure and Revitalization Program continues to address the deferred maintenance backlog and footprint reduction goals, as well as meet prudent investment rates in addressing the backlog. The Congress extended the completion date for the Facilities and Infrastructure Recapitalization Program to 2013.

The Environmental Projects and Operations Program addresses federal, state and local regulatory requirements at NNSA sites that have Long Term environmental Stewardship activities.

The proposed new Transformation Disposition Program is designed to eliminate half of the more than 10,000,000 gross square feet of excess facilities identified in the FY 2008 Ten Year Site Plans. Project priorities will be developed in FY 2009, in line with transformation planning.

The FY 2009 request for the Nuclear Weapons Incident Response Program continues efforts to enhance Emergency Response and management capabilities, and collaborative national security efforts for countering nuclear terrorism this budget request supports all assets.

The FY 2009 budget request proposes to separate the Safeguards and Security GPRA Unit which is comprised of two subprograms with separate funding controls; Defense Nuclear Security and Cyber Security by changing the Safeguards and Security GPRA Unit title to Defense Nuclear Security and establishing a separate GPRA Unit for Cyber Security.

The FY 2009 Request for Defense Nuclear Security is $737.3 million, a $61.9 million or 7.7 percent decrease from the FY 2008 appropriation. The FY 2009 request supports the base program and the program's focus on sustaining the NNSA sites 2003 Design Basis Threat baseline operations and implementing the 2005 Design Basis Threat Policy upgrades with the Nevada Test Site being compliant in FY 2009. Starting in FY 2009, there is no longer an offset in this account or Departmental Administration for the security charges associated with reimbursable work. These activities will be fully funded by the programs with direct appropriations.

The FY 2009 Request for Cyber Security is $122.5 million, an increase of $22.2 million or 22.2 percent over the FY 2008 appropriation. The Cyber Security increases are the next step in a major five-year effort focused on revitalization, certification, accreditation and training across the NNSA complex. Revitalization enables NNSA to respond to its highest priorities and to address current and future risks; certification and accreditation assure proper documentation of risks and justification of associated operations for systems at all sites; and education and awareness provides training for federal and contractor personnel to meet expanding skill requirements of NNSA cyber security and information environments.

The Materials Consolidation issue is particularly compelling for NNSA in its efforts to transform and reduce the size of the nuclear weapons complex infrastructure, and because of the high cost of securing Cat I and Cat II quantities of materials. The Integrated Excess Materials Consolidation Project is coordinating the consolidation and disposition of nuclear materials excess to mission requirements under a single project and have begun consolidating and reducing SNM.

The initial scope of these activities focuses on "de-inventorying" Category I and II quantities of nuclear materials from several NNSA sites, paying for disposition of these materials as needed, and continuing ongoing efforts for disposition of inactive actinide materials at NNSA sites. In FY 2008, NNSA plans to spend about $22 million to continue the following activities: complete removal of Category I and II quantities of nuclear materials from the Sandia National Laboratories in New Mexico; safely store and begin preparations for processing of sodium debris removed from SNL and relocated to the Idaho National Laboratory; continue removal of Category I and II quantities of nuclear materials from the Lawrence Livermore National Laboratory in California, and continue consolidation and disposition of excess uranium and other nuclear materials from the Oak Ridge Y-12 Plant (Y-12) in Tennessee. These, in total, amount to approximately $22M, of which $10M is the annual "inactive actinides" budget.

These activities will continue in FY 2009, and they are highlighted in the budget justification for the Weapons Activities appropriation.

Historically Black Colleges and Universities (HBCU) Support

A research and education partnership program with the HBCUs and the Massie Chairs of Excellence was initiated by the Congress through earmarks in the Office of the Administrator appropriation in FY 2005 and FY 2006. The NNSA has established an effective program to target national security research opportunities for these institutions to increase their participation in national security-related research and to train and recruit HBCU graduates for employment within the NNSA. The NNSA goal is a stable $10 million annual effort. The majority of the efforts directly support program activities, and it is expected that programs funded in the Weapons Activities appropriation will fund research with the HBCU totaling approximately $4 to $6 million in FY 2009, in areas including engineering, material sciences, computational science, disaster modeling, and environmental sciences.

Directed Stockpile Work

Funding Schedule by Activity

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
Directed Stockpile Work			
Life Extension Programs			
B61 Life Extension Program	58,160	61,908	2,189
W76 Life Extension Program	207,312	172,213	209,196
W80 Life Extension Program	8,152	0	0
Subtotal, Life Extension Programs	**273,624**	**234,121**	**211,385**
Stockpile Systems			
B61 Stockpile Systems	66,870	64,937	80,434
W62 Stockpile Systems	2,170	2,122	1,645
W76 Stockpile Systems	59,493	72,727	68,418
W78 Stockpile Systems	38,165	38,577	43,349
W80 Stockpile Systems	33,178	28,124	32,034
B83 Stockpile Systems	23,954	23,809	25,759
W87 Stockpile Systems	59,165	54,329	37,189
W88 Stockpile Systems	45,510	55,462	49,854
Subtotal, Stockpile Systems	**328,505**	**340,087**	**338,682**
Reliable Replacement Warhead	**35,846**		**10,000**
Weapons Dismantlement and Disposition			
Weapons Dismantlement and Disposition	75,790	51,251	64,717
Device Assembly Facility	0	14,713	0
Pit Disassembly and Conversion Facility-O&M	0	12,664	52,105
Pit Disassembly and Conversion Facility-Construction	0	56,047	66,890
Subtotal, Weapons Dismantlement and Disposition	**75,790**	**134,675**	**183,712**
Stockpile Services			
Production Support	263,501	279,529	302,126
Research & Development Support	69,948	32,691	36,231
Research & Development Certification and Safety	190,131	178,504	193,375
Management, Technology, and Production	166,034	201,645	201,375
Responsive Infrastructure	26,813	0	0
Pit Manufacturing	0	0	145,269
Pit Manufacturing Capability	0	0	53,560
Subtotal, Stockpile Services	**716,427**	**692,369**	**931,936**
Total, Directed Stockpile Work	**1,430,192**	**1,401,252**	**1,675,715**

Outyear Funding Schedule

	FY 2010	FY 2011	FY 2012	FY 2013
Directed Stockpile Work				
Life Extension Programs				
B61 Life Extension Program	0	0	0	0
W76 Life Extension Program	196,216	183,846	177,000	189,758
W80 Life Extension Program	0	0	0	0
Subtotal, Life Extension Programs	**196,216**	**183,846**	**177,000**	**189,758**
Stockpile Systems				
B61 Stockpile Systems	111,268	121,620	120,217	129,333
W62 Stockpile Systems	113	0	0	0
W76 Stockpile Systems	63,015	54,478	51,701	39,742
W78 Stockpile Systems	44,518	30,041	31,352	33,278
W80 Stockpile Systems	33,494	33,199	33,833	33,470
B83 Stockpile Systems	26,645	26,009	27,765	31,490
W87 Stockpile Systems	34,448	30,651	25,559	25,037
W88 Stockpile Systems	37,133	31,746	29,298	29,620
Subtotal, Stockpile Systems	**350,634**	**327,744**	**319,725**	**321,970**
Reliable Replacement Warhead	**10,000**	**10,000**	**10,000**	**10,000**
Weapons Dismantlement and Disposition				
Weapons Dismantlement and Disposition	47,418	57,186	78,277	70,013
Device Assembly Facility	0	0	0	0
Pit Disassembly and Conversion Facility-O&M	75,629	89,986	88,754	94,930
Pit Disassembly and Conversion Facility-Construction	167,500	233,100	228,620	224,960
Subtotal, Weapons Dismantlement and Disposition	**290,547**	**380,272**	**395,651**	**389,903**
Stockpile Services				
Production Support	299,705	284,925	277,739	276,503
Research & Development Support	35,123	33,376	33,766	33,070
Research & Development Certification and Safety	171,196	165,207	165,563	168,303
Management, Technology, and Production	203,796	194,177	194,782	198,219
Responsive Infrastructure	0	0	0	0
Pit Manufacturing	150,094	153,373	140,186	141,592
Pit Manufacturing Capability	54,768	57,059	45,806	47,070
Subtotal, Stockpile Services	**914,682**	**888,117**	**857,842**	**864,757**
Total, Directed Stockpile Work	**1,762,079**	**1,789,979**	**1,760,218**	**1,776,388**

Description

The goal of the Directed Stockpile Work (DSW) program is to provide the nation with a credible nuclear deterrent by ensuring that the nuclear warheads and bombs in the U.S. nuclear weapons stockpile are safe, secure, and reliable. This is the core mission of Defense Programs (DP), supported and enhanced by the exceptional efforts of the campaigns and other DP mission areas. In addition, DSW is dedicated to reducing the total number of U.S. nuclear weapons through the Weapons Dismantlement and Disposition Program.

During the Cold War, the flexibility and reliability of the deterrent force was ensured by a large variety of weapons, a large quantity of weapons, and frequent replacement of aging designs. But the global strategic environment changed, the mission changed, and so the strategy to support that mission changed. In place of quantity, we enhance reliability, and in place of frequent replacement, we enhance longevity. In the FY 2008 Consolidated Appropriations Act (P.L. 110-161), Congress did not provide funding for the Reliable Replacement Warhead (RRW) and called for the Administration to submit a comprehensive nuclear weapons strategy for the 21st century. As a result, DSW will continue to maintain legacy weapons well beyond their intended life and must accomplish Life Extension Programs (LEP) in order to maintain the nuclear deterrent. The LEP strategy must incorporate enhanced safety, security, and replacement of obsolete equipment when possible in order to allow for a secure complex transformation.

To meet the enduring needs of strategic deterrence, the Nuclear Weapons Complex must meet national security requirements at a pace that matches evolving world events. This requires a more responsive infrastructure and fundamental change in the culture of the National Nuclear Security Administration (NNSA). To meet this challenge, the NNSA is employing four key enabling strategies: (1) partnership with the Department of Defense (DoD) to transform and modernize the nuclear stockpile; (2) transform to a modernized, cost effective complex; (3) create a fully integrated and interdependent complex; and, (4) drive the science and technology base essential for long-term National Security.

Specifically, DSW will, in coordination with the DoD: (1) efficiently refurbish weapons by installing the life extension solutions and other authorized modifications to correct technical issues and enhance safety, security, and reliability; (2) conduct evaluations to assess weapons reliability and to detect/anticipate potential weapon issues, mainly from aging; (3) conduct scheduled weapons maintenance; (4) produce and replace components with a limited life; (5) dismantle weapons retired from the stockpile; (6) develop concepts and programs which provide enhanced safety, security, and reliability for insertion into LEPs / Modifications / Alterations; (7) provide unique people, skills, equipment, testers, and logistics support to perform nuclear weapons operations; and, (8) quantify margins and uncertainties in order to better assess and certify the nuclear stockpile.

DSW sets the pace and scope for revitalization of the NNSA infrastructure. As stated in the Nuclear Posture Review provided to Congress in January 2002, a responsive infrastructure is a cornerstone of the nuclear triad and an important part of planning for the sustainable complex of the future. A responsive NNSA infrastructure – people, facilities, equipment, business practices, and technical processes – includes innovative science and technology research and development at the national laboratories and agile production facilities able to sustain the nuclear weapons stockpile and guarantee the nation's nuclear security in a dynamic and uncertain threat environment. The goal is to achieve a nuclear weapons enterprise that is sustainable, more cost-effective, more responsive to stockpile uncertainties and adverse geopolitical change, discourages adversaries from pursuing threatening activities, and enables increased reliance on deterrence through capability rather than on the number of weapons.

The FY 2008 Consolidated Appropriations Act (P.L. 110-161) provided funding to Weapons Dismantlement and Disposition for upgrading the Device Assembly Facility (DAF) at the Nevada Test Site for additional missions.

Starting with the FY 2009 budget, DSW will incorporate Pit Manufacturing. This adds two new subprograms to DSW Stockpile Services: Pit Manufacturing and Pit Manufacturing Capability. Pit Manufacturing provides the pits necessary to meet established stockpile requirements. Current

manufacturing activities focus on completing W88 pit requirements in support of stockpile surveillance. Subsequent to the W88 pit build, Pit Manufacturing will re-qualify manufacturing processes and equipment for a subsequent pit build in support of the current stockpile. Pit Manufacturing Capability will provide the capability to develop and manufacture plutonium pits to meet follow-on system design requirements as may be required in future LEPs.

U.S. Plutonium Disposition

The FY 2008 Consolidated Appropriations Act (P.L. 110-161) also transferred funding for the Pit Disassembly and Conversion Facility (PDCF) construction project from the NNSA Fissile Materials Disposition Program within Defense Nuclear Nonproliferation to DSW / Weapons Dismantlement and Disposition.

In September 2000, the United States and Russia signed a Plutonium Management and Disposition Agreement (PMDA), which commits each country to dispose of 34 metric tons of surplus weapon-grade plutonium (68 metric tons total -- enough material for approximately 17,000 nuclear weapons). In 2006, both the U.S. and Russian governments reaffirmed their commitment to implement the 2000 Agreement for disposing of their plutonium as mixed oxide (MOX) fuel in nuclear reactors. The NNSA is responsible for U.S. efforts to dispose of its weapon-grade plutonium and for supporting Russia's efforts to dispose of its surplus weapon-grade plutonium. This is a key element of the U.S. Government's nonproliferation strategy to address the potential threat of diversion of materials that can be used in nuclear weapons. In addition to the obvious nonproliferation benefits, proceeding with U.S. plutonium disposition will help reduce storage costs for nuclear materials, reduce safeguards and security costs, and support the Department's efforts to consolidate nuclear materials within the DOE Complex.

To dispose of surplus weapon-grade plutonium, both the United States and Russia will fabricate it into MOX fuel for use in nuclear reactors. Once irradiated, the plutonium is no longer readily useable for nuclear weapons. To implement this strategy in the United States, the NNSA will oversee the design, construction, and operation of a Pit Disassembly and Conversion Facility (PDCF), a Mixed Oxide Fuel Fabrication Facility (MFFF) and a Waste Solidification Building (WSB). These facilities will be built at the Department's Savannah River Site (SRS) near Aiken, South Carolina.

Within DSW, each of four major activities makes unique contributions to Government Performance and Reporting Act (GPRA) Unit Program Goal 2.1.26.00. The LEPs are currently working to extend the life of two nuclear weapon types (B61 and W76). In Stockpile Systems, activities ensure that the enduring stockpile is safe and reliable. Work in Stockpile Systems includes assessment and certification activities, limited life component exchange activities, surveillance activities, maintenance, safety studies, and military liaison work for the B61, W62, W76, W78, W80, B83, W87, and W88 weapon systems. In Weapons Dismantlement and Disposition (WDD), activities contribute to the goal by the dismantling and dispositioning of retired weapons and weapon components. Stockpile Services provides research, development, and production support base capabilities for multiple warheads; certification and safety efforts; quality engineering and plant management, technology, and production services; investigating options for meeting DoD requirements; Pit Manufacturing and Pit Manufacturing Capability; and, responsive infrastructure actions such as developing environmental impact statements.

Pit Manufacturing provides for the capability to manufacture, at capacity, the nuclear material trigger component that initiates the nuclear explosion within a nuclear weapon. Without this capability, it is not possible to build a modern nuclear weapon, respond to stockpile requirements, or manufacture new pit assemblies.

Pit Manufacturing is an essential element in the NNSA Complex Transformation strategy and supports certification planning and execution of pit builds beyond the W88. The future responsiveness of the nuclear weapons complex is tied to the capabilities and capacities of NNSA plutonium facilities. The current Complex Transformation planning scenario relies on Los Alamos National Laboratory (LANL) facilities to provide an interim plutonium pit manufacturing capability. Pit Manufacturing technology development supports maximizing and improving interim production at LANL for increased manufacturing capacity until a long term facility is operational; and lays the foundation for technology that would be used in a long term pit manufacturing facility.

To enhance flexibility and responsiveness to opportunities, LEP, Stockpile Systems, or Weapons D&D may support container work. The Readiness in Technical Base and Facilities (RTBF) container subprogram provides the base capability for container refurbishments. Due to the dynamic nature of production schedules and our desire to seize opportunities to increase dismantlement or production throughput when possible, the needs of DSW may exceed that base rate planned for by RTBF. In such cases, weapon-specific activities pertaining to production of new containers, the repair or modification of existing containers may use DSW subprogram funds to meet the needs beyond the rate the RTBF program can provide. In addition, in situations where secure communication with closed networks or secure databases is essential to meet program requirements, program funds may be used to provide connectivity between federal and non-federal sites within the nuclear weapons complex.

Planning and Scheduling

The DSW Program and Implementation Plans contain cost, scope, and schedule for work accomplishment. More detailed classified schedules are contained in the site Research & Development (R&D) and production documents. The Production and Planning Directive (P&PD) and the Stockpile Life Extension Options Component Description Document delineate current stockpile maintenance, refurbishment, and life extension efforts. These requirements are further promulgated to the Nuclear Weapons Complex (hereafter referred to as "the Complex") through individual weapon Program Control Documents (PCDs) and the Master Nuclear Schedule (MNS).

Weapons Systems Cost Data

A classified annex, which contains Selected Acquisition Reports (SARs) for the two LEPs, supplements the Weapons Activities portion of the budget.

Major FY 2007 DSW Achievements

Life Extension Programs

- Completed and delivered B61-7 Addendum to Final Weapon Development Report (October 2006)
- Completed final B61-7 Design Review and Acceptance Group (DRAAG) review (February 2007)
- Completed draft update to the B61 Major Assembly Release (February 2007)
- Completed B61-7 full scale production authorization activities & received full scale production authorization (May 2007)
- Completed B61-11 first production authorization activities & received first production authorization (December 2006)
- Achieved B61-11 First Production Unit (January 2007)
- Completed and delivered B61-11 Draft Addendum to Final Weapon Development Report (February 2007)
- Completed final update to B61 Major Assembly Release (April 2007)

- Completed final B61-11 Follow-on DRAAG review (June 2007)
- Completed W76-1 final hydrodynamic test (November 2006)
- Completed W76-1 Life Extension Program SS-21 Project for Assembly and Satellite Operations (July 2007)
- Granted W76-1 conditional authorization for first production unit and completed first prototype build for surveillance (September 2007)
- Completed W76-1 Arming, Fuzing, and Firing environmental testing (May 2007)
- Completed W80-3 production shut-down activities (March 2007) - 6 months early.

Reliable Replacement Warhead
- Selected design team for Reliable Replacement Warhead (WR1)
- Initiated RRW-2 Phase 1 (Concept Study)
- Received Nuclear Weapons Council (NWC) authorization for Phase 2A Design Definition and Cost Study.

Stockpile Systems
- Completed all limited life component exchange requirements
- Completed all annual assessment reports
- Completed all requirements for certification of the stockpile without nuclear testing
- Completed W88 rebuild with a Los Alamos produced pit and 4T gas transfer system (September 2007)
- Completed B61-7 ALT 358 first production unit (December 2006)
- Completed B61-11 ALT 359 first production unit (January 2007)
- Completed B61-3/4/10 ALT 356 first production unit (December 2006) - 1 month early
- Achieved full scale production authorization for B61 ALT 356/358/359 (April 2007)
- Implemented the FY 2007 surveillance sampling transition per the approved Surveillance Transformation Project Plan FY 2007 activities (June 2007) and eliminated the surveillance backlog for all authorized systems consistent with the enhanced surveillance strategy.
- Completed testing and delivered W76-1 1E33 Detonator Cable Assemblies (March 2007) - 5 months early
- Received B83 SS-21 authorization (November 2006)
- Completed B83 assessment activities to include quantification of margins and uncertainties (June 2007)
- Completed W88 Cell Operations Restart Project (CORP) (February 2007).

Weapons Dismantlement & Disposition
- Exceeded dismantlement goal for retired weapons at Pantex and Canned Subassemblies (CSA) at Y-12
- Completed the CSA dismantlement of four systems at Y-12 (W56, B61-2, B61-5, W55)
- Continued with SS-21 for weapon operations at Pantex for the B53
- Completed B53 Shipments from the Air Force to Pantex.

Stockpile Services
- Completed T568 purge, backfill, and leak test system first production unit (October 2006)
- Completed draft life extension option tables for the Component Description Document (CDD) (June 2007)

- Developed FY 2007 Joint National Hydrodynamic Test Plan (April 2007)
- Completed demonstration of the 3 kilovolt operation of miniature monolithic capacitor discharge unit as applicable for fireset (June 2007)
- Completed Permissive Action Link Concept of Operations Document (March 2007) - 6 months early
- Completed demonstration of three ASIC Yield Capability by achieving greater than 10 percent functional wafer die yield on the complex ViArray Fast Turn ASIC platform (March 2007) - 6 months early
- Developed report on nuclear safety research and development cross cut, which will facilitate, coordinate, and integrate nuclear safety research and development activities across programs and across the Complex
- Finalized policies on assessments using quantified margins and uncertainties
- Developed and implemented National Joint Test Assembly Plan
- Completed actions within the Pantex Throughput Improvement Plan, increasing deliverables 24%
- Developed and began executing the Y-12 Throughput Improvement Plan
- Supported development of the Defense Programs National Work Breakdown Structure.

Major Outyear Considerations

The outyear projections for DSW total $7,088,664,000 from FY 2010 through FY 2013. The trend throughout the four-year period is relatively level. During this period, DSW, in coordination with the DoD, will initiate a new LEP for the B61 while researching, developing, and producing required weapon upgrades/modifications. DSW will continue to provide a safe, secure, and reliable stockpile by supporting major deliverables to include: ramp-up and support of the W76 LEP rate production; completion of the B61 spin rocket motor refurbishment program in FY 2012; and, stockpile assessment activities. In addition, DSW will continue to support the reduction of the nation's nuclear weapons stockpile through the dismantlement and disposition of retired weapons. Part of the strategy to support Complex Transformation within the current funding profile requires a balancing of near-term deliverables with long-term needs. Defense Programs is accepting additional risk to the infrastructure by deferring maintenance and equipment procurements. These risks have been evaluated to be acceptable as long as Complex Transformation proceeds on schedule. Defense Programs will need to re-evaluate these risks and funding priorities should there be delays to Complex Transformation.

The budget for Pit Manufacturing and Pit Manufacturing Capability reflects the costs to maintain the pit manufacturing infrastructure; complete W88 build requirements; improve the manufacturing infrastructure to increase the interim pit manufacturing capacity as required; and to support initial development and qualification of processes and equipment for the next pit type to be manufactured.

Program Assessment Rating Tool (PART)

The Department implemented a tool to evaluate selected programs. The PART was developed by the Office of Management and Budget (OMB) to provide a standardized way to assess the effectiveness of the Federal Government's portfolio of programs. The structured framework of the PART provides a means through which programs can assess their activities differently than through traditional reviews. The DSW program has incorporated feedback from the OMB into the FY 2009 Budget Request, and has taken or will take the necessary steps to continue to improve performance.

The results of the OMB review are reflected in the FY 2006 Budget Request. The OMB gave DSW scores of 100 percent on the Program Purpose and Design and Strategic Planning Sections; 88 percent on the Program Management Section; and 74 percent on the Program Results and Accountability

Section. Overall, the OMB rated the DSW program 84 percent, its second highest category of "Moderately Effective." The OMB assessment found that the program appears to be well managed, with a clear and unique purpose and clear, meaningful, and measurable performance metrics that the program was demonstrating good progress in meeting. The OMB also encouraged efforts to be cost-effective. In response to the OMB findings, the NNSA is continuing to improve contractor evaluation processes and weapon performance metrics, and monitor the new DSW efficiency measure to determine if it provides insight into additional cost-effective opportunities. The NNSA is also continuing to improve the responsiveness of the Nuclear Weapons Complex infrastructure by coordinating program activity with the Nuclear Weapons Complex Transformation Strategy Record of Decision and by integrating program requirements into the new Defense Programs National Level Work Breakdown Structure.

Annual Performance Results and Targets

(R = Results; T = Target)

Performance Indicators	FY 2005 Results	FY 2006 Results	FY 2007 Results	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Endpoint Target
Strategic Goal 2.1 (Nuclear Deterrent) GPRA Unit Program Goal 2.1.26.00, Directed Stockpile Work										
Annual percentage of warheads in the Stockpile that are safe, secure, reliable, and available to the President for deployment (Annual Outcome)	R: 100% T: 100%	R: 100% T: 100%	R: 100% T: 100%	T: 100%	T: 100%	T: 100%	T: 100%	T: 100%	T: 100%	Annually, maintain 100% of the warheads in the stockpile as safe, secure, reliable, and available to the President for deployment.
Annual percentage of items supporting Enduring Stockpile Maintenance completed (Annual percentage of prior-year non-completed items completed) (Annual Output)	R: 44% (85%) T: 95% (100%)	R: 84% (100%) T: 95% (100%)	R: 95% (100%) T: 95% (100%)	T: 95% (100%)	T: 95% (100%)	T: 95% (100%)	T: 95% (100%)	T: 95% (100%)	T: 95% (100%)	Annually, complete at least 95% of all scheduled maintenance activity (100% of prior-year non-completed items).
Cumulative percentage of progress in completing Nuclear Weapons Council (NWC)-approved W76-1 Life Extension Program (LEP) activity (Long-term Output)	R: 29% T: 29%	R: 34% T: 34%	R:37.9% T: 39%	T: 44%	T: 49%	T: 54%	T: 59%	T: 64%	T: 69%	By 2021, complete NWC-approved W-76-1 LEP.
Cumulative percentage of progress in completing NWC-approved B61-7/11 LEP activity (Long-term Output)	R: 27% T: 30%	R: 37% T: 40%	R: 70% T: 70%	T: 90%	T: 100%	T: N/A	N/A	N/A	N/A	By 2009, complete NWC-approved B61-7/11 LEP.
Cumulative percent reduction in projected W76 warhead production costs per warhead from established validated baseline, as computed and reported annually by the W76 LEP Cost Control Board (Efficiency)	N/A	R: Baseline T: Baseline	R: 0.39% T: 0.50%	T: 1.0%	T: 1.5%	T: 2.0%	T: 2.0%	T: 2.0%	T : 2.0%	By 2010, reduce the projected W76-1 LEP warhead production costs per warhead from established validated baseline by 2.0% (interim target).

Detailed Justification

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
Life Extension Program (LEP)	**273,624**	**234,121**	**211,385**

NNSA developed the LEP to extend the expected stockpile lifetime of a warhead or warhead components at least 20 years with a goal of 30 years. NNSA, in conjunction with the applicable service from the DoD, executes an LEP following the procedural guidelines of the Phase 6.x process. The activities comprise the research, development, and production work required to ensure weapons will continue to meet requirements.

- **B61 Life Extension Program** **58,160** **61,908** **2,189**

  This LEP extends the life of the B61 Mods 7 and 11 Canned Subassemblies (CSA) for an additional 20 years. The CSA is a major component of the nuclear explosive package. The B61 LEP includes refurbishment of the CSA and replacement of associated seals, foam supports, cables and connectors, the group X kit (e.g., washers, o-rings, etc.), and limited life components. This budget element does not include any work associated with needed non-nuclear refurbishment of the B61, which will be a follow-on program, if approved.

  In FY 2009, programmatic activities will include completing production. Specifically, the laboratories will provide production liaison support and the plants will continue production rates that meet DoD requirements. All sites will complete actions needed to close out the program.

- **W76 Life Extension Program** **207,312** **172,213** **209,196**

  The W76 LEP will extend the life of the W76 for an additional 30 years with the first production unit (FPU) targeted in FY 2008. Activities include design, qualification, certification, production plant Process Prove-In (PPI), and Pilot Production. The pre-production activities will ensure the design of refurbished warheads meets all required military characteristics. Additional activities include work associated with the manufacturability of the components including the nuclear explosive package; the Arming, Fuzing, and Firing system; gas transfer system; and associated cables, elastomers, valves, pads, cushions, foam supports, telemetries, and miscellaneous parts. Final design of the CSA depends on resolution of a major technical challenge with the production of a critical material. Planned FY 2009 workscope is predicated on successful resolution of this technical challenge in FY 2008. To ensure a successful resolution in FY 2008, NNSA will continue to aggressively work to resolve the material issue and pursue an alternate material study. Production activities will continue, allowing the Pantex Plant to build and dismantle prototype units with surrogate CSAs that will provide important surveillance data. DSW will use cost control measures as Defense Programs endeavors to meet the rebaselined delivery to the DoD in support of Initial Operational Capability (IOC) requirements and achieve production rates consistent with the P&PD. Hardware production will continue at an optimized rate to maintain production certification requirements. In addition, the program will work to maintain the baseline plan for purchase of materials with sufficient lead time for the economical purchasing strategy, fabrication of required subassembly at Y-12, and purchase of critical tooling for production capacity at Pantex.

  Based upon the resolution of the material issue in FY 2008, NNSA will ramp up to full production in FY 2009 in accordance with the approved baseline. Additionally, laboratories will provide production liaison support at the plants including systems design support for production of piece parts by the production plants, initiate necessary production definition changes to improve manufacturability and

disposition instructions for production issues, complete qualifications, and publish the Major Assembly Release (MAR) for submission to the Design Review and Acceptance Group (DRAAG). Production plants will continue to support production of piece parts and components, delivery of ship entities to the next user, and final assemblies to the DoD.

- **W80 Life Extension Program** **8,152** **0** **0**

The original objective of the W80 LEP was to extend the life of the warhead for an additional 20 years. Based on a decision by the DoD to reduce the number of W80 weapons, the program was canceled.

Stockpile Systems **328,505** **340,087** **338,682**

Each weapon type in the stockpile requires ongoing assessment and certification activities, routine maintenance; periodic repair; cyclical replacement of limited life components; surveillance; required alterations, modifications, and safety studies; resolution of Significant Finding Investigations (SFIs); and other support activities. The sections below describe those specific activities by weapon-type.

- **B61 Stockpile Systems** **66,870** **64,937** **80,434**

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

In FY 2009, the program will focus on preparing for a Life Extension Phase 6.2 study to address aging and reliability issues: supporting production quantities per DoD requirements for spin rocket motor parts(Alts 356/358/359); supporting the annual assessment, and certification process; providing laboratory and management support to the Project Officers Group (POG) and DoD Safety Studies; supporting resolution of SFIs; submission of data for surveillance cycle reports; conducting integrated experiments per current approved baseline plan; producing the 1M and 2M gas reservoirs; continuing surveillance tests; disassembling and inspecting the stockpile laboratory tests units; and conducting component laboratory tests and stockpile flight tests for stockpile evaluation.

- **W62 Stockpile Systems** **2,170** **2,122** **1,645**

The W62 is a warhead used in the Air Force's Mk-12 re-entry vehicle on the Minuteman III intercontinental ballistic missile (ICBM).

In FY 2009, enduring stockpile activities include: supporting the annual assessment and certification process; providing laboratory and management support to any POG and DoD Safety Studies; and supporting resolution of SFIs.

- **W76 Stockpile Systems** **59,493** **72,727** **68,418**

The W76 is the warhead used in the Navy's Mk-4 re-entry body on the Trident II Submarine Launched Ballistic Missile (SLBM).

In FY 2009, enduring stockpile workload efforts will include: supporting the annual assessment and certification process; providing laboratory and management support to the POG and DoD Safety

Studies; limited life component exchange activities; supporting resolution of SFIs; submission of data for surveillance cycle reports; disassembling and inspecting the stockpile laboratory tests units; conducting component laboratory tests and stockpile flight tests for stockpile evaluation; and producing 1E33 detonators. Additionally, due to delays in production start-up for the W76-1, the NNSA must produce additional 1X Acorn limited life components for the W76-0.

- **W78 Stockpile Systems** **38,165** **38,577** **43,349**

The W78 is a warhead used in the Air Force's Mk-12A re-entry vehicle on the Minuteman III ICBM.

In FY 2009, enduring stockpile workload efforts will include: production of the MC 4381 Neutron Generator and the LF7A Gas Transfer System Reservoir; supporting the annual assessment and certification activities process; providing laboratory and management support to the POG and DoD Safety Studies; limited life component exchange activities; supporting resolution of SFIs; submission of data for surveillance cycle reports; disassembling and inspecting the stockpile laboratory and flight test units; and conducting component laboratory tests and stockpile flight tests for stockpile evaluation.

- **W80 Stockpile Systems** **33,178** **28,124** **32,034**

The W80 is a warhead used in the Air Launched Cruise Missile deployed by the Air Force and the TLAM-N deployed by the Navy.

In FY 2009, enduring stockpile workload efforts will support the POG and DoD safety studies; annual assessment and certification activities; limited life component production; resolution of SFIs; submission of data for surveillance cycle reports; continuing surveillance tests; disassembling and inspecting the stockpile laboratory test units; completion of joint test assembly development; and conducting component laboratory tests and stockpile flight tests for stockpile evaluation.

- **B83 Stockpile Systems** **23,954** **23,809** **25,759**

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

In FY 2009, activities include: continuing support for retrofit activities; supporting the annual assessment and certification process; providing laboratory and management support to the POG and DoD Safety Studies; limited life component exchange activities; supporting resolution of SFIs; conducting material, component, and system level testing and evaluating performance and safety characteristics; surveillance of B83 detonators and pits in support of the annual assessment effort; accomplishing stockpile laboratory and flight tests; and completing the disassembly and inspection of stockpile laboratory and flight test units.

- **W87 Stockpile Systems** **59,165** **54,329** **37,189**

The W87 is a warhead used in the Air Force's Mk-21 re-entry vehicle on the Minuteman III ICBM.

In FY 2009, programmatic activities include: supporting the annual assessment process and certification activities; providing laboratory and management support to the POG and DoD Safety Studies; limited life component exchange activities; supporting resolution of SFIs; conducting material, component, and system level testing; evaluating performance and safety characteristics;

production through FY 2010 of environmental sensing devices, firing sets, and lightning arrestor connectors in support of surveillance rebuilds; restarting production of other Neutron Generator components in support of future builds; developing a new W87 stockpile flight test vehicle; conducting disassemblies and inspections of stockpile laboratory test units and stockpile flight test units; production of joint test assemblies and test beds; and providing range support and data collection of W87 stockpile flights.

- **W88 Stockpile Systems** **45,510** **55,462** **49,854**

  The W88 is the warhead used in the Navy's Mk-5 re-entry body on the Trident II SLBM.

  In FY 2009, activities include: providing laboratory and management support to the POG and DoD Safety Studies; supporting resolution of SFIs; submitting data for surveillance cycle reports; conducting integrated experiments as stated in the approved baseline plan; supporting the annual assessment and certification process; conducting disassembly and inspection of stockpile laboratory test units and stockpile flight test units; producing joint test assemblies and test beds; SS-21 authorization activities at Pantex; continuing production of 4T reservoir and forging procurements; and production of W88/Mk5 warheads using Los Alamos National Laboratory (LANL) produced pits and 4T gas transfer systems.

Reliable Replacement Warhead **35,846** **0** **10,000**

Congress did not provide funding for the RRW program in FY 2008 and called for the Administration to submit a comprehensive nuclear weapons strategy for the 21st century.

The funding will enable maturation of the RRW design to address questions raised by the JASON review of RRW feasibility study activities. Design refinement is necessary to establish parameters for potential impact on certification among other things. Without further design work, there is insufficient detail available to use this design to resolve certification questions raised by the JASONs review. This funding will also facilitate continued progress on the Phase 2A RRW work, that has been completed through 2007 (prior to the FY 2008 Consolidated Appropriations Act (P.L. 110-161)) to support future administration decisions on options for our nuclear weapons stockpile. The Department of Defense and the Joint DoD-DOE Nuclear Weapons Council fully support continuing efforts to examine how the RRW concept can address issues of safety, security and long-term reliability of the nation's nuclear deterrent.

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
Weapons Dismantlement and Disposition	**75,790**	**134,675**	**183,712**
▪ **Weapons Dismantlement and Disposition**	**75,790**	**51,251**	**64,717**

Weapons Dismantlement and Disposition (WDD) is a critical element of NNSA's integrated effort to transform the complex and the stockpile. Reducing the total number of U.S. nuclear weapons sends a clear message to the world that critical modernization programs do not signal a return to the arms race of the Cold War. WDD includes activities that support or perform tasks to reduce the quantity of retired weapons or retired weapon components in the inventories, to include the interim storage, surveillance, and complete disposition of retired weapons and weapon components. Specific activities include weapon dismantlement, characterization of components, disposition of retired warhead system components, and surveillance of selected components from retired warheads. Other supporting activities specific to retired warheads include: conducting facility hazard assessments including studies of lightning, environmental sensing devices, and fire protection; issuing safety analysis reports; conducting laboratory and production plant safety studies in implementation of SS-21; procuring shipping and storage equipment; providing oversight of testers; and supporting the Tri-laboratory office efforts on dismantlement activities. In addition, for WDD to be successful, supporting programs must receive balanced funding: Production Support for shipping, receiving, and equipment maintenance; RTBF for infrastructure sustainment and containers; and Secure Transportation Asset for movement of weapons and components.

In FY 2009, dismantlement activities continue to take advantage of increased prior year work that developed and funded dismantlement processes, tooling and logistics equipment. The program includes a continued focus on increasing the throughput of weapon dismantlements at Pantex and CSA disassembly at Y-12. At Pantex, the WDD program plans for FY 2009 include activity for portions of the W62, B61, and B83, in addition to SS-21 activities for the W84 and B53. Other activities include continued use of multi-shift operations to ensure maximum throughput and utilization of resources. Activities at Y-12 include continued increases in CSA disassembly and disposition to reduce the footprint for Enriched Uranium storage and processing. CSA dismantlement programs planned at the Y-12 in FY 2009 include portions of the W68 and B61.

Y-12 will also continue to pursue efficiency measures on the dismantlement line to include wireless tracking and the implementation of lathes purchased in late 2007. The funding requested for FY 2009 closely reflects resources required to complete the dismantlement workload consistent with the accelerated dismantlement schedule submitted to Congress in March 2006.

▪ **Device Assembly Facility**	**0**	**14,713**	**0**

In the FY 2008 Consolidated Appropriations Act (P.L.110-161), funding was provided for upgrading the Device Assembly Facility (DAF) at the Nevada Test Site for additional missions. There is no planned FY 2009 or out-year funding anticipated for this activity.

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
▪ **Pit Disassembly and Conversion Facility – O&M**	**0**	**12,664**	**52,105**
• **Pit Disassembly and Conversion Facility (PDCF) (OPC)**	**0**	**7,664**	**32,518**

In FY 2009, NNSA will continue to operate a demonstration system: the Advanced Recovery and Integrated Extraction System (ARIES), at LANL to demonstrate pit disassembly and plutonium conversion technology and at the same time produce plutonium oxide feedstock for the MOX Facility before PDCF comes on line. The Savannah River Site (SRS) Management and Operating (M&O) contractor will continue to provide design support and development of systems to support glovebox design and operations.

• **Waste Solidification Building (WSB) (OPC)**	**0**	**5,000**	**5,000**

In FY 2009, these funds will support beginning construction of the WSB, design authority activities and reviews, conducting analysis to verify acceptability of the cement formulations, environmental permitting activities and preparation of initial operating and testing procedures.

• **Supporting Activities**	**0**	**0**	**14,587**
• **Surplus Plutonium Storage and Transportation**	**0**	**0**	**11,592**

This funding provides for the storage of surplus plutonium at Pantex and LANL until the plutonium is transferred to SRS for disposition. FY 2009 activities include continuing to store surplus plutonium at Pantex and LANL; continuing to upgrade surplus pit storage facilities and surveillance equipment at Pantex; continuing to package surplus pits for shipment from Pantex to LANL for ARIES (the pits are needed as feed material to validate equipment for the PDCF).

In addition, certification of the new surplus pit shipping container for future shipments of surplus pits from Pantex to SRS for the start of disposition will be completed and fabrication of the pit shipping containers will begin.

• **National Environmental Policy Act (NEPA)**	**0**	**0**	**500**

National Environmental Policy Act (NEPA) activities include preparing and reviewing Environmental Assessments and Environmental Impact Statements (EIS), as required. FY 2009 activities include preparing/completing a Supplemental (EIS) for the Surplus Plutonium Disposition Program and amended Record of Decision. Significant changes were recently proposed for the MOX program, i.e. treating additional impure plutonium and 9 MT of new plutonium pits at the MOX facility. Adding additional material through the MOX facility requires a more thorough NEPA analysis than was originally intended (Supplemental EIS). The EIS needs to be coordinated with the Office of Environmental Management and requires public meetings, publishing a detailed document, and notice in the Federal Register and would involve several programs with the Department. Also, it will include reviewing existing and new environmental documents for activities affecting the fissile material disposition program.

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
• **Common Technologies and Integration**	**0**	**0**	**2,495**

Plutonium Disposition Program Integration Activities: Funding supports activities to ensure that the interface activities among the Plutonium Disposition Projects (MFFF, PDCF, and WSB) are integrated and accomplished in support of the project schedules. Activities include implementing and maintaining an integrated Plutonium Disposition Plan (PDP) Execution Plan, integrating schedules, and programmatic risk analyses, which are used to assess and manage the program risks. This funding supports efforts common to the MFFF, PDCF, and the WSB, including transfer and receipt of nuclear materials between facilities. Minor routine maintenance and upkeep of the PDP site improvements and infrastructure common to all three projects is included in this workscope.

▪ **Pit Disassembly and Conversion Facility – Construction**	**0**	**56,047**	**66,890**
• **99-D-141-01, Pit Disassembly and Conversion Facility (PDCF)**	**0**	**22,447**	**26,890**

The PDCF will provide the United States with the needed capability to disassemble large numbers of surplus nuclear weapons pits and convert the resulting plutonium metal to plutonium oxide. Once in powder oxide form, the plutonium will be transferred to the MFFF where it will be fabricated into MOX fuel. The PDCF will be a complex consisting of a hardened building containing the plutonium processes and conventional buildings and structures that will be used for support personnel, systems, and equipment. The plutonium processing building will contain the following key areas: pit shipping and receiving; assay and storage; pit disassembly and oxide conversion; and plutonium oxide packaging, assay, storage, and shipment. The DOE awarded a contract to Washington Group International in 1999 to design this facility, which will be built at SRS.

FY 2009 activities include bringing the final design to 85% completion, preparing necessary documentation for requesting Critical Decision (CD) -3, Approval to Start Construction and procuring long-lead equipment in FY 2010.

• **99-D-141-02 Waste Solidification Building (WSB)**	**0**	**33,600**	**40,000**

The WSB will receive liquid waste streams from the MFFF and the PDCF. The waste will be chemically treated and solidified for ultimate disposal at off-site locations. The WSB is a hardened facility that will contain storage tanks, evaporators, and cementation equipment, and will include an adjacent storage facility for drums awaiting transfer to SRS packaging facilities. The WSB is being designed by Washington Savannah River Company, the SRS M&O contractor, which will be responsible for managing the construction of the WSB and will competitively bid all construction subcontracts.

FY 2009 activities include beginning facility construction and continuation of long-lead equipment procurements.

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
• **Stockpile Services**	**716,427**	**692,369**	**931,936**

Stockpile Services provides the foundation for the production capability and capacity within the nuclear weapons complex to meet today's DoD requirements and will allow NNSA to sustain delivery of products in the future. All enduring systems, LEPs, and dismantlements rely on Stockpile Services to provide the base production and logistics capability needed to meet program requirements. In addition, Stockpile Services covers research, development and production work that supports two or more weapon-types, work that is not identified or allocated to a specific weapon-type, and those activities where the association of the cost to a specific weapons system is classified.

A major addition to Stockpile Services in FY 2009 is pit production. This adds two new subprograms, Pit Manufacturing and Pit Manufacturing Capability described below. The successful completion of the Pit Campaign to establish a pit production capability at LANL allowed for the dissolution of the Pit Campaign and the transfer of the production mission to DSW.

▪ **Production Support**	**263,501**	**279,529**	**302,126**

Production Support includes those activities that directly support each internal site-specific production mission. In this context, the term "support" refers to site-specific personnel and routine functional activities associated with keeping the basic site capability and capacity at a sufficient level to meet current production requirements, while modernizing the production capabilities at each site to meet established future requirements. The production mission is defined as weapon assembly, weapon disassembly, component production, and weapon safety and reliability testing.

In FY 2009, production work activities will increase in direct proportion to the increased workload associated with the W76 LEP and accelerating the pace of dismantlements. Additionally, new work scope includes support to the Kansas City initiative to move to a smaller, more efficient production facility. Another area of new work is the modernization of the production plant capabilities to achieve more agile manufacturing. Ongoing activities will be focused on: sustaining and modernizing engineering and manufacturing operations; quality supervision and control; tool, gauge, and test equipment procurement, maintenance, and inspection; purchasing, shipping, and material support; increasing production efficiency; and developing and maintaining electronic product-flow information systems. These activities will directly support implementation of the concepts of systems engineering and production integration in support of more cost-effective plant manufacturing and improved activity-based costing in preparation for approved increases in production activities.

▪ **Research & Development (R&D) Support**	**69,948**	**32,691**	**36,231**

R&D Support includes ongoing activities that directly support the internal design laboratory site-specific R&D mission. It includes stockpile studies and programmatic work that provide the necessary administrative or organizational infrastructure to support internal laboratory R&D activities.

In FY 2009, activities include: R&D infrastructure support, providing the understanding and integration of DSW, Campaigns, and RTBF requirements, and support of quality assurance programs for multiple systems.

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
▪ **Research & Development (R&D) Certification and Safety**	**190,131**	**178,504**	**193,375**

R&D Certification and Safety activities provide underlying capabilities for R&D efforts at design laboratories and the Nevada Test Site (NTS) in support of the stockpile. These activities include the basic research required for developing neutron generators and gas transfer systems, surveillance activities, and the base capability for conducting hydrodynamic experiments. The neutron generator and gas transfer research is typically beyond the basic research of a Campaign and is the first stage of technology weaponization. It also includes an experimental program for plutonium and sub-critical experiments.

In FY 2009, activities include: performing nuclear safety R&D studies; weapons effects studies; preparing and providing the infrastructure for conducting hydrodynamic tests in support of enduring stockpile systems and life extension programs; continuing to support neutron generator development (electronic and small generator types); designing gas transfer systems; continuing to develop digital and analog arming and firing subsystems; conducting qualification/certification and computer modeling and simulation activities that are required; conducting system/component surveillance evaluations to analyze results obtained from component and flight testing supporting the DOE/DoD Munitions Memorandum of Understanding; continuing primary, secondary, chemistry, materials, and systems analysis in support of the stockpile and Annual Assessments; and support of the dynamic plutonium experiment program.

▪ **Management, Technology, and Production**	**166,034**	**201,645**	**201,375**

Management, Technology, and Production (MTP) activities are those activities that sustain and improve stockpile management, develop and deliver weapon use control technologies, and production of weapon components for use in multiple weapons systems. Additionally, MTP includes those activities that benefit the weapons complex mission as a whole, as opposed to Production Support activities that only support internal site-specific production missions only.

In FY 2009, MTP will: improve safety and use control technologies; conduct use control and independent assessments; and, procure and deliver multi-use weapon components, material, and support equipment. This increased funding is offset by the transfer of Nuclear Counterterrorism Design Support to Nuclear Weapons Incident Response prior to the start of FY 2009. Moreover, MTP will: continue to implement the stockpile Surveillance Transformation Project to improve the evaluation of aging weapons to discover problems earlier; implement and maintain Complex-wide integrated product-realization digital information systems for DSW for design, engineering, manufacturing and quality control releases; deploy new diagnostics delivered by the Enhanced Surveillance Campaign; maintain access to and archive technical knowledge, engineering practices, weapon design, safety, and operating procedure information; support and conduct activities that deploy, maintain, and evaluate stockpile multi-use components, and instrumentation; and, evaluate stockpile multi-use components, instrumentation, and ancillary equipment.

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
▪ **Responsive Infrastructure**	**26,813**	**0**	**0**

A responsive infrastructure involves the people, business practices, technical processes, equipment and facilities required to support the nuclear weapons stockpile in a timely and sustainable manner. These resources support actions by the NNSA Office of Transformation to facilitate Complex Transformation implementation.

▪ **Pit Manufacturing**	**0**	**0**	**145,269**

The Pit Manufacturing subprogram objective is to manufacture pits in limited quantities, maintain an interim pit manufacturing capability at existing LANL facilities, establish the capability to manufacture pits other than the W88 pit, and improve manufacturing processes used to manufacture all pit types. In FY 2007, LANL completed the establishment of a 10 pit per year manufacturing capacity at LANL and manufactured the first war reserve W88 pit since the cessation of manufacturing operations at the Rocky Flats Plant in 1989.

FY 2009 activities will focus on the continued manufacture of war reserve pits as replacements for W88 pits in the stockpile that undergo destructive surveillance, and work to increase the pit manufacturing capacity to a level from 50 to 80 pits per year in alignment with an operational date for new analytical chemistry and vault storage space. In order to achieve this goal, Pit Manufacturing will hire additional personnel, procure additional equipment and implement improvements to the manufacturing infrastructure through technology development as part of the Pit Capability activity. In addition, the Pit Manufacturing subprogram will continue to support planning for consolidating Lawrence Livermore National Laboratory (LLNL) plutonium activities to LANL and the associated space planning and movement of selected program missions.

• **Pit Manufacturing Capability**	**0**	**0**	**53,560**

The Pit Manufacturing Capability subprogram objective is to establish the capability to manufacture replacement pits other than the W88 pit, improve manufacturing processes used to manufacture all pit types, and develop the processes and equipment necessary to manufacture pits for future requirements. The processes and technologies in development support NNSA goals that include producing less waste, lowering the radiation dose to facility operators, and reducing per unit costs of manufacturing pits.

The pit manufacturing process development effort in this subprogram objective supports short and long-term pit manufacturing goals. Complex Transformation goals of establishing a manufacturing capacity at TA-55 at LANL of 50 to 80 net pits to the stockpile requires upgrades to LANL manufacturing equipment using the improved technology being developed by this program element.

In FY 2009, activities will continue the technical assessment and documentation of manufacturing processes necessary for all pits currently in the nuclear weapons stockpile, development of an improved fabrication line for machining and gauging plutonium, final testing of the tilt pour furnace, and investigating improved casting processes applicable to legacy pits.

Total, Directed Stockpile Work	**1,430,192**	**1,401,252**	**1,675,715**

Explanation of Funding Changes

	FY 2009 vs. FY 2008 ($000)
Life Extension Programs	
▪ **B61 Life Extension Program**	
This decrease is due to full-scale production being completed at Y-12 in FY 2008. In FY 2009, programmatic activities will focus on completing Pantex production quantities to meet DoD deliveries and the close-out of the program at all sites.	-59,719
▪ **W76 Life Extension Program**	
The funding increase from FY 2008 to FY 2009 represents a ramp up to full-rate production consistent with the current program baseline. This includes: Kansas City Plant (KCP) procured vendor supplied components; KCP, Pantex and Y-12 production of capacity tooling; and all site production support to produce refurbishment components. This funding request is contingent upon successful resolution of issues affecting CSA production at Y-12 in FY 2008.	+36,983
Total, Life Extension Programs	**-22,736**
Stockpile Systems	
▪ **B61 Stockpile Systems**	
This increase in funding reflects the funds required to support planning for life extension options involving the radar/programmer refurbishment ALTs 364/365/366 and other future B61 Alterations. A Phase 6.2 study will be initiated in FY 2009 to address critical aging and reliability issues and evaluate implementation of safety and security improvements.	+15,497
▪ **W62 Stockpile Systems**	
This decrease reflects a program change in the system.	-477
▪ **W76 Stockpile Systems**	
This decrease results in a slow down in surveillance and certification activities, which can result in reduced confidence in the Annual Assessment process.	-4,309
▪ **W78 Stockpile Systems**	
This increase relates to peak production for two sets of components, the MC 4381 Neutron Generator and the LF7A Reservoir planned for FY 2009.	+4,772

	FY 2009 vs. FY 2008 ($000)
▪ **W80 Stockpile Systems**	
The increase supports the final development, test, procurement, and engineering support activities required to successfully achieve Joint Test Assembly (JTA) FPU and PCD production quantities in FY 2009.	+3,910
▪ **B83 Stockpile Systems**	
This increase is the result of gas transfer and neutron generator replacement initiatives ramping up to support retrofit planning.	+1,950
▪ **W87 Stockpile Systems**	
This decrease reflects a reduction in component production and warhead rebuild activities.	-17,140
▪ **W88 Stockpile Systems**	
This decrease is due to completion of SS-21 activities midway through FY 2009. Additionally, the program will not accelerate surveillance and certification activities, which can result in reduced confidence in the Annual Assessment process.	-5,608
Total, Stockpile Systems	**-1,405**
Reliable Replacement Warhead (RRW)	
This increase funds maturation of RRW design concepts to address questions raised by the JASONs review of RRW feasibility study activities and documenting the Phase 2A RRW work that has been completed through FY 2007.	+10,000
Total , Reliable Replacement Warhead	**+10,000**
Weapons Dismantlement and Disposition	
▪ **Weapons Dismantlement and Disposition**	
This increase represents increased weapon and CSA dismantlements and increased component disposition at Pantex and Y-12 essential for continued dismantlement throughput. Increase also supports SS-21 for both the B53 and the W84 at the Pantex Plant. At Y-12, the increase will go towards continued planning and development of dismantlement processes for two high complexity dismantlement systems.	+13,466

	FY 2009 vs. FY 2008 ($000)
▪ **Device Assembly Facility**	
Congressionally directed activity in FY 2008, but no follow-on activities are planned in FY 2009.	-14,713
▪ **Pit Disassembly and Conversion Facility – O&M**	
Reflects required O&M funding for Pit Disassembly and Conversion to support the continuation of ARIES testing and demonstration at LANL, operating support for the Waste Solidification Building, and storage of surplus plutonium at Pantex and LANL.	+39,441
▪ **Pit Disassembly and Conversion Facility – Construction**	
Supports the start of construction for the Waste Solidification Building subproject and the construction for the Pit Disassembly and Conversion Facility subproject.	+10,843
Total, Weapons Dismantlement and Disposition	**+49,037**

	FY 2009 vs. FY 2008 ($000)
Stockpile Services	
▪ **Production Support**	
Within Stockpile Services, increased funding reflects increased production support requirements for advanced production of components to allow the Kansas City Plant to transition to a smaller, more efficient manufacturing facility and additional replacement of aging equipment and completing essential repairs across the complex.	+22,597
▪ **Research & Development Support**	
This increase supports additional work for hydrodynamic experiments and program management efforts for integration.	+3,540
▪ **Research & Development Certification and Safety**	
This increase supports additional work for development of nuclear components, limited life component exchange, and baseline models to support implementation of Quantified Margins and Uncertainties (QMU). In addition, the increase enhances capability for weapons safety and understanding weapon performance.	+14,871
▪ **Management, Technology, and Production**	
This net decrease reflects the movement of Nuclear Counterterrorism Design Support (NCDS) from Defense Programs to Nuclear Weapons Incident Response and is offset by increased support for the implementation of new Use Control systems studies and surveillance transformation activities.	-270
▪ **Pit Manufacturing**	
This increase is due to Pit Manufacturing moving from the Pit Manufacturing and Certification Campaign to DSW.	+145,269
▪ **Pit Capability**	
This increase is due to the Pit Manufacturing Capability subprogram being moved from the Pit Manufacturing and Certification Campaign to DSW. Technology development efforts will support plutonium quantity reduction goals at LLNL, manufacturing capacity increases, and development of improved casting processes. Other objectives include completing the technical assessment and documentation of manufacturing processes necessary for all pits currently in the nuclear weapons stockpile, development of an improved fabrication line for machining and gauging plutonium, and final testing of the tilt pour furnace.	+53,560
Total, Stockpile Services	**+239,567**
Total Funding Change, Directed Stockpile Work	**+274,463**

Capital Operating Expenses and Construction Summary

Capital Operating Expenses[a]

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
General Plant Projects	4,279	4,407	4,539
Captial Equipment	19,018	19,589	20,177
Total, Capital Equipment	**23,297**	**23,996**	**24,716**

Outyear Capital Operating Expenses

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
General Plant Projects	4,675	4,815	4,959	5,108
Captial Equipment	20,782	21,405	22,047	22,708
Total, Capital Equipment	**25,457**	**26,220**	**27,006**	**27,816**

Construction Projects[a] [b]

(dollars in thousands)

	Total Estimated Cost (TEC)	Prior Year Appro-priations	FY 2007	FY 2008	FY 2009	Unappro-priated Balance
99-D-141-01, Pit Disassembly Conversion Facility	TBD	192,039	32,789	30,730	26,890	TBD
99-D-141-02, Waste Solidification Building	200,469	10,649	15,500	38,600	40,000	95,720
Total, Construction		**1,370,248**	**48,289**	**69,330**	**66,890**	

Outyear Construction Projects

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
99-D-141-01, Pit Disassembly Conversion Facility	113,500	195,000	225,000	224,960
99-D-141-02, Pit Disassembly Conversion Facility	54,000	38,100	3,620	0
99-D-143, MOX Fabrication Facility	395,674	308,722	301,938	382,802
Total, Construction	**563,174**	**541,822**	**530,558**	**607,762**

[a] Since 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. FY 2008 and FY 2009 funding shown reflects estimates based on projected FY 2007 obligations.

[b] All out-year numbers for PDCF and the WSB are preliminary estimates and will be finalized once a Project Performance Baseline is established in FY 2008.

99-D-141, Pit Disassembly and Conversion Facility (PDCF)
Sub-project 01, Pit Disassembly and Conversion Facility
Savannah River Site, Aiken, South Carolina
Project Data Sheet is for Construction

1. Significant Changes

Critical Decision (CD) 0/1 for the Pit Disassembly and Conversion Facility (PDCF) Line Item was approved on October 31, 1997. The PDCF design is approximately 65% complete and the preliminary cost range to design, construct and start-up the facility is $2,400,000,000 - $3,200,000,000.

An Acting Federal Project Director with certification level IV has been assigned to this project.

It is anticipated that the value of the highly enriched uranium resulting from the disassembly of surplus pits contained in the 34 metric ton (MT) mission is approximately $800,000,000 at mid – 2007 market uranium prices.

This Project Data Sheet (PDS) is an update of the FY 2008 PDS. Significant changes include:

- The Total Project Cost (TPC) estimate (developed in FY 2006) reflects a preliminary cost range of $2,400,000,000 - $3,200,000,000 pending CD-2, Approve Performance Baseline, which is planned for 2008. All estimates and schedule dates should be considered preliminary until an external independent review is conducted by the Office of Engineering and Construction Management, in accordance with the Department's Critical Decision process.

- The cost and schedule estimate prepared in FY 2006 was developed by the design agent only and thus DOE does not have a high degree of confidence in the estimate. PDCF is a first-of-a-kind design that continues to face challenges given the wide variety of nuclear weapons pits that must be disassembled. Completing the PDCF design and technology demonstration & testing work and promptly hiring a Construction Manager (CM) will significantly increase the confidence level in this critical element. Currently, NNSA is in the process of selecting a CM to develop the cost and schedule baseline for the project to gain CD-2 approval in 2008.

- DOE is building three plutonium disposition facilities with level outyear funding (except for inflation) and staggering the start of construction of each of the facilities to reduce the annual funding requirements. This approach requires that significant funds be made available in the early stages of each project when long-lead procurement and construction costs are the highest. Otherwise, funding reductions or cost increases due to escalation, increasing cost of materials or labor shortages can delay the project schedule and increase the total project costs. The start-up date for PDCF is critical to sustaining the mixed oxide (MOX) operations.

The impact of the year-long FY 2007 Continuing Resolution was a delay in the completion of final design by 15 months.

- The previous PDS combined the PDCF and Waste Solidification Building (WSB) sub-projects showing preliminary costs and estimates. Cost and schedule data for each sub-project now appear on separate data sheets.

2. Design, Construction, and D&D Schedule[a]

(fiscal quarter or date)

	CD-0 (Approve Mission Need)	CD-1 (Approve Alternative Selection and Cost Range)	CD-1 (Design Start)	(Design/PED Complete)	CD-2 (Performance Baseline)	CD-3 (Construction Start)	CD-4 (Start of Operations)	D&D Start	D&D Complete
FY 2000	10/31/1997	10/31/1997	07/17/1999	4QFY2001		2QFY2001	4QFY2004	N/A	N/A
FY 2001	10/31/1997	10/31/1997	07/17/1999	1QFY2002		1QFY2002	3QFY2005	N/A	N/A
FY 2002	10/31/1997	10/31/1997	07/17/1999	TBD		TBD	TBD	N/A	N/A
FY 2003	10/31/1997	10/31/1997	07/17/1999	1QFY2004		TBD	TBD	N/A	N/A
FY 2004	10/31/1997	10/31/1997	07/17/1999	2QFY2004		TBD	TBD	N/A	N/A
FY 2005	10/31/1997	10/31/1997	07/17/1999	4QFY2005		2QFY2005	TBD	N/A	N/A
FY 2006	10/31/1997	10/31/1997	07/17/1999	4QFY2005		3QFY2010	TBD	N/A	N/A
FY 2007	10/31/1997	10/31/1997	07/17/1999	4QFY2007		1QFY2011	4QFY2015	N/A	N/A
FY 2008	10/31/1997	10/31/1997	07/17/1999	4QFY2009	2QFY2007	1QFY2011	2QFY2019	N/A	N/A
FY 2009	10/31/1997	10/31/1997	07/17/1999	2QFY2011	4QFY2008	TBD	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

[a] All numbers and dates will be provided once a Project Performance Baseline is established in FY 2008. The preliminary cost range for this sub-project is $2,400,000,000 - $3,200,000,000 with a preliminary schedule of 2QFY2019 for CD-4 (Start of Operations).

3. Baseline and Validation Status[a]

(dollars in thousands)

	TEC, PED	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2000			346,192	0	N/A		N/A
FY 2001			346,192	0	N/A		N/A
FY 2002			TBD	TBD	N/A		N/A
FY 2003			TBD	TBD	N/A		N/A
FY 2004			TBD	TBD	N/A		N/A
FY 2005			TBD	TBD	N/A		N/A
FY 2006			TBD	TBD	N/A		N/A
FY 2007			1,243,428	481,628	N/A		1,725,056
FY 2008	255,391	1,388,226	1,643,617	805,435	N/A	805,435	2,449,052
FY 2009	312,700	TBD	TBD	TBD	N/A	TBD	TBD

4. Project Description, Justification, and Scope

Sub-project 01-Pit Disassembly and Conversion Facility (PDCF)

The PDCF is a first-of-a-kind facility. The United States has never before constructed and operated a production-scale facility for disassembling nuclear weapons pits. The PDCF, which will be built at the Savannah River Site, will disassemble surplus nuclear weapon pits and convert the resulting weapon-grade plutonium metal to an oxide form that can be fabricated into mixed oxide (MOX) fuel for irradiation in U.S. commercial nuclear reactors. Once irradiated and converted into spent fuel, the plutonium can no longer be readily used for nuclear weapons. The facility's operating life is expected to be approximately 7.5 years but could easily be extended to disassemble and convert additional quantities of surplus nuclear weapon pits.[a] After completing its mission, the PDCF will be deactivated, decontaminated, and decommissioned over a three to four year period.

The PDCF consists of a main hardened building containing the pit disassembly plutonium processes and a number of conventional buildings and structures to house support personnel, systems, and equipment. The main plutonium processing building will occupy approximately 115,000 square feet and contain the following key areas: pit receiving, assay and storage; pit disassembly and oxide conversion; and plutonium oxide packaging, assay, storage, and shipment. This building will be equipped with storage capacity for incoming pit materials and plutonium oxide and includes areas for recovery, decontamination, and declassification of non-nuclear components resulting from the disassembly of the nuclear weapon pits. The conventional buildings and structures, which do not contain radioactive materials, will occupy approximately 50,000 square feet and contain offices; change rooms; a central control station; non-radioactive waste treatment; and packaging, storage, and shipment systems.

The scope of this subproject consists of the following activities: design and construction of the buildings and structures including design, procurement, installation, testing, demonstration and start-up of equipment to disassemble pits and convert the plutonium metal to an oxide form.

[a] On September 2007, the Secretary of Energy declared an additional 9 MT of plutonium from dismantled U.S. nuclear weapons as surplus to defense needs. Pending the completion of the necessary technical, regulatory and environmental reviews, it is expected that this material will be processed by the PDCF.

FY 2008 and FY 2009 Description of Activities

In FY 2008, activities include completing 75% of the final design, hiring a Construction Manager, continuing the Los Alamos National Laboratory (LANL) Advanced Recovery and Integrated Extraction System (ARIES) demonstration and testing work, and requesting CD-2 baseline approval.

FY 2009 activities include completing 85% of the final design, preparing necessary documentation for requesting partial CD-3, Approval to Start Construction and preparing for long-lead equipment procurements in 2010.

The PDCF sub-project is being conducted in accordance with the project management requirements in DOE O 413.3A and DOE M 413.3-1, and Program and Project Management for the Acquisition of Capital Assets. All appropriate project management requirements have been met.

5. Financial Schedule[a]

.

(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED			
FY 1999	20,000	20,000	211
FY 2000	18,751	17,396	13,449
FY 2001	19,956	17,804	17,834
FY 2002	11,000	14,507	23,377
FY 2003	28,462	28,462	38,052
FY 2004	40,420	39,820	32,026
FY 2005	32,044	32,644	40,626
FY 2006	21,406	21,406	18,384
FY 2007	32,789	32,789	18,081
FY 2008	22,447	22,447	30,112
FY 2009	26,890	26,890	34,013
FY 2010	19,503	19,503	27,503
FY 2011	19,032	19,032	19,032
FY 2012	0	0	0
Total, Design	312,700	312,700	312,700
Construction			
FY 2006	0	0	0
FY 2007	0	0	0
FY 2008	0	0	0
FY 2009	0	0	0
FY 2010	93,997	93,997	30,100
FY 2011	175,968	175,968	155,000
FY 2012	225,000	225,000	250,000
FY 2013	224,960	224,960	170,000
FY 2014	TBD	TBD	TBD
FY 2015	TBD	TBD	TBD
FY 2016	TBD	TBD	TBD

[a] All outyear numbers will be provided once a Project Performance Baseline is established in FY 2008. The preliminary cost range for this sub-project is $2,400,000,000 - $3,200,000,000 with a preliminary schedule of 2QFY2019 for CD-4 (Start of Operations).

	(dollars in thousands)		
	Appropriations	Obligations	Costs
FY 2017	TBD	TBD	TBD
FY 2018	0	0	TBD
Total, Construction	TBD	TBD	TBD
TEC			
FY 1999	20,000	20,000	211
FY 2000	18,751	17,396	13,449
FY 2001	19,956	17,804	17,834
FY 2002	11,000	14,507	23,377
FY 2003	28,462	28,462	38,052
FY 2004	40,420	39,820	32,026
FY 2005	32,044	32,644	40,626
FY 2006	21,406	21,406	18,384
FY 2007	32,789	32,789	18,081
FY 2008	22,447	22,447	30,112
FY 2009	26,890	26,890	34,013
FY 2010	113,500	113,500	57,603
FY 2011	195,000	195,000	174,032
FY 2012	225,000	225,000	250,000
FY 2013	224,960	224,960	170,000
FY 2014	TBD	TBD	TBD
FY 2015	TBD	TBD	TBD
FY 2016	TBD	TBD	TBD
FY 2017	TBD	TBD	TBD
FY 2018			TBD
Total TEC	TBD		TBD
Other Project Cost (OPC)			
OPC except D&D			
FY 1999	18,378	18,378	17,401
FY 2000	29,369	29,369	24,488
FY 2001	27,193	27,193	29,191
FY 2002	27,699	27,699	23,649
FY 2003	27,884	27,884	29,970
FY 2004	33,161	32,935	30,828
FY 2005	25,658	25,658	26,727
FY 2006	47,395	47,298	33,770
FY 2007	22,000	22,273	21,930
FY 2008	7,664	7,664	20,607
FY 2009	32,518	32,518	35,085
FY 2010	37,503	37,503	30,100
FY 2011	49,603	49,603	45,100
FY 2012	36,145	36,145	34,200
FY 2013	39,710	39,710	40,500
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
FY 2019	TBD	TBD	TBD
Total, OPC except D&D	TBD	TBD	TBD

	(dollars in thousands)		
	Appropriations	Obligations	Costs
D&D	N/A	N/A	N/A
FY			
Total, D&D	N/A	N/A	N/A
Total, OPC	TBD	TBD	TBD
Total Project Cost (TPC)			
FY 1999	38,378	38,378	17,612
FY 2000	48,120	46,765	37,937
FY 2001	47,149	44,997	47,025
FY 2002	38,699	42,206	47,026
FY 2003	56,346	56,346	68,022
FY 2004	73,581	72,755	62,854
FY 2005	57,702	58,302	67,353
FY 2006	68,801	68,704	52,154
FY 2007	54,789	55,062	40,011
FY 2008	30,111	30,111	50,719
FY 2009	59,408	59,408	69,098
FY 2010	151,003	151,003	87,703
FY 2011	244,603	244,603	219,132
FY 2012	261,145	261,145	284,200
FY 2013	264,670	264,670	210,500
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
FY 2019	TBD	TBD	TBD
Total, TPC	TBD	TBD	TBD

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	312,700	255,391	
Contingency	0	0	
Total, Design	312,700	255,391	
Construction			
Site Preparation	TBD	10,000	
Equipment	TBD	256,900	
Other Construction	TBD	866,552	

[a] All outyear numbers will be provided once a Project Performance Baseline is established in FY 2008. The preliminary cost range for this sub-project is $2,400,000,000 - $3,200,000,000 with a preliminary schedule of 2QFY2019 for CD-4 (Start of Operations).

	(dollars in thousands) Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Contingency	TBD	254,774	
Total, Construction	TBD	1,388,226	
Total, TEC	TBD	1,643,617	
Contingency, TEC	TBD	254,774	
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	TBD	328,394	
Conceptual Design		0	
Start-Up	TBD	370,804	
Contingency	TBD	106,237	
Total, OPC except D&D	TBD	805,435	
D&D			
D&D		0	
Contingency		0	
Total, D&D		0	
Total, OPC	TBD	805,435	
Contingency, OPC		106,237	
Total, TPC	TBD	2,449,052	
Total, Contingency	TBD	361,011	

7. Schedule of Project Costs

For schedule of project costs, see Section 5, “Financial Schedule.”

8. Related Operations and Maintenance Funding Requirements

Sub-Project 01 – Pit Disassembly and Conversion Facility	
Start of Operation or Beneficial Occupancy (fiscal quarter or date)	2QFY2019
Expected Useful Life (number of years)	7-1/2
Expected Future Start of D&D of this capital asset (fiscal quarter)	4QFY2026

(Related Funding requirements)
"Not applicable for PED – project baseline is not approved"

Sub-Project 01 – Pit Disassembly and Conversion Facility

(dollars in thousands)

	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	TBD	TBD	TBD	TBD
Maintenance	TBD	TBD	TBD	TBD
Total, Operations & Maintenance	TBD	TBD	TBD	TBD

9. Required D&D Information
"Not applicable for PED – project baseline is not approved"

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

Name(s) and site location(s) of existing facility(s) to be replaced: N/A

10. Acquisition Approach

Sub-Project 01 – Pit Disassembly and Conversion Facility
A cost plus fixed-fee contract for preliminary design and a cost plus award-fee contract for detailed design have been awarded for the PDCF. The existing contract includes an option for the design contractor to provide engineering support during the construction phase (Title III), which DOE will determine during the remaining Title II design effort. This approach also includes hiring a Construction Manager in the 2008 time-frame, as well as procuring long-lead equipment in 2010 to support the construction schedule.

It is anticipated that fixed-price construction sub-contracts for the PDCF will be awarded on the basis of competitive bidding, with an incentive and award fee contract for construction management services. With construction of the Mixed Oxide Fuel Fabrication Facility (MOX) starting approximately three years prior to PDCF construction, the PDCF procurement approach will have the benefit of being able to take into consideration lessons learned from the MOX procurement effort.

99-D-141, Pit Disassembly and Conversion Facility (PDCF), Sub-project 02, Waste Solidification Building (WSB) Savannah River Site, Aiken, South Carolina Project Data Sheet is for Construction

1. Significant Changes

Critical Decision (CD) 0/1 for the Pit Disassembly and Conversion Facility (PDCF) Line Item was approved on October 31, 1997. Subsequent to that decision, NNSA determined that waste treatment operations could be achieved more cost-effectively through the construction of a dedicated Waste Solidification Building (WSB) and added a separate sub-project to the FY 2005 PDCF Project Data Sheet to accomplish this function. The original 1997 Critical Decision did not identify a separate preliminary cost range for the WSB. However, based on waste treatment alternative analyses conducted in 2002 and 2005, a preliminary cost range has been developed that supports the proposed alternative (i.e., construction of a dedicated WSB).

The preliminary design for the WSB sub-project was authorized on February 19, 2003. Design activities for the WSB were suspended in 2004 due to delays in the overall plutonium disposition program arising from uncertainties concerning the Russian plutonium disposition program but were subsequently resumed in October 2006. The current preliminary cost range for the WSB sub-project is $245,000,000 - $330,000,000.

An Acting Federal Project Director with certification level IV has been assigned to this project.

This PDS is an update of the FY 2008 PDS (WSB sub-project). Significant changes are:

- The Total Project Cost (TPC) estimate reflects a preliminary cost range of $245,000,000 - $330,000,000 pending Critical Decison-2, Approve Performance Baseline, which is planned for FY 2008. All estimates and schedule dates are preliminary until an external independent review is conducted by the Office of Engineering and Construction Management, in accordance with the Department's Critical Decision process.

- Approximately $10,000,000 of construction funds will be obligated in FY 2008 to support long-lead equipment procurements. Long lead equipment items include evaporators, tanks, cementation process equipment and glove boxes. This equipment requires significant time to fabricate and must be available for installation early in the construction process (i.e. before the steel roof supports are put in place). In addition, site preparation activities such as installation of underground utilities, storm water management, grading and erosion control will be conducted in FY 2008. No construction activities will take place, excluding approved long-lead procurements and site preparation, until CD-2 and CD-3 have been approved.

- Start-up and commissioning support costs of $38,100,000 associated with the Savannah River Site (SRS) M&O contractor's facility operations staff, previously classified as operating expenses (but not part of OPC) has been re-classified as Other Project Cost (OPC), which is included as part of the project's TPC range.

- The most significant project risk involves the potential of evolving functional requirements for the facility ventilation system. The Department of Energy is currently undertaking a complex-wide review of facility ventilation systems and assessing the need to upgrade the systems beyond current design requirements. Should this assessment result in additional design requirements and subsequent upgrades to the WSB ventilation system, the project could experience a cost increase of approximately $30,000,000 (included in the above preliminary cost range).

- The previous PDS combined the Pit Disassembly and Conversion Facility (PDCF) and WSB sub-projects showing preliminary costs and estimates. Cost and schedule data for each sub-project now appear on separate data sheets.

2. Design, Construction, and D&D Schedule[a]

(fiscal quarter or date)

	CD-0 (Approve Mission Need)[b]	CD-1 (Approve Alternative Selection and Cost Range)	CD-1 (Design Start)[c]	(Design/PED Complete)	CD-2 (Approve Performance Baseline)	CD-3 (Approve Start of Construction)	CD-4 (Approve Start of Operations)	D&D Start	D&D Complete
FY 1999	10/31/1997	10/31/1997							
FY 2000	10/31/1997	10/31/1997							
FY 2001	10/31/1997	10/31/1997							
FY 2002	10/31/1997	10/31/1997							
FY 2003	10/31/1997	10/31/1997	02/19/2003	TBD	TBD	TBD	TBD	N/A	N/A
FY 2004	10/31/1997	10/31/1997	TBD	TBD	TBD	TBD	TBD	N/A	N/A
FY 2005	10/31/1997	10/31/1997	TBD	TBD	TBD	TBD	TBD	N/A	N/A
FY 2006	10/31/1997	10/31/1997	TBD	TBD	TBD	TBD	TBD	N/A	N/A
FY 2007	10/31/1997	10/31/1997	10/01/2006	TBD	TBD	TBD	TBD	N/A	N/A
FY 2008	10/31/1997	10/31/1997	10/01/2006	3QFY2008	4QFY2008	1QFY2009	TBD	N/A	N/A
FY 2009	10/31/1997	10/31/1997	10/01/2006	3QFY2008	4QFY2008	4QFY2008	1QFY2013	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

[a] The design, construction and D&D schedule reflects preliminary estimates. The preliminary cost range for the WSB sub-project is $245,000,000 - $330,000,000 with a preliminary schedule of 1QFY2013 for CD-4 (Start of Operations). A formal estimate will be provided upon approval of CD-2 (Performance Baseline).

[b] Approval of mission need for waste treatment activities was originally obtained in 1997 as part of the scope of the PDCF project.

[c] 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 counterpart Russian disposition program. These issues have been resolved, and design activities were resumed in October 2006.

D&D Start – Start of Demolition & Decontamination (D&D) work
D&D Complete – Completion of D&D work

	(first quarter or date)
	CD 2A/3A (Long Lead Procurements, Site Preparation)
FY 2008	3QFY 2008

CD 2A/3A - Approval to begin long lead procurements (evaporators, tanks, cementation process equipment and glove boxes) and to conduct site preparation activities

3. Baseline and Validation Status[a]

(dollars in thousands)

	TEC, PED	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 1999							
FY 2000							
FY 2001							
FY 2002							
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	TBD
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

4. Project Description, Justification, and Scope

Sub-project 02-Waste Solidification Building (WSB):

The WSB will be built adjacent to the PDCF and will process radioactive liquid waste streams from the Mixed Oxide Fuel Fabrication Facility (MFFF) and PDCF into a solid form for ultimate disposal. The radioactive liquid waste consists of one high-activity and two low-activity streams. The high-activity stream contains significant amounts of americium removed from plutonium oxide during MOX aqueous polishing operations. The WSB operating life is expected to be approximately 15 years but could easily be extended to accommodate disposition of additional surplus plutonium. After completing its mission, the WSB would be deactivated, decontaminated, and decommissioned over three to four years.

The scope of this sub-project consists of the following activities: design, construction, procurement, installation, testing, demonstration, and startup testing of structures and equipment. The facility will be approximately 48,000 square feet and is designed as a single story structure of hardened concrete. An additional separate structure consisting of a covered concrete pad will be constructed to provide

[a] The baseline and validation schedule reflects preliminary estimates. The preliminary cost range for the WSB sub-project is $245,000,000 - $330,000,000 with a preliminary schedule of 1QFY2013 for CD-4 (Start of Operations). A formal estimate will be provided upon approval of CD-2 (Performance Baseline).

temporary storage of containerized waste following treatment prior to packaging for shipment. The major process equipment includes tanks, evaporators, and solidification equipment.

FY 2008 and FY 2009 Description of Activities

In FY 2008, the detailed design for the WSB will be completed and procurement contracts for long-lead equipment will be awarded. Site preparation activities such as grading, storm water management activities and installation of underground utilities will begin.

In FY 2009, planned activities include completion of the construction bid process, award of the construction contract, equipment procurements, and the beginning of construction.

The WSB sub-project is being conducted in accordance with the project management requirements in DOE O 413.3A and DOE M 413.3-1, and Program and Project Management for the Acquisition of Capital Assets. All appropriate project management requirements have been met.

5. Financial Schedule[a]

(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED			
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	9,953	9,953	15,630
FY 2009	0	0	0
Total, PED	36,102	36,102	36,102

[a] The financial schedule reflects preliminary estimates. The preliminary cost range for the WSB sub-project is $245,000,000 - $330,000,000 with a preliminary schedule of 1QFY2013 for CD-4 (Start of Operations). A formal estimate will be provided upon approval of CD-2 (Performance Baseline).

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Construction			
FY 2006	0	0	0
FY 2007	0	0	0
FY 2008[a]	23,647	23,647	7,569
FY 2009	40,000	40,000	33,080
FY 2010	54,000	54,000	50,742
FY 2011	38,100	38,100	60,737
FY 2012	3,620	3,620	4,490
FY 2013	0	0	2,749
Total, Construction	159,367	159,367	159,367
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	33,600	33,600	23,199
FY 2009	40,000	40,000	33,080
FY 2010	54,000	54,000	50,742
FY 2011	38,100	38,100	60,737
FY 2012	3,620	3,620	4,490
FY 2013	0	0	2,749
Total, TEC	195,469	195,469	195,469
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	5,000	5,000	6,015
FY 2009	5,000	5,000	4,895
FY 2010	5,400	5,400	6,162
FY 2011	14,731	14,731	16,253
FY 2012	31,647	31,647	32,251
FY 2013	10,459	10,459	11,019
Total, OPC except D&D	82,718	82,718	82,718

[a] Reflects reductions from the FY 2008 Consolidated Appropriations Act (P.L. 110-161), impacts have not been validated since this project does not have a validated baseline.

	(dollars in thousands)		
	Appropriations	Obligations	Costs
D&D			
FY	N/A	N/A	N/A
Total, D&D	N/A	N/A	N/A
OPC			
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	5,000	5,000	6,015
FY 2009	5,000	5,000	4,895
FY 2010	5,400	5,400	6,162
FY 2011	14,731	14,731	16,253
FY 2012	31,647	31,647	32,251
FY 2013	10,459	10,459	11,019
Total OPC	82,718	82,718	82,718
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	38,600	38,600	29,214
FY 2009	45,000	45,000	37,975
FY 2010	59,400	59,400	56,904
FY 2011	52,831	52,831	76,990
FY 2012	35,267	35,267	36,741
FY 2013	10,459	10,459	13,768
Total, TPC[a]	278,187	278,187	278,187

[a] Reflects reductions from the FY 2008 Consolidated Appropriations Act (P.L. 110-161), impacts have not been validated since this project does not have a validated baseline.

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	29,999	31,183	N/A
Contingency	6,103	0	N/A
Total, PED	36,102	31,183	N/A
Construction			
Site Preparation	1,300	1,300	N/A
Equipment	41,670	38,393	N/A
Other Construction	72,964	81,784	N/A
Contingency	43,433	49,536	N/A
Total, Construction	159,367	171,013	N/A
Total, TEC	195,469	202,196	N/A
Contingency, TEC	49,536	49,536	N/A
Other Project Cost (OPC)			
OPC except D&D			
Conceptual/Planning	2,650	11,435	N/A
Design/Construction Support	10,508	0	N/A
Start-Up	58,163	20,076	N/A
Contingency	11,397	11,397	N/A
Total, OPC except D&D	82,718	42,908	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	82,718	42,908	N/A
Contingency, OPC	11,397	11,397	N/A
Total, TPC	278,187	245,104	N/A
Total, Contingency	60,933	60,933	N/A

7. Schedule of Project Costs

For schedule of project costs, see Section 5, “Financial Schedule.”

[a] The project cost estimate schedule reflects preliminary estimates. The preliminary cost range for the WSB sub-project is $245,000,000 - $330,000,000 with a preliminary schedule of 1QFY2013 for CD-4 (Start of Operations). A formal estimate will be provided upon approval of CD-2 (Performance Baseline).

8. Related Operations and Maintenance Funding Requirements

Sub-Project 02 – Waste Facility

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	1QFY2013
Expected Useful Life (number of years)	15
Expected Future Start of D&D of this capital asset (fiscal quarter)	1QFY2028

(Related Funding requirements)

Sub-Project 02 – Waste Facility

(dollars in thousands)

	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	29,016	TBD	435,238	TBD
Maintenance	1,985	TBD	29,782	TBD
Total, Operations & Maintenance	31,001	TBD	465,020	TBD

9. Required D&D Information

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

Name(s) and site location(s) of existing facility(s) to be replaced: N/A

10. Acquisition Approach

Sub-Project 02 – Waste Solidification Building

The WSB design service was procured through the Savannah River Site M&O contract. A purchase order for procurement of long-lead equipment for the WSB will be issued in FY 2008. It is anticipated that the Savannah River Site M&O will serve as the construction manager and that fixed-price construction sub-contracts for the WSB will be awarded on the basis of competitive bidding. The acquisition strategy will be finalized prior to CD-2.

Science Campaign

Funding Schedule by Activity

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
Science Campaign			
Advanced Certification	0	14,866	20,000
Primary Assessment Technologies	54,244	62,312	74,413
Dynamic Plutonium Experiments	0	0	23,734
Dynamic Materials Properties	83,638	96,140	85,805
Advanced Radiography	36,087	30,402	29,418
Secondary Assessment Technologies	80,345	78,999	79,292
Test Readiness	13,444	4,905	10,408
Total, Science Campaign	**267,758**	**287,624**	**323,070**

Outyear Funding Schedule

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
Science Campaign				
Advanced Certification	29,748	29,391	29,135	29,065
Primary Assessment Technologies	66,921	60,724	60,891	61,398
Dynamic Plutonium Experiments	14,094	18,119	18,347	18,773
Dynamic Materials Properties	82,898	78,466	79,045	80,040
Advanced Radiography	30,219	28,207	28,339	28,703
Secondary Assessment Technologies	74,982	70,339	71,085	71,985
Test Readiness	10,229	9,946	9,820	9,938
Total, Science Campaign	**309,091**	**295,192**	**296,662**	**299,902**

Description

The goal of the Science Campaign is to develop improved capabilities to assess the safety, reliability, and performance of the nuclear package portion of weapons without further underground testing; retain readiness to conduct underground nuclear testing if directed by the President; and develop essential scientific capabilities and infrastructure. By Congressional direction, beginning in FY 2008, NNSA will have the Advanced Certification Campaign component within the Science Campaign to conduct specific activities and integrate activities conducted under the Engineering and the Advanced Simulation and Computing Campaigns. The function of this Advanced Certification activity will be to use recent input from the JASON review and additional future peer review to understand, plan, and execute how to achieve warhead certification in an era where some important changes to nuclear components have occurred due to design or aging and nuclear testing is not an option to provide the direct certification basis.

The Science Campaign delivers significantly improved predictive capability and tools to allow the nuclear weapons complex to maintain our confidence in the assessment of the safety, security, reliability, and performance of the United States (U.S.) nuclear weapons stockpile. The Campaign focuses efforts around the development of knowledge and capabilities needed to assess the behavior of the primary and secondary components of the nuclear explosives package in different environments and as aging or other manufacturing changes occur. The development of a more responsive infrastructure for the nuclear weapons complex in the future must be driven by improvement of the science and technology base to continually address and reduce the uncertainties and provide an objective quantitative measure of confidence in performance.

This Campaign provides the modern scientific capabilities and tools that support: (1) Annual legacy stockpile assessments, (2) Certification statements for Life Extension Programs and potential warhead replacement designs, (3) Reduced response times for resolving stockpile issues [e.g., Significant Finding Investigations (SFIs)], and (4) Certified warhead replacement components that meet the goals of responsive infrastructure. The Science Campaign, along with the Advanced Simulation and Computing Campaign (ASC), is principally responsible for the development of improved predictive capability that supports the Quantification of Margins and Uncertainties (QMU). The QMU is a modern methodology that applies to stockpile assessment issues and communicates assessments in a common framework. As the U. S. stockpile continues to evolve due to aging, modifications from lifetime extensions, and the development of enhanced safety features, the assessment of these weapon systems increasingly relies on our ability to assess weapon performance using predictive capabilities that are developed and validated by the Science Campaign. In addition, a responsive infrastructure requires an agile workforce knowledgeable enough to avoid technological surprise, and quickly understand and respond to new threats, an agility only allowed by continued support of weapons science. The transformation of the nuclear weapons complex to a highly responsive infrastructure can only be successful with continual improvements in predictive capability, and support for greater science-based understanding as done in the Science Campaign. Our objective is to have a predictive capability for the entire nuclear explosive package by 2020. The major steps on this path have been planned through 2020 and include the development of: fundamental Plutonium (Pu) equation-of-state and constitutive models by 2011 for primary implosions; models for full primary operation in 2015; and a model of full secondary performance in 2018.

The Science Campaign provides experimental data to validate the models in the simulation codes, and methodologies to apply the codes. These data and methodologies lend confidence to calculations performed to meet Directed Stockpile Work (DSW) commitments to understand the impact of aging on weapon systems, close SFIs, and certify refurbished devices. The pace of work under the Science Campaign is timed to support an ASC milestone in FY 2010 to release substantially improved simulation codes for primaries and secondaries in support of weapon design and certification requirements in the 2012 time frame. This shared code release will require the incorporation of improved physics models, which must be provided by FY 2009, including validated models for plutonium equation of state (EOS) and constitutive properties, improved boost physics models, completion of the Dual Axis Radiographic Hydrodynamic Test (DARHT) Facility 2nd axis as a validation tool, and the use of the High Energy Density Physics (HEDP) facilities.

The scientific advisory group, JASON, in early FY 2007, concluded a review of the progress on the second axis of the DARHT facility at Los Alamos National Laboratory (LANL). The report concluded that there are sound technical bases for the approaches being taken by the project: "The DARHT group is pursuing a well thought out program of fixes and testing. They have 'high confidence' that the current baseline approach will deliver two x-ray pulses, but lower confidence that all four x-ray pulses will meet requirements." The DARHT demonstrated the capability for four pulses at low energy during the third quarter of FY 2007 scaled accelerator tests. On June 20, 2007, the DARHT 2nd Axis Project team successfully transported a 2 kiloampere, 1.6 microsecond electron beam through the 2nd axis accelerator to an energy of 17 MeV and met the technical specifications. The second axis will be completed in FY 2008. In 2009, it will become a tool for conducting science and directed stockpile experiments. We will continue to improve diagnostics and target designs to increase capability to resolve features in hydrodynamic experiments.

Five important budgetary changes should be noted:

- First, in FY 2009, the Science Campaign is incorporating the budget and responsibilities for Pit Certification activities previously in the Pit Manufacturing and Certification Campaign. A program of Dynamic Plutonium Experiments (DPE) that are primarily conducted at the Nevada Test Site (NTS) will now be aligned with science efforts which should result in improved integration and synergies between materials and primary certification efforts. In addition, the activities that supported the certification of the newly-manufactured W88 pits at LANL will now be absorbed into the Primary Assessment Technologies subprogram. These activities include work to improve confidence in the primary certification baseline and simulation capability, engineering efforts to reduce uncertainties in W88 pit under Stockpile-to-Target-Sequence conditions and the development of planning and methodologies for the certification of the next-generation of new pits. These efforts are being conducted in a manner that should benefit all current and future stockpiled systems in the evolving Science Based Stockpile Stewardship Program. Finally, $10,000,000 in funding for a portion of the activities previously conducted under the Pit Certification program are now included in the newly created Advanced Certification campaign from FY 2009 to FY 2013.

- Second, in FY 2009, the request for Test Readiness was increased to $10,408,000 from the current funding level of $4,905,000. In FY 2007, the program had achieved 24-month test readiness posture, but the forecasted budget levels resulted in a change in the test readiness posture target to 24 to 36 months. For FY 2008, the Test Readiness program will also maintain continuity in personnel and capability in FY 2008 by leveraging Science Campaign work scope. With the FY 2009 and outyear budgets of approximately $10,000,000 per year, the NNSA intends to maintain the 24 to 36 month posture indefinitely.

- Third, as the DARHT 2nd axis project is now completed, resources within the Advanced Radiography subprogram will enable the diagnostics and operational enhancements needed to make cost-effective use of new capabilities that are coming on line, including DARHT, proton radiography (pRad) at Los Alamos Neutron Science Center (LANSCE), Z Pulsed-Power Accelerator at Lawrence Livermore National Laboratory (Z/LLNL), OMEGA laser at the University of Rochester Laboratory for Laser Energetics Extended Performance (EP) Facility, and, ultimately, the National Ignition Facility (NIF). This work includes new diagnostics and technology developments to improve data quality and reduce cost.

- Fourth, based on recommendations made by the Interagency Task Force on high energy density plasmas (HEDP) in their FY 2007 report, the NNSA and the DOE Office of Science established a joint program in high energy density laboratory plasmas (HEDLP), a major sub-area within the discipline of HEDP. The purpose of the joint program is to effectively steward HEDLP within the DOE while maintaining the interdisciplinary nature of this area of science. The HEDLP program is jointly funded by the Office of Science and NNSA. Funds in the Science Campaign support grants and centers that will be transitioned to the joint program.

- Fifth, by Congressional direction in the FY 2008 Consolidated Appropriations Act (P.L. 110-161), a new Science Campaign, Advanced Certification, has been implemented to address recent findings in the JASON Defense Advisory Group report citing significant systemic gaps in the NNSA certification process and weapons campaign work products. The new campaign initiates expanded, independent peer review mechanisms to improve the weapons certification process, refines computational tools and methods, promotes the advancement of the physical understanding of surety

mechanisms, ensures further exploration of failure modes, conduct manufacturing process assessments, and provides for study of strategic system-level requirements.

The Inertial Confinement Fusion Ignition and High Yield (ICF) Campaign is being restructured to focus on FY 2010 ignition goals. The FY 2009 budget for the Science Campaign reflects a continued shift of important weapon physics work using ICF facilities, out of the ICF Campaign to the Science Campaign, particularly Primary Assessment Technologies and Dynamic Materials Properties. This does not represent a budget increase, but rather a scope and funding shift of responsibilities from the ICF Campaign to the Science Campaign.

The Science Campaign is the principal mechanism for supporting the science required to maintain the technical vitality of the national nuclear weapons laboratories, to enable them to respond to emerging national security needs, and to maintain a technological edge to prevent a national security surprise. As such, the Campaign also develops and maintains the scientific infrastructure of the three national nuclear weapons laboratories and maintains a set of academic alliances to help ensure scientific vitality in important and unique fields of research. The Science Campaign also is contributing to the readiness to conduct underground nuclear testing as directed by the President through the fielding of experiments and diagnostics at Nevada and at the laboratories.

The Science Campaign integrates budget and performance by setting Campaign performance targets and Level 1 (national level) milestones for primary and secondary certification that reflect national program priorities. As experience is gained in the application of the QMU methodology and as QMU is further refined, the results are increasingly being used to identify technical areas requiring improvement and to develop Level 2 (program) milestones to prioritize resources. Program success is determined by the extent to which improved understanding of important phenomena provides confidence that failure modes and margins are properly identified and the extent to which uncertainties are understood and reduced in predictive capabilities.

The Science Campaign supports activities related to science endeavors by other national and international sponsors; including for example, materials science at LANSCE and high energy density physics. During FY 2008, the Science Campaign will examine enhanced and additional collaborations that can provide improved capability to analyze and resolve stockpile issues in the future. As an example, application of the Linac Coherent Light Source (Office of Science) for stockpile relevant science will be studied. This approach can extend responsive science capability without major new facilities.

Within the Science Campaign, the Advanced Certification , Primary Assessment Technologies, Dynamic Plutonium Experiments, Dynamic Material Properties, Advanced Radiography, Secondary Assessment Technologies, , and Test Readiness subprograms each make unique contributions to the Government Performance Report Act (GPRA) Unit Program Goal 2.1.27.00. In conjunction with the ASC Campaign, the Primary Assessment Technologies subprogram develops the tools, methods, and knowledge required to certify the nuclear safety and nuclear performance of any aged or rebuilt primary to required levels of accuracy without nuclear testing. The Dynamic Material Properties and DPE subprograms focus on utilizing experiments to foster the development of detailed understanding and accurate modeling of the properties and behavior of materials used within the nuclear explosives package. It also funds university programs that support science fundamental to stockpile stewardship and develops potential future laboratory employees. The Advanced Radiography subprogram develops technologies for three-dimensional imagery of imploding mock primaries with sufficient spatial and

temporal resolution to experimentally validate computer simulations of the implosion process as well as to tie these results to prior data obtained from full-scale underground nuclear tests. The Secondary Assessment Technologies subprogram develops the tools, methods, and knowledge required to certify the nuclear performance of secondaries without nuclear testing. The Advanced Certification subprogram will integrate the scientific and technological advances from the stockpile stewardship programs along with input from continuing studies and workshops, to improve the weapons certification process, refine computational tools and methods, promote the advancement of the physical understanding of surety mechanisms, ensure further exploration of failure modes, conduct manufacturing process assessments, and provide for study of strategic system level requirements. The Test Readiness maintains the readiness of NNSA to conduct underground nuclear testing as directed by the President. The Science Campaign works to ensure that work at the NNSA/DP nuclear weapon laboratories will be preeminent in application of modern scientific methods to the nuclear weapon mission.

Major FY 2007 Achievements

Primary Assessment Technology

- Held four integrated boost initiative product team meetings and generated a strategy document.
- Successfully completed twelve Thermos subcritical experiments (in collaboration with DSW) at the U1a facility at the Nevada Test Site.
- Held a workshop on Predictive Capability Framework (PCF) and major planned deliverables.
- Completed the Boost strategy document (cross science and NA-11 effort centered in Primary Assessment Technologies).
- Executed the first High Energy Cylinder experiment (high Speed Camera Visible Data).

Dynamic Materials Properties

- Completed a 10-year Roadmap for the Dynamic Plutonium Experiments subprogram.
- Submitted for review the Stockpile Stewardship Academic Alliance proposal.
- Scheduled tests to validate containment for future Plutonium (Pu) experiments on Z pulsed-power accelerator completed.
- Participated in the Basic Energy Sciences workshop on materials under extreme conditions.

Advanced Radiography

- Competed review of the Scaled Accelerator Validation Test.
- Successfully executed the first High Energy Sandwich test on PRad 2007 run cycle at LANSCE.
- Achieved DARHT 2nd Axis full energy and current.

Secondary Assessment Technologies

- Validated necessary physics, material, models, and simulation techniques in secondary design codes to support special factor milestone.
- Delivered Secondary Assessment Strategy to NNSA.
- Completed an assessment of an improved two-dimensional energy balance model, developed through the use of small-scale experiments, high energy density experiments, and reanalysis of Underground tests, for use in current Directed Stockpile Work and Secondary Assessment Technologies subprogram objectives (an FY 2008 “Getting the Job Done” goal was established based on this work, and the completion criterion was defined in 2007).
- Defined and agreed on accuracy and reproducibility criteria for initial and high precision experiments on “Z” Refurbishment (ZR).

Test Readiness

- Produced the annual "Test Scenarios and Capability Assessment Report."
- Completed analysis and recommended action on moving mission-critical U233 material to a permanent storage location.
- Delivered a written report on key radiochemistry materials needed for underground nuclear tests.
- Completed a report that provided recommendations for the downselect of a single emplacement system capability for potential future underground nuclear test requirements.

Major Outyear Priorities and Assumptions

The outyear projections for Science Campaign total $1,200,847,000 for FY 2010 through FY 2013 which includes approximately $29,000,000 per year for the newly created Advanced Certification Campaign. During the period FY 2010-2013, the Science Campaign will endeavor to make significant progress toward providing the experimental data and certification methodologies necessary to support the current stockpile workload and any future requirements. The Science Campaign is a major contributor to the physical understanding necessary for Quantification of Margins and Uncertainties (QMU). In order to achieve this challenging goal, a balanced weapon science program is necessary that integrates the products of the Science Campaign with simulation capabilities developed in the Advanced Simulation and Computing Campaign and the experimental tools developed in the NIF and ICF Campaign. Subsequent diagnostic and radiographic development will be conducted across the Science Campaign as necessary and appropriate.

The Science Campaign is planning future integrated activities to answer key questions on time scales consistent with complex transformation. In the FY 2010-2013 period, in addition to the normal operations, we expect to have to address the following high-level issues that may affect prioritization of the budget: LANSCE refurbishment; establishing initial conditions for boost (FY 2015); a critical decision point for whether to execute the DynEx (scheduled for FY 2015); JASPER and other operations at NTS; maintenance of test readiness as directed by Congress; and activities subject to the Complex Transformation planning and execution (i.e. high explosives research across the complex, Pu activities in Superblock at LLNL, and the balance of research and manufacturing activities at TA-55.)

Program Assessment Rating Tool (PART)

The Department implemented a tool to evaluate selected programs. The PART was developed by the Office of Management and Budget (OMB) to provide a standardized way to assess the effectiveness of the Federal Government's portfolio of programs. The structured framework of the PART provides a means through which programs can assess their activities differently than through traditional reviews. The Science Campaign has incorporated feedback from the OMB into the FY 2009 Budget Request, and has taken or will take the necessary steps to continue to improve performance.

The results of the OMB review are reflected in the FY 2007 Budget Request. The OMB gave the Science Campaign scores of 100 percent on the Program Purpose and Design Section, 91 percent on the Strategic Planning Section, 83 percent on the Program Management Section, and 72 percent on the Program Results and Accountability Section. Overall, the OMB rated the Science Campaign 82 percent, its second highest rating of "Moderately Effective." The OMB assessment found that the program appears to be well managed, with a clear and unique purpose and clear, meaningful, and measurable performance metrics that the program was demonstrating good progress in meeting. Additionally, the OMB assessment found that the program needs to continue to strengthen procedures to hold its contractors accountable for cost, schedule, and results. The OMB also found that the NNSA should improve coordination of activities across multiple programs aimed at nuclear weapons activities—

especially the six campaigns. In response to the OMB findings, the NNSA is continuing to improve contractor accountability by expanding the linkage of contractor awards to performance results/evaluation and improving communication and coordination of work across all Weapons Activities programs. The NNSA has implemented a predictive capability framework to provide an integration tool for the various Science, Engineering, and Technology Campaigns. The NNSA is also continuing to improve the responsiveness of the Nuclear Weapons Complex infrastructure by coordinating program activity with the Nuclear Weapons Complex Transformation Strategy Record of Decision and by integrating program requirements into the new Defense Programs National Level Work Breakdown Structure.

Annual Performance Results and Targets

(R = Results; T = Target)

Performance Indicators	FY 2005 Results	FY 2006 Results	FY 2007 Results	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Endpoint Target
Strategic Goal 2.1 (Nuclear Deterrent) GPRA Unit Program Goal 2.1.27.00, Science Campaign										
Cumulative percentage of progress in development of the Quantification of Margins and Uncertainties (QMU) methodology to provide quantitative measures of confidence in the performance, safety, and reliability of the U.S. nuclear weapons stockpile (Long-term Outcome)	R: 25% T: 25%	R: 40% T: 40%	R: 55% T: 55%	T: 70%	N/A	N/A	N/A	N/A	N/A	By 2008, complete development of 70% QMU methodology to apply quantitative measures of confidence in the performance, safety, and reliability of the nuclear weapons stockpile.
Cumulative percentage of progress in replacing key empirical parameters in the nuclear explosive package assessment with first principles physics models assessed by validation with experiment (Long-term Outcome) [a]	N/A	N/A	R: 36%	T: 42%	T: 50%	T: 60%	T: 63%	T: 66%	T: 69%	By 2020, use modern physics models in assessment calculations to replace the major empirical parameters affecting energy balance, boost initial conditions, amount of boost, secondary performance, and weapons output.
Cumulative percentage of progress towards completing the Dual-Axis Radiographic Hydrotest Facility (DARHT) to provide data required to certify the safety and reliability of the U.S. nuclear weapons stockpile (Long-term Outcome)	R: 25% T: 25%	R: 70% T: 60%	R: 95% T: 80%	T: 100%	N/A	N/A	N/A	N/A	N/A	By 2008, complete the DARHT facility to provide data required to certify the safety and reliability of the U.S. nuclear weapons stockpile.
Readiness, measured in months, to conduct an underground nuclear test as established by current NNSA policy (Long-term Outcome)	R: 24 T: 24	R: 24 T: 24	R: 24 T: 24	T: 24-36	T: 24-36	T: 24-36	T: 24-36	T: 24-36	T: 24-36	By 2005, achieve a 24- to 36-month underground nuclear test readiness (2003 baseline of 36-month).
Annual percentage of hydrodynamic tests completed in accordance with the National Hydrodynamics Plan, to support the assessment of nuclear performance (Annual Output)	R: 75% T: 75%	R: 75% T: 75%	R: 75% T: 75%	T: 75%	T: 75%	T: 75%	T: 75%	T: 75%	T: 75%	Annually, complete at least 75% of all scheduled hydrodynamic tests in accordance with the National Hydrodynamics Plan.
Cumulative percentage of progress towards creating and measuring extreme temperature and pressure conditions for the 2013 stockpile stewardship requirement (Long-term Outcome)	R: 68% T: 68%	R: 70% T: 70%	R: 70% T: 70%	T: 75%	N/A	N/A	N/A	N/A	N/A	By 2008, create and measure75% of the extreme conditions so High Energy Density Physics facilities can be used to provide stockpile stewardship data.

[a] New indicator and targets for FY 2008 and beyond.

Performance Indicators	FY 2005 Results	FY 2006 Results	FY 2007 Results	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Endpoint Target
Cumulative percentage of progress towards achievement of key extreme experimental conditions of matter needed for predictive capability for nuclear weapons performance (Long-term Outcome)	N/A	N/A	R: 13%	T: 18%	T: 25%	T: 35%	T: 55%	T: 75%	T: 85%	By 2015, achieve greater than unity value of the average of the ratio of achieved conditions to needed conditions.
Annual average cost per test, expressed in terms of thousands of dollars, of obtaining plutonium experimental data on the Joint Actinide Shock Physics Experimental Research (JASPER) facility to support primary certification models (Efficiency)	R: $405K T: $405K	R: $380K T: $380K	R: $360K T: $360K	T: $340K	T: $340K	T: $340K	T: $340K	T: $340K	T: $340K	By 2008, reduce the annual average cost of obtaining plutonium experimental data on JASPER to $340K (80% of the 2004 baseline cost of $425K).

Detailed Justification

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
Advanced Certification	**0**	**14,866**	**20,000**

Advances made in the science of Stockpile Stewardship are increasing our confidence in assessments of nuclear warhead safety and reliability. Future certification of weapons in the absence of underground testing must rely on significantly improving our ability to replace physics models benchmarked by underground tests with much more faithful calculations of performance based on models validated by our new experimental capabilities. Such advances are the foundation of our ability to assess and certify weapon systems and components through the Quantifications of Margins and Uncertainties. Recent studies, both internal and external to the Department of Energy, have highlighted areas for improvement in how we certify and assess in the absence of nuclear testing. In the Advanced Certification Campaign, we will integrate the scientific and technology advances from the stockpile stewardship program with input from continuing studies/workshops to develop and manage a strategy for advancing the certification and assessment processes. In addition, the NNSA initiative to improve our understanding and modeling of boost will be a major enabler of assessment of surety mechanisms, failure modes and manufacturing or material changes.

Based on our advanced certification strategy, this campaign will develop processes, tools and methods that are designed to fill gaps that are not presently covered under the existing stockpile program, for example, developing a rigorous connection between performance effects resulting from changes in the areas of pit modification, pit re-use and material, component or manufacturing changes. Examples of specific activities will include: hydrodynamic experiments to determine the effects on performance of surety or manufacturing changes, modeling and experiments of failure modes, and the development of a rigorous, peer-reviewed linkage of system level requirements to the associated certification needs.

Consistent with the Program Plan established in response to Congressional direction in FY 2008, the Advanced Certification Campaign will address the long-term scientific issues related to the topics raised by the JASON review of RRW. Analysis will be applied to the existing RRW-1 design to accredit a certification concept, addressing JASON issues, that could be applied to warhead life extensions or future modifications. Key elements of our program will include: improvement of the weapons certification process through expanded, independent peer review mechanisms and refinement of computational tools and methods as planned through the Predictive Capability Framework; advancement of the physical understanding of surety mechanisms and their impacts on certification; further exploration of failure modes; manufacturing process assessments; and the study of strategic system-level requirements. The Predictive Capability Framework integrates developments in computing and models from ASC, models and tools from science and ICF campaigns, technologies from the engineering campaign to meet technical needs derived from directed stockpile activities.

In FY 2009, the Advanced Certification line will continue efforts begun in FY 2008 to review, evaluate and implement key recommendations from the JASONs study of RRW regarding approaches to establishing an accredited warhead certification plan, without nuclear testing, in an era where changes to nuclear components will occur due to aging or design concerns. A report to Congress to be provided in May, as directed by the FY 2008 Consolidated Appropriations Act (P.L. 110-161), will address plans for achieving the Advanced Certification goals.

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
Primary Assessment Technologies	**54,244**	**62,312**	**74,413**

With the successful completion of the Dual Axis Radiographic Hydrodynamic Test (DARHT) Facility second axis in FY 2008, the Primary Assessment Technologies program will begin to perform experiments in FY 2009 that acquire multiple images of an imploding system. This data will complement data obtained through experiments to be performed at the Lawrence Livermore National Laboratory (LLNL) Site 300, proton radiography experiments at Los Alamos Neutron Science Center (LANSCE) and dynamic plutonium experiments at U1a and Big Explosive Experiment Facility (BEEF) at the Nevada Test Site (NTS). The combined data will be used to improve the weapon complex's understanding of the primary hydrodynamic implosion phase. These experiments will be used along with data collected from past underground tests to understand and reduce the uncertainties on the empirically defined parameters that are typically used in legacy weapon performance models. The NNSA has a goal to eliminate one such parameter and to replace it with a physics-based model by 2015. A JASON review of this work would be appropriate and is scheduled. The JASON recommendations will have an impact on the direction of work in FY 2009 and beyond. The resulting improvements to our models will be used to improve scientific basis for NNSA annual assessments, and address stockpile issues. In FY 2009, the Science Campaign will also take on expanded responsibility for the science of pit aging. This subprogram, Primary Assessment Technologies, will have the responsibility for integrating all empirical knowledge on pit aging issues, and will use ASC models to enable specific system assessments. The Science Campaign is now focusing on the most important and challenging remaining sources of uncertainty in the function of nuclear weapons boost. The Boost Initiative is organized from Primary Assessment Technologies subprogram but will be used to guide efforts in the overall Science Campaign as well as coordinated activities in ASC, Directed Stockpile Work (DSW), and Engineering.

A total of $9,000,000 in funding for a portion of the activities previously conducted under the Pit Certification program are now included in the Primary Assessments and Technologies program. The funding was placed into the Science Campaign to cover pit certification science efforts that were previously funded under the Pit Certification element of the former Pit Manufacturing and Certification Campaign. The identified work scope includes efforts to reduce uncertainties in the certification related to pit manufacturing processes. In FY 2009, the funding is also expected to support plutonium science aspects of the Enhanced Surveillance Campaign.

Dynamic Plutonium Experiments (DPE)	**0**	**0**	**23,734**

Activities under this program were previously conducted under the Pit Certification program within the Pit Manufacturing and Certification Campaign and are intended to provide the fundamental and integrated Pu data required to quantify initial conditions for boost processes, and ultimately, further efforts toward the predictive capability needs of the NNSA. The program is intended to provide needed focus on obtaining dynamic plutonium property data that, taken together with other small scale static and quasi-static Pu data, is required to make physics-based predictions, perform plutonium lifetime assessments, and improve baseline models for weapon assessments.

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
Dynamic Materials Properties	**83,638**	**96,140**	**85,805**

Dynamic Materials Properties develops the fundamental knowledge and physics-based models that describe the behaviors of weapon materials in environments of extreme temperature and pressure. There are major efforts on behavior and properties of high explosives, non-nuclear, and nuclear materials, particularly plutonium. In FY 2009, the Science Campaign takes on expanded responsibility for the science of pit aging. Dynamic Materials Properties will have the responsibility for developing the age and process aware fundamental Pu multi-phase equation-of-state and, along with the DPE sub-effort, its constitutive properties. This responsibility also includes maintenance and sample preparation of processed and artificially-aged samples for experiments, metallurgy and materials science of plutonium, and conducting a number of small scale experiments on isentropic compression drivers, at Inertial Confinement Fusion facilities and also at DOE Office of Science synchrotron radiation sources.

This effort also funds the Stewardship Science Academic Alliances, a program that provides financial assistance to approximately 40 academic institutions in three areas of unique relevance to weapon science; low energy nuclear science, dynamic material science, and high energy density physics. There is significant coordination with the DOE Office of Science on the Alliances. Two specific areas of mutual interest are "Materials under Extreme Environments" and "High Energy Density Laboratory Plasmas."

Advanced Radiography	**36,087**	**30,402**	**29,418**

Advanced Radiography continues to develop the capabilities and diagnostics used by the complex to perform radiographic measurements which are applied to hydrodynamic and dynamic materials experiments. The majority of the work is accomplished at DARHT, Site 300, and the NTS. Large gains can be achieved in data acquisition by relatively modest improvements to diagnostic capabilities. Containment of explosively driven experiments is a continuing focus. This approach improves safety and security while reducing impact on the environment. New pulsed power technologies will be applied to develop modern, cost-effective platforms for both radiography and material dynamic experiments.

Secondary Assessment Technologies	**80,345**	**78,999**	**79,292**

The Secondary Assessment Technologies effort will complete the initial implementation of a physics-based energy balance model. The work will be further refined by performing experiments on the ICF facilities in FY 2009 thru 2011. These experiments will lead to a revision of the model by 2012. In addition, experiments will also focus on secondary performance with an improved physics model implemented by 2018. The level of accuracy and detail required by target fabrication for these experiments drives a significant fraction of the overall program cost. Nuclear weapon outputs are an area in which significant improvements must be achieved in order to enable improved weapon effects simulations and predictions.

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
Test Readiness	**13,444**	**4,905**	**10,408**

The mission of the Test Readiness Program is to ensure that an underground test (UGT) can be executed within the timeframe established by national policy (e.g., Presidential Decision Directive-15). The goal of test readiness is to leverage validation activities to sustain the capability to conduct an underground test within 24 to 36 months.

Funding was not requested in FY 2008 with an expectation that a 24 month readiness posture was achieved in FY 2007, and there would be an ongoing program of experiments at the NTS that would be able to support exercises and efforts to maintain that posture at a steady level. However, the FY 2008 Consolidated Appropriation Act (P.L. 110-161) provided $4,905,000 for Test Readiness activities at the Nevada Test Site to maintain the capabilities restored under the enhanced test readiness program. In addition, the Test Readiness program will maintain some continuity in personnel and capability in FY 2008 by leveraging Science Campaign work scope.

The FY 2009 request will allow NNSA to maintain the 24 to 36 month posture, but most types of physics-based testing are not possible on any shorter timeframe, if required, under this funding scenario. From FY 2010 to FY 2013 the program will be focused on ensuring that testing capabilities are current rather than tied to early 1990's technologies.

Total, Science Campaign	**267,758**	**287,624**	**323,070**

Explanation of Funding Changes

	FY 2009 vs. FY 2008 ($000)
Advanced Certification	
Reflects efforts directed by Congress to reduce and eliminate gaps in the NNSA certification process and weapons campaign work products. In addition, the Pit Certification component of the Pit Manufacturing and Certification Campaign is included in the FY 2009 request.	+5,134
Primary Assessment Technologies	
The Primary Assessment Technologies budget increase represents the shift of High Energy Density Physics (HEDP) research from the Inertial Confinement Fusion Ignition and High Yield (ICF) Campaign to the Science Campaign. $9,000,000 from the Pit Certification component of the Pit Manufacturing and Certification Campaign is included in the FY 2009 request. It also includes a transfer of scope from ICF associated with weapon physics experiments on ICF facilities.	+12,101
Dynamic Plutonium Experiments (DPE)	
These activities were previously conducted under the Pit Certification program within the Pit Manufacturing and Certification Campaign and are intended to provide the fundamental and integrated Plutonium data required to quantify initial conditions for boost processes, and ultimately, further efforts toward the predictive capability needs of the NNSA.	+23,734
Dynamic Materials Properties	
Decrease reflects a redistribution of funds for Z shots to the Primary Assessment Technologies sub-Campaign. Decrease also reflects a reduction of funding support for the academic alliances program due to funding shifts to meet higher priorities.	-10,335
Advanced Radiography and Transformational Technologies	
The Advanced Radiography and Transformational Technologies budget decrease is due to completion of the Dual Axis Radiographic Hydrodynamic Test (DARHT) facility.	-984
Secondary Assessment Technology	
The slight funding increase will ensure continued program operations.	+293
Test Readiness	
Increase required to maintain a minimum readiness posture of 24 to 36 months by focusing on ensuring that testing capabilities are current, rather than tied to early 1990's technologies.	+5,503
Total Funding Change, Science Campaign	**+35,446**

Capital Operating Expenses and Construction Summary

Capital Operating Expenses[a]

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
General Plant Projects	0	0	0
Captial Equipment	7,037	7,248	7,465
Total, Capital Equipment	**7,037**	**7,248**	**7,465**

Outyear Capital Operating Expenses

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
General Plant Projects	0	0	0	0
Captial Equipment	7,689	7,920	8,158	8,403
Total, Capital Equipment	**7,689**	**7,920**	**8,158**	**8,403**

[a] Since 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. FY 2008 and FY 2009 funding shown reflects estimates based on actual FY 2007 obligations.

Engineering Campaign

Funding Schedule by Activity

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
Engineering Campaign			
Enhanced Surety	26,666	34,137	35,641
Weapons Systems Engineering Assessment Technology	21,102	19,314	17,105
Nuclear Survivability	15,662	8,644	21,753
Enhanced Surveillance	86,783	79,073	68,243
Microsystems and Engineering Sciences Applications (MESA) Other Project Costs (OPC)	4,603	7,485	0
08-D-806, Ion Beam Laboratory Refurbishment Construction	0	9,911	0
01-D-108, Microsystems and Engineering Sciences Applications (MESA) Construction	6,920	10,984	0
Total, Engineering Campaign	**161,736**	**169,548**	**142,742**

Outyear Funding Schedule

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
Engineering Campaign				
Enhanced Surety	45,892	47,660	50,564	52,735
Weapons Systems Engineering Assessment Technology	16,210	15,291	19,034	18,982
Nuclear Survivability	20,480	19,956	10,628	8,878
Enhanced Surveillance	66,281	63,658	70,249	73,312
MESA OPCs	0	0	0	0
MESA Construction	0	0	0	0
Total, Engineering Campaign	**148,863**	**146,565**	**150,475**	**153,907**

Description

The goal for the Engineering Campaign is to develop capabilities to assess and improve the safety, reliability, and performance of the non-nuclear and nuclear explosive package engineering components in nuclear weapons without further underground testing. Additionally, the purpose is to increase our ability to predict the response and have confidence in the design of all components and subsystems to external stimuli (large thermal, mechanical, and combined forces and extremely high radiation fields); and the effects of aging; and to develop essential engineering capabilities and infrastructure.

The Engineering Campaign provides the Nuclear Weapons Complex with modern tools and capabilities in engineering sciences and technologies to ensure the safety, security, reliability and performance of the current and future U.S. nuclear weapon stockpile without further underground testing, and provides a sustained basis for stockpile certification and assessments throughout the lifecycle of each weapon. Specific Campaign objectives will be enabled by the improved capability for weapon design and engineering assessment including:

- Incorporation of enhanced surety features independent of any threat scenario meeting the requirements of National Security Presidential Directive
- Quantification of margins and uncertainties (QMU) using state-of-the-art design and assessment tools that rely on Advanced Simulating and Computing codes and experimental facilities acquired in support of the Stockpile Stewardship Program

- Predictive capability for the effect of aging on performance and lifetime assessments
- Consolidation of Category I/II Special Nuclear Material (SNM) in response to the Complex Transformation
- Qualification Alternatives to the Sandia Pulse Reactor (SPR) project to evaluate threats or vulnerabilities more responsively than traditional radiation testing
- Establishment of responsive lifecycle engineering at demonstrated lower costs
- World class staff and program in engineering science Research & Development (R&D)

The Engineering Campaign is comprised of four focused subprograms. Each subprogram is a unique contributor to Government Performance and Results Acts (GPRA) Unit Program Goal 2.1.28.00, and each subprogram's contributions are summarized below:

Enhanced Surety - Provides validated surety (safety, security, and use control) technology for the stockpile by developing, validating, and demonstrating advanced initiation and enhanced use-denial options for insertion to ensure that modern nuclear safety standards are fully met and a new level of use-denial performance is achieved.

Weapons Systems Engineering Assessment Technology - Provides the scientific understanding, experimental capability, diagnostic development and data required to develop and validate engineering computational models and develop assessment methodology for weapon design, manufacturing, qualification, and certification needed by the Directed Stockpile Work (DSW) R&D subprogram to maintain the legacy stockpile, refurbish weapons and transform the stockpile, as required.

Nuclear Survivability – Provides the tools and technologies needed to design and qualify components and subsystems to meet requirements for radiation environments (e.g., intrinsic radiation or radiation from production and surveillance radiography), space environments, and hostile environments; develops radiation-hardening approaches and hardened components; and modernizes tools for weapon outputs. This subprogram is integrated with the weapon-specific work within DSW to provide validated tools and technologies for the entire stockpile, including current and future Life Extension Programs (LEPs), alterations (Alts), modifications (Mods), and other possible replacement systems.

Enhanced Surveillance - Provides component and material lifetime assessments to support weapon replacement or refurbishment decisions and develops advanced diagnostics and predictive capabilities for early detection and assessment of stockpile aging concerns, and for cost effective surveillance transformation.

Major FY 2007 Achievements

Enhanced Surety

- A thermoelectric transducer prototype for future weapons systems was fabricated, assembled, and performance tested;
- An extended protected surety volume architecture for various National Nuclear Security Administration (NNSA) missions including transportation, was developed, tested, and demonstrated the ability to detect an unauthorized event;
- Developed Dual Mechanism Stronglink advancing the next-generation initiation system to improve nuclear detonation safety for future LEPs and/or replacement systems; and

- Performed one-dimensional experiments with commercial materials in the technology development of a multi-point safety concept.

Weapons Systems Engineering Assessment Technology
- Completed experiments for developing and assessing models for micro-scale friction and provided model development and validation data to characterize: 1) the effect of time/age dependencies, 2) the effects of hold force, and 3) the effects of bifurcation behaviors;
- Completed heat flux experiments on objects as well as experiments characterizing propellant fire particle concentration, composition and gas temperatures for sizes and orientations of interest for weapon qualification;
- Completed a set of multiple-aperture coupling experiments, which provided data to characterize cavity response to non-ionizing electromagnetic radiation (EMR);
- Completed impact sensitivity characterization for Lawrence Livermore National Laboratory (LLNL) high explosives LX-04, LX-07 and LX- 10, to determine shock initiation criteria in accident-relevant low-amplitude regimes; and
- Completed experiments for characterizing the kinetics of a W76-1 abnormal thermal environment.

Nuclear Survivability
- Completed System Generated Electromagnetic Pulse (SGEMP) studies at varying pressure levels,
- Performed diagnostic development to improve both accuracy and precision of reactor environments for future uncertainty quantification; and
- Improved mechanical response instrumentation development for experimentation and uncertainty qualification needs was done to develop the technologies and capabilities required to ensure nuclear survivability of future replacement systems;
- Completed irradiation source characteristics, including uncertainty quantification, to support the Qualification Alternatives to the Sandia Pulse Reactor (QASPR) approach; and
- Assessed damage relationships for silicon prototypes irradiated at different QASPR relevant facilities.

Enhanced Surveillance
- Provided new Canned Sub-Assembly (CSA) non-destructive testing capability and material aging analyses to support the ongoing W76-1 design and manufacturing efforts necessary to achieve the First Production Unit (FPU);
- Completed an Enhanced Surveillance stockpile aging assessment report to support the annual assessment process;
- Completed selected aging and lifetime assessments to support the W76-1 LEP certification, including work on polymeric materials, XYCE fireset electrical model, commercial off the shelf (COTS) integrated circuits, gel-mylar capacitor, removable encapsulant, and thermal battery;
- Test Program Validation (TPV) activities for the deployment of the W76-1 System Tester for surveillance testing at Weapons Evaluation Test Laboratory (WETL) has been successfully completed and issued Qualification Engineering Release (QER);
- Established initial component and material evaluation capabilities to respond to the new challenges associated with reduced reliance on system-level testing;
- Demonstrated embedded stockpile evaluation test bed relevant to future stockpile modifications, alterations, LEPs, or replacement systems;
- Provided initial aging and lifetime assessments to support future weapon refurbishment or replacement options for sufficient longevity of materials and components; and

- Delivered Detonation Sensor Assembly technology and hardware for W87 Joint Test Assembly (JTA) 4 development.

MESA
- Produced War Reserve (WR)-qualified radiation hardened application-specific integrated circuits (ASICs) at Sandia for the W76-1 and W80-3 LEPs (11 different designs) using the Microelectronics Development Laboratory, which was retooled as part of the MESA project. Issued Critical Decision 4 for the Microsystems Fabrications Facility and Microsystems Laboratory in 3Q FY 2007 and the facilities are fully operational. Completed construction activities for the Weapons Integrations Facility and a dedication ceremony was held in 4Q of FY 2007.

Major Outyear Considerations
The outyear projections for Engineering Campaign total $599,810,000 for FY 2010 through FY 2013, an increasing trend after FY 2009. This increasing trend is due to an additional $105,000,000 being added to the Enhanced Surety subprogram in support of accelerating the maturation of surety technologies for use in the first life extension insertion opportunity.

The outyear funding profile for the Engineering Campaign is structured to enable multi-year engineering R&D efforts and to provide a consistent level of support to DSW for the current stockpile, the refurbished portion of the stockpile, and the transformed, responsive complex envisioned for the future.

Within the FY 2009 – FY 2013 timeframe, the four subprograms focus on:

Enhanced Surety
This subprogram will provide the engineering technology development for improved surety systems for possible alterations or modifications and for any replacement systems with engineering development activities beginning in the FY 2010 or thereafter. The improved surety options developed by this subprogram include advanced systems with improved safety and the next-generation initiation system. Technology for integrated surety options is expected to be matured by this subprogram in this timeframe.

Weapons Systems Engineering Assessment Technology
This subprogram will complete the data sets required to validate thermal and structural engineering models being developed for use in stockpile certification and assessment by FY 2012. Advances in engineering science and continued development of experimental assessment techniques, advanced instrumentation, and related diagnostics is also expected in this timeframe to support the goal of reducing large uncertainties in weapon assessments for current and future stockpile systems.

Nuclear Survivability
Another major funding change is a shift of $12.9M in FY 2009 to the Nuclear Survivability Sub-program from other Engineering Campaign subprograms to reflect the Engineering Campaign priority of development of predictive assessment tools that reduce the reliance on Category I/II SNM test facilities. Additionally the management of all plutonium science activities supporting both initial and aged characteristics has been consolidated under the Science Campaign. Key deliverables include engineering design and assessment tools to meet nuclear survivability requirements without test facilities that use Category I/II special nuclear material, (e.g., SPR) and development of computational tools to evaluate or re-evaluate the weapon output and effectiveness of stockpile weapons, life extension warheads, or future replacement systems.

Enhanced Surveillance
The Enhanced Surveillance deliverables are planned to support predictive age-aware modeling and experimental capability development, enduring stockpile aging and lifetime assessments, embedded stockpile evaluation technology deployment, new and reused material compatibility and longevity assessments for future LEPs or replacement systems, and cost-effective surveillance transformation implementation.

Program Assessment Rating Tool (PART)
The Department implemented a tool to evaluate selected programs. The PART was developed by the Office of Management and Budget (OMB) to provide a standardized way to assess the effectiveness of the Federal Government's portfolio of programs. The structured framework of the PART provides a means through which programs can assess their activities differently than through traditional reviews. The Engineering Campaign has incorporated feedback from the OMB into the FY 2009 Budget Request, and has taken or will take the necessary steps to continue to improve performance.

The results of the OMB review are reflected in the FY 2008 Budget Request. The OMB gave the Engineering Campaign scores of 100 percent on the Program Purpose and Design, and Strategic Planning Sections; 88 percent on the Program Management Section, and 73 percent on the Program Results and Accountability Section. Overall, the OMB rated the Engineering 84 percent, its second highest rating of "Moderately Effective." The OMB assessment found that the program has a clear and unique purpose; has demonstrated progress in achieving annual and long-term goals; is well managed; and has clear and measurable performance metrics to cover a portion of the program. The OMB also noted that, since the majority of the campaign's work is executed by a contractor base in Government-owned facilities, the program cannot use competitive sourcing/cost comparisons for prime procurements. In response to the OMB findings, the NNSA is improving the coordination of NNSA program-related nuclear weapon activities, expanding the linkage of contractor performance awards to performance evaluation, and strengthening procedures to hold contractors accountable for cost, schedule, and results. The NNSA is also continuing to improve the responsiveness of the Nuclear Weapons Complex infrastructure by coordinating program activity with the Nuclear Weapons Complex Transformation Strategy Record of Decision and by integrating program requirements into the new Defense Programs National Level Work Breakdown Structure.

Annual Performance Results and Targets

(R = Results; T = Target)

Performance Indicators	FY 2005 Results	FY 2006 Results	FY 2007 Results	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Endpoint Target
Strategic Goal 2.1 (Nuclear Deterrent) GPRA Unit Program Goal 2.1.28.00, Engineering Campaign										
Cumulative percentage of the Microsystems and Engineering Sciences Applications (MESA) facility project completed (total project cost), while maintaining a Cost Performance Index of 0.9-1.15 (Efficiency)	R: 65% T: 50%	R: 88% T: 65%	R: 95% T: 75%	T: 100%	N/A	N/A	N/A	N/A	N/A	By 2008, complete the major facilities of the MESA project (within the total project cost) while maintaining a Cost Performance Index of 0.9-1.15, and by 2009, complete all activities for project closeout[b]
Cumulative percentage of progress towards an improved initiation system to meet nuclear detonation safety requirements for future alterations or modifications to stockpiled weapons, measured by the number of milestones, in the implementation plan, completed (Long-term Output)	R: 60% T: 60%	R: 70% T: 65%	R: 70% T: 70%	T: 75%	T: 80%	T: 85%	T: 90%	T: 95%	T: 100%	By 2013, complete development of the next-generation initiation system to meet nuclear detonation safety requirements for the future alterations or modifications to stockpiled weapons.
Cumulative percentage of progress towards completion of aging models and assessments, diagnostics, and tools needed for science-based lifetime predictions of specific weapon components and for transformation to more predictive stockpile surveillance, measured by the number of milestones, in the implementation plan, completed (Long-term Output)	R: 24% T: 24%	R: 32% T: 32%	R: 40% T: 40%	T: 47%	T: 53%[b]	T: 59%	T: 64%	T: 71%	T: 77%	By 2017, complete the aging models and assessments, diagnostics, and tools needed to achieve science-based lifetime predictions and stockpile surveillance transformation.
Cumulative percentage of progress towards system engineering methodology for assessing and predicting the effects of large thermal, mechanical, and combined forces on nuclear weapons for future alterations or modifications, measured by the number of experimental data sets, in the implementation plan, completed. (Long-term Output)[a]	R: 26% T: 55%	R: 37% T: 37%	R: 45% T: 45%	T: 53%	T: 67%	T: 79%	T: 90%	T: 100%	N/A	By 2012, complete the development of system engineering methodology for assessing and predicting the effects of large thermal, mechanical, and combined forces on nuclear weapons for future alterations or modifications stockpiled weapons.

[a] In 2006, during the OMB PART evaluation, this performance indicator was redefined and rebaselined. As a result, the Engineering Campaign extended the endpoint target and recomputed annual targets for FY 2007 and beyond; and FY 2004-2006 results are recomputed against new baseline targets.

[b] Rebaselined in 2007 for 2009 completion, based on current results to date, priorities, and available resources.

Performance Indicators	FY 2005 Results	FY 2006 Results	FY 2007 Results	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Endpoint Target
Cumulative percentage completion of design and qualification tools for meeting requirements for survivability in intense radiation environments needed for future alterations or modifications to replace the existing proof-testing approach that uses significant amounts of highly enriched uranium, measured by the number of milestones, in the implementation plan, completed. (Long-term Output)	R: 24% T: 24%	R: 27% T: 27%	R: 40% T: 40%	T: 48%	T: 56%	T: 65%	T: 76%	T: 84%	T: 95%	By 2014, complete the replacement of relevant design and assessment technologies for weapon components allowing future alterations or modifications to meet requirements for survivability in intense radiation environments.

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
Enhanced Surety	**26,666**	**34,137**	**35,641**

A multi-technology approach is pursued by the Enhanced Surety subprogram to develop options for weapon system designers during stockpile alterations, modifications, and transformations. This approach will also address other refurbishments and stockpile improvement projects needed to meet future Department of Defense (DoD) requirements. Multi-technology development and integration opens the design space and offers opportunity for synergistic improvements in other weapon components.

In FY 2009, the multi-lab development of a laser-fired optical initiation system will continue with the maturation and integration of a direct optical initiation fire-set and an optical detonator. The resulting advanced initiation system will offer significant improvements in nuclear detonation safety by eliminating the possibility of any naturally occurring stimuli, such as electrostatic discharge and lightning, from causing the weapon to initiate. Other advanced initiation work includes the development of high performance strong links, an insensitive high explosive booster for miniature high energy density components, and a replacement for sunset material used in thermal weak link. Approaches to integrated safety, security, and use control will continue to be developed to provide enhanced area denial and to better address the design basis threat requirements and will include demonstration of the effectiveness of the technologies in realistic environments. Advances in the ability to synthesize responses from networks of security sensors and in the technology readiness of modern use control technologies responsive to the post 9/11 threat environment will also be pursued.

Weapons Systems Engineering Assessment Technology	**21,102**	**19,314**	**17,105**

The Weapons Systems Engineering Assessment Technology (WSEAT) subprogram uses engineering computational models in collaboration with the Advanced Simulation and Computing (ASC) Campaign to predict weapon system response to three Stockpile-to-Target Sequence environments: normal, abnormal, and hostile. The activity also supports manufacturing development of critical components and subsystems; e.g., neutron generators, gas transfer systems, and microsystems. The subprogram objective is to establish the capability to predict engineering margins by integrating numerical simulations with experimental data. Validated computational tools are required to explore the operational parameter space of the nuclear weapons stockpile. Exploration of operational parameter space identifies failure modes and boundaries, thus, establishing engineering margins.

In FY 2009, the subprogram will focus on producing data sets for code validation in support of current weapon alterations and modifications and legacy stockpile support. Combined efforts between the ASC Verification & Validation and Physics & Engineering Models programs is a key principle of WSEAT and provides validated modeling and simulation capability for multi-scale and multi-physics problems encountered in qualification and certification activities. Work will continue on non-intrusive instrumentation and high explosive structural property measurements supporting model development for improved assessments of structural response, and margins for insensitive high explosive main charge materials.

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
Nuclear Survivability	**15,662**	**8,644**	**21,753**

The tools and technologies developed by the Nuclear Survivability subprogram are required to assess changes made to the stockpile through scheduled refurbishments; weapon replacement activities; surveillance discoveries; natural aging; or the introduction of new materials, technologies, or designs to meet weapon requirements. The scope of the activity includes developing scientific models for understanding radiation effects phenomenology; generating experimental data to validate computational tools; understanding radiation-hardened design strategies; evaluating new and evolving stockpile candidate technologies for radiation hardness capabilities in a generalized, weapon-relevant configuration; studying radiation hardening aging phenomena for the long-term stockpile; and improving laboratory radiation sources and diagnostics to support code validation and hardware qualification experiments. Stockpile deliverables for qualifying specific components and systems to nuclear survivability requirements are funded under the DSW weapon category requiring the deliverable. In the absence of underground testing, and with the closure of specialized research reactors, the DSW activity relies increasingly on complex models and calculations supported by limited experimental evidence obtained on above ground radiation simulators and new analysis methodology, which are all provided by this subprogram. The subprogram also develops, in conjunction with the DoD, the tools to calculate the output and performance of modern weapons needed to define some of the most stressing prompt nuclear environments. This computational capability is critical to the DoD threat assessments and effectiveness assessments as required by the Atomic Energy Act. These improvements in modeling are transformational, in that they allow quicker response in analyzing both threats and warhead survivability issues.

In FY 2009, planned activities include: tools and technologies to support a QASPR which supports future strategic systems or alterations/modifications to the enduring stockpile; development of scientific models for understanding ionizing radiation effects phenomenology; and generating experimental data to validate computational tools to evaluate or re-evaluate the weapon output and effectiveness of stockpile weapons, life extension warheads, or future replacement systems.

Enhanced Surveillance	**86,783**	**79,073**	**68,243**

This subprogram develops aging models and technologies needed for early identification and assessment of stockpile aging concerns. The subprogram provides assessments on the new materials to be used in refurbished or replacement weapons to support age-aware design and increase longevity for a more sustainable stockpile. Enhanced Surveillance develops new diagnostics and methods, including non-destructive techniques, for the DSW program to transform surveillance to be more predictive in finding defects in weapons sampled from the stockpile. The subprogram develops embedded sensor and communication architectures for the stockpile of the future to achieve timely, less invasive and less costly surveillance. Finally, the subprogram contributes current weapon aging information to the Annual Assessment Reports, which inform the President that the stockpile is safe and reliable. In FY 2009, the subprogram will provide updated weapon aging information for the Annual Assessment Report process; conduct component and material lifetime assessments in support of the enduring stockpile and future LEPs or replacement systems; develop component and material evaluation, enhanced system-level testing, performance margin degradation testing, non-destructive evaluation, embedded evaluation, and other capabilities to support cost-effective surveillance transformation; continue research on aging mechanisms and develop predictive models and

diagnostics for the earliest possible detection of aging changes that could impact weapon performance, reliability, and safety.

The Enhanced Surveillance subprogram continues to support the University Research Program in Robotics (URPR) which provides a focused university partnership program for engineering science, an important element in sustaining the intellectual diversity of the NNSA laboratory complex. The URPR is managed to provide a range of transformational technologies with relevance to the stockpile stewardship mission through the Engineering Campaign. In FY 2009, this effort will be funded at $2,100,000. (Funded in FY 2007 at $4,311,000 and in FY 2008 at $4,237,000.)

In FY 2009, the participating universities (the University of Florida, University of Michigan, University of New Mexico, University of Texas at Austin, and University of Tennessee, Knoxville) will continue established partnerships with Los Alamos National Laboratory (LANL), Lawrence Livermore National Laboratory (LLNL), Sandia National Laboratory (SNL, Idaho National Laboratory (INL), Pacific Northwest National Laboratory (PNNL), Pantex Plant (PX) , Y-12 National Security Complex (Y-12), Kansas City Plant (KCP), and Savannah River Site (SRS) to develop robotics technologies in the following specific areas: 1) nano-scale sensing and manufacturing techniques (directly relevant to Stockpile Stewardship Program [SSP]); 2) small electric flying hoverbots for security and surveillance; 3) personnel tracking devices that operate indoors and without external beacons; 4) radiation imaging cameras for inspection of facilities; 5) rapid automated cargo container inspection techniques; 6) radiation hardening of electronics used in Department of Energy (DOE) assets; 7) rapidly reconfigurable manufacturing simulation and control algorithms; and 8) highly modular actuators for robot arms. The program will continue work in demonstration of an agile serpentine robot for inspection and repair and testing of vehicle surveillance platforms that can inspect underneath trucks and automobiles.

Microsystems and Engineering Sciences Applications (MESA) Other Project Costs	**4,603**	**7,485**	**0**

The MESA Project is being developed to incorporate modern, survivable, electrical, optical and mechanical control systems into the stockpile where required. These control systems are critical for improving the safety, security, and reliability of the stockpile during the LEP refurbishment activities and for replacement weapon systems in a transformed stockpile. FY 2008 Other Project Costs (OPC) will include Decontamination and Demolition (D&D) of the Compound Semiconductor Research Lab, environmental, safety and health (ES&H) activities, and the safety assessment and operational support costs during construction.

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
Ion Beam Laboratory Refurbishment Construction (08-D-806)	**0**	**9,911**	**0**

Sandia National Laboratories will construct a replacement facility for the Ion Beam Laboratory (IBL) facility at Sandia New Mexico. The IBL facility will provide a standalone capability for the use of accelerated ions for research, development, and testing. The Ion Beam Laboratory project is a replacement and upgrade of an existing laboratory which will completely replace that facility. The project will provide the following: design and construction of a replacement building and building systems; relocation of key accelerators and other equipment from the current facility; upgrades to key pieces of equipment; one new accelerator; one new focused ion beam implanter; replacement office space for staff; space to optimize beam line layout, equipment configurations and safety and operational efficiencies to allow for simultaneous set up and test; and communications cabling and network electronics to support unclassified and classified ultra-high speed local computing in inter-connectivity to supercomputing resources.

The replacement building is an office and light duty high bay structure. The building size and shape is dictated by the accelerator, beam line, and equipment layout and shielding and separation requirements. This configuration has been modeled for radiation exposures to be As Low As Reasonably Achievable (ALARA). The facility will provide office space and laboratory space for seven accelerators and associated controls, including areas for classified beam line work. In FY 2009, this project will be requesting funding of $10,014,000 under the Readiness in Technical Base and Facilities (RTBF) program.

Microsystems and Engineering Sciences Applications (MESA) Construction (01-D-108)	**6,920**	**10,984**	**0**

The MESA Complex will provide for the design, integration, prototyping and fabrication, and qualification of microsystems into weapon components, subsystems and systems within the stockpile as well as the integrated facility for the development and use of responsive engineering processes. The performance baseline for MESA was established on October 8, 2002. Additional appropriations from Congress in previous years have allowed the two-year acceleration of the project with beneficial occupancy of the Weapons Integrations Facility. The last of the three primary buildings is scheduled for competition in FY 2008 and project closeout in FY 2009.

Total, Engineering Campaign	**161,736**	**169,548**	**142,742**

Explanation of Funding Changes

	FY 2009 vs. FY 2008 ($000)
Enhanced Surety	
The increase in funding is necessary to broaden the Enhanced Surety program scope and further mature the surety technology development for stockpile activities that focus on improvements to the existing stockpile and other projected alterations or modifications including the B61 and other weapon systems.	+1,504
Weapons Systems Engineering Assessment Technology	
The decrease is consistent with the close out of work for the W80-3 LEP which is slightly offset by the continuation of activities required to understand and assess engineering phenomena associated with new technologies, such as Microsystems, targeted for use in future LEPs or replacement systems while continuing high explosive structural property, system safety, and hostile response assessments	-2,209
Nuclear Survivability	
The increase reflects funding necessary to develop a major deliverable necessary to provide the capability to assess the affects of radiation on nuclear weapons and components without underground testing or test facilities using Category I or II SNM on a time frame consistent with projected DSW needs. The increase will accelerate development of this capability in FY 2009, including numerous activities focused on experimental technique refinement for device characterization using different existing experimental facilities throughout the Complex and the DoD. These activities are complemented by a parallel modeling and simulation effort that integrates experimental regimes in order to provide a sound qualification methodology for required radiation environments.	+13,109
Enhanced Surveillance	
The decrease reflects the transfer of pit lifetime scope to Science Campaign and reduced funding for the University Research Program in Robotics (URPR). Also reflects reallocation of funding to support other priorities within Defense Programs including support for the QASPR Project in the Nuclear Survivability subprogram and operations of the Z Machine at Sandia under the Science Campaign. Activities within this subprogram continue to support high priority component aging assessments, reused or replaced material longevity studies, and cost-effective surveillance transformation for earlier identification of stockpile problems.	-10,830

	FY 2009 vs. FY 2008 ($000)
Microsystems and Engineering Sciences Application (MESA) Other Project Costs	
Project activities are scheduled to be completed by the end of FY 2008. Therefore, no funds are needed beyond FY 2008.	-7,485
Ion Beam Laboratory Refurbishment Construction (08-D-806)	
For FY 2008, the Congress authorized $9,911,000 to be appropriated for this project as part of the Engineering Campaign. Therefore, the capital acquisition procurement process will be initiated in FY 2008. In FY 2009 and beyond, however, the program will be funded and executed as a Line Item Construction project under the Readiness in Technical Base and Facilities (RTBF) program.	-9,911
Microsystems and Engineering Sciences Application (MESA) Construction	
Project activities are scheduled to be completed by the end of FY 2008. Therefore, no funds are needed beyond FY 2008.	-10,984
Total Funding Change, Engineering Campaign	**-26,806**

Capital Operating Expenses and Construction Summary

Capital Operating Expenses[a]

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
General Plant Projects	100	103	106
Captial Equipment	3,113	3,206	3,302
Total, Capital Equipment	**3,213**	**3,309**	**3,408**

Outyear Capital Operating Expenses

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
General Plant Projects	109	112	115	118
Captial Equipment	3,401	3,503	3,608	3,716
Total, Capital Equipment	**3,510**	**3,615**	**3,723**	**3,834**

Construction Projects[b]

	Total Estimated Cost (TEC)	Prior-Year Appro-riations	FY 2007	FY 2008	FY 2009	Unappro-priated Balance
08-D-806, Ion Beam Laboratory Refurbishment	34,813	0	0	9,911	0	
01-D-108, Microsystems and Engineering Sciences Application (MESA)	455,322	437,418	6,920	10,984	0	
Total, Construction			**6,920**	**20,895**	**0**	

[a] Since 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. FY 2008 and FY 2009 funding shown reflects estimates based on actual FY 2007 obligations.

[b] For FY 2008, the Congress authorized $9,911,000 to be appropriated for the Ion Beam Laboratory Refurbishment project (08-D-806) as part of the Engineering Campaign. The capital acquisition procurement process will be initiated in FY 2008. In FY 2009 and beyond, however, the program will be funded and executed as a Line Item Construction project under the Readiness in Technical Base and Facilities (RTBF) program.

Inertial Confinement Fusion Ignition and High Yield Campaign

Funding Schedule by Activity

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
Inertial Confinement Fusion Ignition and High Yield Campaign			
Ignition	78,827	103,029	103,644
Support of Other Stockpile Programs	5,872	0	0
NIF Diagnostics, Cryogenics, and Experimental Support	45,959	68,107	68,248
Pulsed Power Inertial Confinement Fusion	9,584	10,241	8,920
University Grants/Other ICF Support	12,186	0	0
Joint Program in High Energy Density Laboratory Plasmas	0	3,152	3,147
Facility Operations and Target Production	53,796	112,012	180,384
Inertial Fusion Technology	26,412	29,426	0
NIF Assembly and Installation Program	143,438	134,294	56,899
High-Energy Petawatt Laser Development	2,213	0	0
96-D-111, National Ignition Facility	111,419	9,945	0
Total, Inertial Confinement Fusion Ignition and High Yield Campaign	**489,706**	**470,206**	**421,242**

Outyear Funding Schedule

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
Inertial Confinement Fusion Ignition and High Yield Campaign				
Ignition	105,711	90,447	83,908	84,560
Support of Other Stockpile Programs	0	0	0	4,896
NIF Diagnostics, Cryogenics, and Experimental Support	76,295	63,774	64,623	65,668
Pulsed Power Inertial Confinement Fusion	12,056	11,255	10,996	10,772
University Grants/Other ICF Support	0	0	0	0
Joint Program in High Energy Density Laboratory Plasmas	3,193	2,995	2,987	2,927
Facility Operations and Target Production	236,752	212,702	210,491	208,939
Inertial Fusion Technology	0	0	0	0
NIF Assembly and Installation Program	0	0	0	0
High-Energy Petawatt Laser Development	0	0	0	0
96-D-111, National Ignition Facility	0	0	0	0
Total, Inertial Confinement Fusion Ignition and High Yield Campaign	**434,007**	**381,173**	**373,005**	**377,762**

Description

The goal of the Inertial Confinement Fusion Ignition and High Yield (ICF) Campaign is to develop laboratory capabilities to create and measure extreme conditions of temperature, pressure, and radiation, including thermonuclear burn conditions approaching those in a nuclear explosion, and to conduct weapons-related research in these environments.

The Campaign provides high-energy-density (HED) capabilities and scientific understanding to maintain the safety, security, and reliability of the nation's nuclear weapons without nuclear testing. To this end,

the highest priority is to achieve laboratory thermonuclear ignition and burn. The ICF Campaign has four strategic objectives:

- Achieve thermonuclear ignition in the laboratory and develop it as a scientific tool to support stockpile stewardship.

- Support the development and execution of HED physics (HEDP) experiments necessary to provide advanced assessment capabilities for stockpile stewardship.

- Develop advanced technology capabilities that support long-term needs of the Stockpile Stewardship Program (SSP) in the high energy density regime.

- Maintain a robust national program infrastructure related to high energy density physics and attract scientific talent to the SSP.

A major focus of the ICF Campaign over the past decade has been the construction of the National Ignition Facility (NIF) with the primary goal of achieving ignition and thermonuclear burn in the laboratory. NIF is on track to be completed on schedule in mid-2009.

The ICF Campaign has also added new capabilities to existing facilities such as the refurbished Z-machine and OMEGA Extended Performance (EP). The newly refurbished pulsed-power Z-machine, coming on-line in FY 2008 will provide more shot capacity, improved precision and pulse shape flexibility, and higher current. Similarly, the high-energy, short pulse capability at Omega EP will enable higher energy backlighting for advanced radiography.

The budget request provides $64,000, 000 for operation and utilization of Z at SNL. The budget request includes $8,920,000 in pulsed power fusion, $31,870,000 in Z facility operations, and $1,210,000 in NIC activities within the ICF and High Yield Campaign. In addition, $22,000,000 is provided by the Science Campaign. All RTBF funds for Z have been moved to the ICF account.

To focus programmatic activities to achieve ignition, the ICF Campaign established in 2005 a multi-site, integrated effort called the National Ignition Campaign (NIC). The partners in the NIC include the Lawrence Livermore National Laboratory (LLNL), Los Alamos National Laboratory (LANL), Sandia National Laboratories (SNL), University of Rochester's Laboratory for Laser Energetics (LLE), and General Atomics. The NIC has two primary objectives: 1) Perform ignition experimental campaigns on the NIF beginning in FY 2010, and; 2) Transition the NIF from project completion to routine facility operations in the second quarter of FY 2012. Because of the importance of the NIC, it is managed as an Enhanced Management Program. As such, the NIC is required to adhere to a rigorous set of project management standards that includes a formal execution plan. This plan describes the multi-year (beginning-to-end) scope, schedule, and budget baseline. The NIC baseline is under formal change control and progress is monitored using an earned value management reporting process.

The ignition mission was identified in the early 1990s and its role in SSP was reaffirmed by the Defense Science Board in 2004 as providing “the much needed understanding of the most important remaining questions in weapons physics.” A formal milestone of the NIC is the initiation of the first ignition experiments in FY 2010 and the project's execution plan has been extensively reviewed by the JASONs. The JASONs review stated: “the scientific and technical challenges in such a complex activity suggest

that success in the early attempts at ignition in 2010, while possible, is unlikely. The Program planned a reasonable roadmap for progress toward ignition after the initial attempts."

The ICF Campaign, through NIF and its other HED facilities, is a vital component of the responsive infrastructure that will be used to support the evolving stockpile and to address emerging threats. The NIF will be unique and, by far, the most capable HED facility in the world for at least the next 5 to 10 years; it will provide extraordinary opportunities for significant scientific progress and discovery in regimes of extreme temperatures, pressures, and densities.

The demonstration of ignition at NIF will be a major scientific breakthrough for the nation. In addition to its importance for stockpile stewardship, the demonstration of ignition will be of major importance for the Department's fundamental science and energy missions. An important link between the National Nuclear Security Administration (NNSA) and the Department of Energy (DOE) Office of Science was established in FY 2008 through the new Joint Program in High Energy Density Laboratory Plasmas (HEDLP). This program has the responsibility for nurturing the field of HEDP and helping to train the next generation of HEDP professionals needed to support the NNSA national security mission and to steward the stockpile.

Within the ICF Campaign, there are 10 subprograms, each of which makes a unique contribution to Government Performance and Results Act (GPRA) Unit Program Goal 2.1.29.00.

The Ignition subprogram includes advanced theoretical modeling, target design, and experiments on ICF facilities aimed at initiating thermonuclear fusion ignition in the laboratory to assess weapon performance issues related to thermonuclear burn.

The Support of Other Stockpile Programs subprogram develops experimental capabilities to apply high energy density methods to important stockpile stewardship issues.

The NIF Diagnostics, Cryogenics, and Experimental Support subprogram provides experimental infrastructure and equipment, including the Personnel and Environmental Protection Systems, target diagnostic engineering and construction, the systems to support utilization of cryogenic targets, and beam conditioning optics that provide the specific focusing conditions required for various experiments.

The Pulsed Power Inertial Confinement Fusion subprogram supports the assessment of Z-pinch as a method for achieving ignition and high yield.

The Joint Program in High Energy Density Laboratory Plasmas subprogram supports joint activities with the Office of Science to steward the study of laboratory high energy density plasma physics within DOE. This includes funds to support external user programs at the University of Rochester. The NNSA portion of the joint program is funded via both the ICF Campaign and the Science Campaign. Previously, these activities were funded in the University Grants/Other ICF Support budget category.

The University Grants/Other ICF Support subprogram previously funded three major activities: high energy density activities within the Stockpile Stewardship Academic Alliances Program, the National Laser User Facility program at the University of Rochester, and direct technical support for the ICF Campaign. In FY 2008, the university grants and research programs in the high-energy-density science

portion of the Stockpile Stewardship Academic Alliances Program were transferred to the Science Campaign. Both the high energy density physics activities within the Stockpile Stewardship Academic Alliances and the National Laser User Facility program are funded within the Joint Program in High Energy Density Laboratory Plasmas. Direct technical support for the ICF Campaign will be funded within the Facility Operations and Target Production subprogram.

The Facility Operations and Target Production subprogram supports operations at NIF after project completion, the OMEGA laser system, and Z, as well as activities at the target fabrication subcontractor. This subprogram also supports outside reviews and other support for the Campaign.

The subprogram for Inertial Fusion Technology has supported the development of high repetition rate laser and pulsed power devices and associated technologies required to conduct experiments with these drivers.

The NIF Assembly and Installation Program (formerly the NIF Demonstration Program) budget category is integral to completion of the NIF, and funds line replaceable unit assembly, installation, and qualification.

The subprogram for High-Energy Petawatt Laser Development has supported technology development for and construction of high-energy petawatt lasers. The construction of the OMEGA EP was funded within this subprogram.

Major FY 2007 Achievements

- **National Ignition Campaign (NIC)**:

  Achieved important refinements to the ignition target design to optimize the balance between laser-plasma instability effects, laser performance impacts, and capsule robustness. To reduce laser intensities and laser-plasma instabilities, made design calculations for a larger diameter hohlraum and updated the point design to a beryllium (Be) capsule at a slightly lower radiation temperature (285 vs. 300 eV) requiring a slightly higher laser energy on target (1.3 megajoules vs. 1.0 megajoules). Also conducted experiments using a flat fourth pulse, rather than the near-Gaussian shape used in the point design to reduce backscatter gain. The flat pulse appears to allow a 5 to 10 percent reduction in backscatter gain.

  Received important recognition in the scientific community for efforts toward achieving ignition and thermonuclear burn in the laboratory. John Lindl, Chief Scientist for the NIF and a recognized expert in target design for inertial confinement fusion, was awarded the 2007 James Clerk Maxwell Prize in Plasma Physics by the American Physical Society.

  Achieved excellent progress in demonstrating the fabrication of scientific prototype ignition capsules with both beryllium (Be) and plastic material, including the completion of the Be ignition shell capsule characterization capability. Produced a 2 mm diameter prototype Be ignition capsule with 3 copper (Cu)-doped interspersed layers, per the point design specifications. The prototype capsule did not exhibit any detectable leakage of helium gas at either room or cryogenic temperatures.

Performed thorough characterization of Be as an ablator material through shock-melting and microstructure experiments on Z, OMEGA, and Trident. The results were consistent with predictions from advanced dynamic materials models. The diagnostic technique was validated for timing the first three shock waves for indirect-drive ignition.

Performed direct drive experiments that provided important confirmation of implosion hydrodynamics relevant to both indirect and direct drive ignition. The baseline approach to achieve ignition is through indirect drive ignition where a fuel capsule, located inside a radiation container, or hohlraum, is compressed by x-rays produced by laser irradiation of the inner hohlraum wall. The NIC ignition physics research plan also includes experiments involving direct-drive ignition where the laser directly irradiates and heats the nuclear fuel containing capsule. There is great similarity in the implosion hydrodynamics of the direct and indirect approaches. For the first time measured 200mg/cm^2 of fuel areal density (ρr) in cryogenic direct-drive implosions using the OMEGA laser. This represents the highest laser-assembled hydrogenic areal density ever achieved and is a key precursor to ignition on NIF.

Determined key specifications for laser beam spatial smoothness. Specified and conducted a stakeholder review of requirements for laser irradiance including beam smoothing and beam spot size. Facility placed requirements for the initial ignition experiments are under configuration management. With the beam spot size defined, initiated fabrication (imprinting) of the continuous phase plates (CPPs) which are specialized optics used for shaping the focal spot of the laser beam on target.

Developed an effective process for CPP production by a team from LLNL that received a 2007 R&D 100 award for this work.

Made considerable progress on installation and activation of infrastructure systems required by the NIC. Completed the preliminary design for the Personnel and Environmental Protection System (PEPS), including the general decontamination work station, the waste handling system, monitoring systems, and the shield doors.

Completed all nine NIC FY 2007 Program/Level-2 milestones - most of the nine milestones were completed ahead of schedule.

- **NIF Project:** NIF Line Item and NIF Assembly and Installation Program

  Completed 94 percent of the NIF Project -- all work has been conducted while maintaining an excellent safety record.

  Completed installation of more than 74% of the line replaceable units (LRUs), the basic optical building blocks for the laser system, including all LRUs in Laser Bay 2, the safety interlock system and amplifier cooling process utilities in Laser Bay 1, and all of the flashlamps in Laser Bays 1 and 2.

  Successfully carried out the assembly and installation of all components in accordance with the approved baseline.

Performance-qualified a single bundle (8 beams) utilizing the Precision Diagnostic System (PDS), a project completion criteria requirement.

Successfully operated the main laser (infrared) section for 12 bundles (96 beams total), delivering high quality beams with the desired pulse shape and energy (150 kJ of energy in the infrared) to the calorimeters and the PDS.

Performed the first infrared system shot for a cluster of beams (48 beams total), simultaneously firing 6 full bundles in Laser Bay 2.

Successfully demonstrated the NIF Control System architecture, involving over 60,000 individual control points, needed to simultaneously fire all 192 laser beams.

- **Other ICF Accomplishments:**

Completed the OMEGA EP beamline and target chamber construction phase for four beams, including all beamline structures, the grating compressor chamber, the target area structure, and the target chamber installation. Completed fabrication and installation of the Grating Compressor internal structures. Aligned and operated all four beams to the output of the transport spatial filter. OMEGA EP is on track to be completed in the third quarter of FY 2008, on schedule.

Successfully completed refurbishment of the Z pulsed power facility at SNL enabling significant improvements in facility performance, precision, and flexibility. Increased the maximum current from 18 to 26 Megaamperes and achieved capability to vary the pulse duration of the machine current from 130 to 250 nanoseconds. Increased the number of diagnostic lines-of-sight from nine to forty-five.

Upgraded the Z-Beamlet laser at SNL to increase its output power nearly a thousand fold to the petawatt level. This capability is needed because the refurbished Z requires a higher-energy, more penetrating source of diagnostic x-rays. The Z-Petawatt upgrade began operations in December 2007 with output laser energies up to 400 joules.

Implemented, by SNL, a governance plan for the Z facility as a shared national capability. SNL formed an advisory committee to provide advice on program balance and experimental priorities. In addition, the operational and diagnostic requirements for the refurbished Z were defined in a national workshop and are being implemented.

Extended, by the Naval Research Laboratory (NRL), the region of stability for high–gain operation in the direct drive configuration. Using Nike krypton fluoride laser, the NRL group is exploring higher intensities because these allow the ability to reach ignition at lower laser energies. The inherent properties of krypton fluoride increase stability in the high intensity regime. Modeling results show that sufficient stability can be achieved, and experimental results show that there are no deleterious laser plasma effects as intensities are increased to 2×10^{15} W/cm^2.

Completed, by the Lawrence Livermore High-Average-Power Laser (HAPL) group, the milestone for operation of the Mercury laser at 600 watts with a demonstration of 61 Joules/shot at 10 Hz for a five minute run. Mercury's front end system was upgraded with an advanced seed pulse generation system. The new front end will allow optical bandwidth up to 0.1 terahertz (THz) to be achieved, enabling shorter pulse durations and higher output fluences.

Successfully concluded, by the NRL HAPL, efforts to transform the Electra system to a complete laser system. Electra now consists of six angularly multiplexed beams, a discharge pumped master oscillator, and two electron beam pumped amplifiers. It has produced more than 400 Joules in single shot mode, and operates at 5 Hz for short bursts**.** In addition, significant advances have been achieved in grazing-incidence metal mirror technology, namely, demonstrating a high-damage threshold of 15 Joules/cm^2 at a half million shots.

Major Outyear Priorities and Assumptions

The outyear projections for the ICF Campaign total $1,565,947,000 for FY 2010 through FY 2013.

Laboratory thermonuclear ignition remains the highest priority goal for the ICF Campaign due to its importance in addressing some of the major unresolved issues in weapons physics. By the end of FY 2010, the NNSA will begin a series of experiments to achieve ignition. Achieving fusion ignition and thermonuclear burn in the laboratory has never been accomplished. Expert review panels have projected that it will take two to three years of experiments to understand and overcome the unknown physics issues that arise and to achieve fusion ignition.

The NIC is fully budgeted through the initial 2010 experiments, and will be budgeted in 2011 and beyond at a level consistent with achieving fusion and preparing NIF for future experimental campaigns as quickly as practicable. While NIC funding reflected in the FY 2009 Request is below the baseline for 2011 and beyond, the NNSA is retaining the baseline goals and schedule, and will adjust the budget in the future years as necessary.

The funding for and the operation of most of the high energy density physics capability within the United States is contained within the ICF Campaign, and the Campaign is the leading such program in the world. This high energy density physics capability serves three primary DOE missions: 1) National Security (stockpile stewardship), 2) Fundamental science, and 3) Advanced energy development. Following the achievement of ignition, the Department anticipates a re-evaluation of the relative importance of these missions and the role of the various ICF Campaign program elements and facilities in supporting these missions in a constrained budget environment.

Program Assessment Rating Tool (PART)

The Department implemented a tool to evaluate selected programs. The PART was developed by the Office of Management and Budget (OMB) to provide a standardized way to assess the effectiveness of the Federal Government's portfolio of programs. The structured framework of the PART provides a means through which programs can assess their activities differently than through traditional reviews. The ICF Campaign has incorporated feedback from the OMB into the FY 2009 Budget Request, and has taken or will take the necessary steps to continue to improve performance.

The results of the OMB review are reflected in the FY 2005 Budget Request. The OMB gave the ICF Campaign scores of 100 percent on the Program Purpose and Design Section, 90 percent on the

Strategic Planning Section, 89 percent on the Program Management Section, and 60 percent on the Program Results and Accountability Section. Overall, the OMB rated the ICF Campaign 77 percent, its second highest category of "Moderately Effective." The OMB assessment found that the program appears to be better managed than it was several years ago. Additionally, the OMB assessment found that clear and succinct performance measures were difficult to articulate for the program. In addition, the OMB encouraged frequent monitoring by independent evaluators, to include those retained by the Department of Defense (DoD). In response to the OMB findings and Congressional direction, the NNSA arranged for and conducted a Defense Science Board review of the NIF in FY 2004 and a JASON Committee Review and an Independent Review of the NIF Project by the DOE Office of Science in FY 2005. An independent review of both the NIC and the NIF together was conducted in the last quarter of FY 2006. The NNSA continues to refine its performance measures, and will continue frequent monitoring by independent evaluators, including the DoD. The NNSA is also continuing to improve the responsiveness of the Nuclear Weapons Complex infrastructure by coordinating program activity with the Nuclear Weapons Complex Transformation Strategy Record of Decision and by integrating program requirements into the new Defense Programs National Level Work Breakdown Structure..

Annual Performance Results and Targets

(R = Results; T = Target)

Performance Indicators	FY 2005 Results	FY 2006 Results	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Endpoint Target
Strategic Goal 2.1 (Nuclear Deterrent) GPRA Unit Program Goal 2.1.29.00, Inertial Confinement Fusion Ignition and High Yield Campaign										
Cumulative percentage of progress towards demonstrating ignition (simulating fusion conditions in a nuclear explosion) at the National Ignition Facility (NIF) to increase confidence in modeling nuclear weapons performance (Long-term Outcome)	R: 65% T: 67%	R: 71% T: 73%	R: 80% T: 80%	T: 86%	T: 93%	T: 100%	N/A	N/A	N/A	By 2010, complete first attempt to demonstrate ignition on the NIF.
Cumulative percentage of construction completed on the 192-laser beam NIF (Long-term Output)	R: 81% T: 81%[a]	R: 88% T: 87%	R: 94% T: 94%	T: 98%	T: 100%	N/A	N/A	N/A	N/A	By 2009, complete NIF construction.
Cumulative percentage of equipment fabricated to support ignition experiments at NIF (Long-term Output)	R: 21% T: 26%	R: 45% T: 45%	R: 63% T: 63%	T: 82%	T: 95%	T: 100%	N/A	N/A	N/A	By 2010, complete fabrication of cryogenics and diagnostics equipment to support ignition experiments on the NIF.
Annual number of days available to conduct stockpile stewardship experiments, totaled for all ICF facilities (Annual Output) [a]	R: 700 T: 500	R: 691 T: 400	R: 403 T: 270	T: 240	T: 200	T: 260	T: 290	T: 290	T: 290	By 2011, increase ICF facility availability to 290 total days per year.
Annual average hours per experiment required by the operational crew to prepare the Z facility for an experiment (Efficiency) [b]	R: 10.8 T: 9	R: 10.3[b] T: 11	R: 0 T:11	T: 11	T: 9	T: 9	T: 9	T: 9	T: 9	By 2009, reduce the operational crew preparation time per Z facility experiment to 9 hours. (2004 Baseline equivalent of 11 hours/experiment)

[a] Fluctuations in numbers result from termination of Nike Operations at NRL in 2009, refurbishment of ZR at SNL in 2007 (no shots), and availability of NIF beginning in 2010.

[b] Additional radiation safety procedures required revision of annual and endpoint targets by +2 hours in 2006. Facility did not operate in 2007 due to due to major refurbishment.

Detailed Justification

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
Ignition	**78,827**	**103,029**	**103, 644**

Supports research and development and experimental activities aimed at optimizing prospects for achieving indirect- and direct-drive inertial confinement fusion ignition. Applies ASC-derived capabilities to ignition target design calculations in both two and three dimensions. Includes research, development, and validation of ignition target fabrication and assembly methods, development of target diagnostic techniques, and computer code and modeling improvements essential to ignition efforts.

In FY 2009, emphasis will continue on critical path activities required to achieve indirect-drive ignition and current experimental activities that support this campaign. Experiments in support of the ignition goal will be carried out on OMEGA and Z, although some reduction in these activities may be necessary in order to support the mainline pursuit of the first ignition experiments in 2010. Experiments on the OMEGA laser will complete full target illumination characterization diagnostics and validation of convergent shock timing diagnostic methods. Polar direct drive beam smoothing requirements will be determined, a scientific prototype of the NIF direct-drive target will be demonstrated, and a determination on NIF facilitization for polar direct drive (PDD) ignition experiments will be made in FY 2009, a Level-1 milestone.

In FY 2009, there will be continued refinement of requirements for the first ignition experiments in 2010. When the first 96 NIF beams become available in FY 2009, experimental campaigns will begin to optimize and validate the drive temperature including target scale, energy, and local spot size. Laser performance in terms of beam propagation, beam pointing accuracy, and synchronization will also be verified. These efforts will be followed by tuning campaigns to adjust the radiation symmetry, shock timing within the capsule, and ablation rate using scaled-targets. To gain a better understanding of the complex integration and operational issues associated with the NIF, the NIC execution plan in FY 2009 also calls for commissioning of key diagnostic systems synergistically in parallel with the experimental campaigns. Also in FY 2009, the early experimental campaigns will be repeated and commissioned diagnostics will be validated with the full complement of 192 beams. At that time, power balance between the inner and outer cones of beams will be optimized in preparation for initial experiments with layered cryogenically cooled targets. This program also includes funding in FY 2008 for the Laboratory Laser Energetics (LLE) operations at the University of Rochester.

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
Support of Other Stockpile Programs	**5,872**	**0**	**0**

This effort supports planned uses of ignition for Stockpile Stewardship applications. While funding is not requested in the ICF Campaign in FY 2009, activities will be continued at a modest level in the Science Campaign.

NIF Diagnostics, Cryogenics and Experimental Support	**45,959**	**68,107**	**68,248**

This effort supports technologies needed for the first ignition experiments and for execution of other HEDP experiments on the NIF. This category of work includes: design activities and initial procurements for the personnel and environmental protection systems (e.g. shielding and tritium processing); engineering and fabrication of the NIF diagnostics; design and construction of the NIF cryogenic target system; development and activation of optics processing capabilities required to produce the necessary smoothing optics for ignition experiments and subsequent campaigns; and integration and experimental commissioning of the NIF target area. This also includes development and deployment of experimental campaign management software, including data repositories and visualization tools. During FY 2009, the major emphasis will continue to be placed on preparation for the NIF ignition experiments, including completion of full target illumination characterization diagnostics, qualifying cryogenic target production, beginning assembly and testing of opposed port shroud remover in the cryogenic system, and installation of the Personnel and Environmental Protection System (PEPS) for tritium operations. This program also includes funding in FY 2008 for the Laboratory Laser Energetics (LLE) operations at the University of Rochester.

Pulsed Power Inertial Confinement Fusion	**9,584**	**10,241**	**8,920**

Funds computational target design, experiments, and experimental infrastructure to assess pulsed power as a means to achieve thermonuclear fusion. Although not as advanced as laser-driven fusion, pulsed power has the potential to be an efficient and lower cost approach to ignition and high yield in the laboratory. The pulsed power fusion program develops experimental and theoretical expertise, advanced diagnostics, and experimental techniques required to provide quantitative data essential to the quantification of margins and uncertainties (QMU) process for stockpile stewardship. The program also advances the science and technology of megajoule-class pulsed power systems to improve efficiency, reliability, precision, repetition rate, and to reduce costs. The focus of experiments on the refurbished Z in FY 2009 will be a demonstration of compression of the fusion fuel to high density. High-resolution measurements of the fusion fuel configuration will be used to validate large-scale numerical predictions of target performance.

University Grants/Other ICF Support	**12,186**	**0**	**0**

The University Grants/Other ICF Support subprogram funded activities are now funded via the Joint Program in HEDLP. Direct technical support for the ICF Campaign is funded within the Facility Operations and Target Production subprogram.

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
Joint Program in High Energy Density Laboratory Plasmas	**0**	**3,152**	**3,147**

The Joint Program in HEDLP supports joint activities with the Office of Science required to steward the study of laboratory high energy density plasma physics within DOE. This includes funds to support external user programs at the University of Rochester. The NNSA portion of the joint program is funded via both the ICF Campaign and the Science Campaign. For FY 2009, the NNSA contribution is providing $3,147,000 in the ICF Campaign and $7,000,000 in the Science Campaign for a total of $10,147,000. More detail on this program is given at the end of the ICF section Joint Programs HEDLP.

Facility Operations and Target Production	**53,796**	**112,012**	**180,384**

Supports operations of ICF facilities, including NIF, OMEGA, and Z, in a safe, secure manner. During FY 2009, this subprogram will include the funds for the operation of the NIF, following the NIF Project completion in the second quarter of FY 2009. Also included are funding for ICF target development, production, and delivery by the target fabrication support contractor, facility data collection and archiving, routine facility maintenance and engineering support, support for facility-supplied diagnostics, and miscellaneous HQ support for the campaign, including external reviews. Activities of major emphasis in FY 2009 include continuation of target development activities for the NIC including qualification of the cryogenic ignition target production capability, fabrication of the first set of NIF Continuous Phase Plates and fabrication of User Optics for the first ignition campaign, and readiness for 1 MJ operations on NIF. The ICF Program will cease funding the Trident facility at LANL in FY 2009. This program also includes funding in FY 2008 for the Laboratory Laser Energetics (LLE) operations at the University of Rochester.

Inertial Fusion Technology	**26,412**	**29,426**	**0**

This Congressionally directed activity supports the development of high repetition rate laser and pulsed-power devices and associated technologies required to advance inertial confinement fusion as an energy technology. While ICF facilities have fusion energy applications, the development of inertial fusion as an energy source is not an NNSA mission.

NIF Assembly and Installation Program	**143,438**	**134,294**	**56,899**

This funding element supports the activities associated with integration, planning, assembly, installation, and activation of the NIF. The NIF Assembly and Installation Program also provides the staffing, training, and procedures for the NIF operations; work essential for the transition of the NIF from construction to experimental operations which began in FY 2008. The decrease in the FY 2009 request is consistent with approved project planning, which calls for completion of NIF by March 2009.

(dollars in thousands)

FY 2007	FY 2008	FY 2009

The NIF Line Item Project is 97 percent complete, and the NIF Project (the combined NIF Line Item and NIF Assembly and Installation Program) is over 94 percent complete. The remaining effort on the project (FY 2008 – mid-FY 2009) focuses on assembly, installation, and activation of the remaining beamlines, with all 192 beamlines installed and activated in FY 2009

The majority of work remaining to complete the NIF involves the assembly, installation, and activation of LRUs. The LRUs are the modular assemblies containing the optics that are inserted into the NIF beamlines. Rigorous production planning and coordination will continue to ensure that a high-level of production and installation is maintained as planned through the end of the project.

High-Energy Petawatt Laser Development	**2,213**	**0**	**0**

This subprogram supports activities related to petawatt lasers. OMEGA EP will be completed in FY 2008 with final funding provided in FY 2007, consistent with the current approved baseline.

NIF Construction	**111,419**	**9,945**	**0**

96-D-111, National Ignition Facility, LLNL. Supports construction of the NIF per the baseline schedule approved in June 2005. FY 2008 was the last year of NIF Construction funding. There is no funding requested for FY 2009.

Total, Inertial Confinement Fusion Ignition and High Yield Campaign	**489,706**	**470,206**	**421,242**

Explanation of Funding Changes

	FY 2009 vs. FY 2008 ($000)
Ignition	
Represents continuation of existing program.	+615
NIF Diagnostics, Cryogenics, and Experimental Support	
Represents continuation of existing program.	+141
Pulsed Power Inertial Confinement Fusion	
The ICF Campaign will focus on demonstrating ignition at NIF. Development of advanced fusion capabilities will be slowed to accommodate this prioritization.	-1,321
Joint Program in High Energy Density Laboratory Plasmas	
FY 2009 request continues joint program established in FY 2008.	-5
Facility Operations and Target Production	
The funding increase is needed for preparatory work required for execution of the first ignition experiment in 2010 in accordance with baseline planning. During FY 2009, the bulk of the increase in funding is required to transition NIF to routine operations following NIF Project completion at the end of the second quarter. The major activities include sustaining engineering support for operation, maintenance, and management of the infrastructure and facility, and procurement of operating inventory optics. The increase also reflects movement into the ICF account of all Readiness in Technical Base and Facilities (RTBF) funds for Z. Smaller increases in funding reflect partial operation of the OMEGA EP facility and the development of innovative methods for production of ignition capsules.	+68,372
Inertial Fusion Technology	
Although the FY 2008 President's Request did not include funding for Inertial Fusion Technology, the program is a recurring add-on by Congress and was funded at $29,426,000 in the FY 2008 Consolidated Appropriations Act (P.L. 110-161). Funding is not requested for this program in FY 2009.	-29,426
NIF Assembly and Installation Program	
Decrease is in accordance with established project baseline planning. Requested budget supports assembly, installation, testing and commissioning required for project completion. FY 2009 is the last year of NIF Assembly and Installation Program funding.	-77,395

	FY 2009 vs. FY 2008 ($000)
NIF Construction	
Funding decrease reflects conclusion of line-item funded work as the project nears completion. FY 2008 was the last year of NIF Construction funding.	-9,945
Total Funding Change, Inertial Confinement Fusion Ignition and High Yield Campaign	**-48,964**

Capital Operating Expenses and Construction Summary

Capital Operating Expenses[a]

(dollars in thousands)

	FY 2006	FY 2007	FY 2008
General Plant Projects	0	0	0
Capital Equipment	5,081	5,233	5,390
Total, Capital Operating Expenses	**5,081**	**5,233**	**5,390**

Outyear Capital Operating Expenses

(dollars in thousands)

	FY 2009	FY 2010	FY 2011	FY 2012
General Plant Projects	0	0	0	0
Capital Equipment	5,552	5,719	5,891	6,068
Total, Capital Operating Expenses	**5,552**	**5,719**	**5,891**	**6,068**

Construction Projects

(dollars in thousands)

	Total Estimated Cost (TEC)	Prior Year Appropriations	FY 2007	FY 2008	FY 2009	Unappro-priated Balance
96-D-111, National Ignition Facility	2,094,897	1,973,339	111,419	9,945	0	0
Total, Construction			**111,419**	**9,945**	**0**	

[a] Since 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. FY 2008 and FY 2009 funding shown reflects estimates based on actual FY 2007 obligations.

Basic and Applied R&D Coordination
Joint Program in High Energy Density Laboratory Plasmas

Description

In 2007, the National Nuclear Security Administration and the DOE Office of Science established a joint program in high energy density laboratory plasmas (HEDLP), which is a major sub-area within the discipline of high energy density physics (HEDP). The field of HEDP originated in the nuclear weapons program and is an essential element of stockpile stewardship. The purpose of the joint program is to steward effectively HEDLP within the DOE, while maintaining the interdisciplinary nature of this area of science. HEDP is best advanced within the context of current agency missions. This program will advance the basic science that underlies nuclear weapons and inertial fusion energy; it will also strengthen ties with academia, grow critical skills, and train students. The program was formed out of existing programs, including the Stockpile Stewardship Academic Alliance (SSAA) and the National Laser Users Facility (NLUF) program. Funding for the program is shown below.

(dollars in thousands)

Budget Category	FY 2007[a]	FY 2008	FY 2009
Office of Science- Office of Fusion Energy Sciences	**15,459**	**15,942**	**24,636**
NNSA- Office of Defense Programs	**10,000**	**12,295**	**10,147**
ICF Campaign- Joint Program in High Energy Density Laboratory Plasmas	7,000	3,152	3,147
Science Campaign- Joint Program in HEDLP	3,000	9,143	7,000[b]
TOTAL	**25,459**	**28,237**	**34,783**

[a] The FY 2007 amounts for HEDLP-related activities are included for reference. In addition, the HEDLP-related activities funded by the ICF Campaign in FY 2007 were included in the University Grants/Other ICF Support sub-program.
[b] The estimated share of Stockpile Stewardship Academic Alliance (SSAA) program for HEDLP in the Science Campaign is $7,000,000 in FY 2009.

Program Overview

The Joint Program in HEDLP funds joint activities with the Office of Science required to steward the study of laboratory high energy density plasma physics within DOE. This includes individual investigators (grants) and research center activities (cooperative agreements) in high energy density physics funded under the NNSA Stewardship Science Academic Alliances Program. It also includes user programs such as the National Laser User Facility Program at the University of Rochester. Within the Office of Science's Fusion Energy Sciences (FES) Program, the joint program includes work in fast ignition, heavy ion fusion, high Mach number plasma jets, magneto-inertial fusion and dense plasmas in high magnetic fields. In FY 2009, the joint program will issue a solicitation that supports academic research in HEDLP. The scientific program will evolve with inputs from the scientific community through advisory committee, workshops, conferences, etc. Research grants will be awarded through competitive peer reviews, taking into account other factors including balance and program priorities. Funds for the NNSA part of the joint program are provided by the ICF Campaign at $3,147,000 and by the Science Campaign at $7,000,000. The Office of Science provides $24,636,000 for a total funding of $34,783,000. The joint program was established in 2007 and separately identified in the budget in FY 2008. Further details are contained in the budget narrative for the Office of Fusion Energy Sciences within the Office of Science.

Advanced Simulation and Computing Campaign

Funding Schedule by Activity

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
Advanced Simulation and Computing Campaign			
Integrated Codes	163,219	147,552	143,997
Physics and Engineering Models	62,641	62,153	57,099
Verification and Validation	48,540	47,774	46,212
Computational Systems and Software Environment	198,337	167,756	171,722
Facility Operations and User Support	138,516	149,302	142,712
Total, Advanced Simulation and Computing Campaign	**611,253**	**574,537**	**561,742**

Outyear Funding Schedule

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
Advanced Simulation and Computing Campaign				
Integrated Codes	129,808	122,608	121,126	117,553
Physics and Engineering Models	48,442	51,086	51,785	53,511
Verification and Validation	40,777	37,960	37,012	36,483
Computational Systems and Software Environment	165,587	158,927	161,123	164,309
Facility Operations and User Support	141,759	140,227	143,359	148,789
Total, Advanced Simulation and Computing Campaign	**526,373**	**510,808**	**514,405**	**520,645**

Description

The goal of the Advanced Simulation and Computing (ASC) Campaign is to provide leading edge, high-end simulation capabilities to meet weapons assessment and certification requirements including weapon codes, weapons science, computing platforms, and supporting infrastructure. The ASC Campaign serves as the computational surrogate for nuclear testing to determine weapons effects.

The major management challenge for the ASC program is to focus and apply resources effectively and efficiently while maintaining scientific creativity and nurturing innovation. The ASC program office has done extensive planning to ensure that the long-term goals and directions are widely understood and accepted, and it is actively involved in the management of the overall program. The planning activity has manifested itself in several published documents including the ASC Strategy, which articulates principles and high-level goals that guide the program's directions and emphases for the next ten years, the ASC Business Model, which emphasizes the need for advocacy, transparency, integration and effective federal management, the ASC Roadmap, which lays out the goals and schedules for major deliverables to ensure the scientific integrity of the program, and the Platform Strategy, which describes the principles and directions for the future use and acquisition of high-end computer systems.

As the computational surrogate for nuclear testing, ASC simulations are central to our national security. Our ability to model the extraordinary complexity of nuclear weapons systems is essential to establish confidence in the performance of our aging stockpile. The ASC tools enable comprehensive understanding of the entire weapons lifecycle from design to safe processes for dismantlement. ASC simulations play an essential role in simulating device performance to ensure that systems in the stockpile meet all specifications in the "stockpile-to-target sequence." Only through ASC simulations

can the National Nuclear Security Administration (NNSA) determine the effects of changes to current systems as well as calculate confidence levels of future untested systems.

The ASC tools are also used to address areas of national security beyond the U.S. nuclear stockpile. Through coordination with other government agencies, the ASC tools play an important role in supporting nonproliferation, emergency response, and attribution activities. They have been used in the field to identify and characterize special nuclear material (SNM) threat materials and devices. There is a growing effort to enhance the capabilities of these tools -- for example, an enhanced capability to allow the identification of a perpetrator or supporting state through forensic analysis of post-explosion radio nuclei debris. The ASC simulation capabilities have been used by Department of Homeland Security (DHS) to assess various mitigation strategies, and the results have been published in peer-reviewed journals.

Simulation is basic to the performance of a transformed nuclear weapons complex. Any future transformation of the stockpile or the Complex will rely heavily on ASC simulation codes and computational infrastructure.

Federal Leadership of ASC

There have been significant strides during the past three years to sharpen the engagement of Headquarters (HQ) management in the ASC Campaign.

- Through implementation of the new Business Model, headquarters used its increased visibility into laboratory projects to provide programmatic guidance.

- Informed by the assessments and recommendations of the ASC Predictive Science Panel (a group of subject matter experts from industry, laboratories and academia), headquarters sets high-level technical directions.

- Phase two of the siting capability study was initiated to evaluate cost-effective strategies for siting future NNSA capability platforms.

- The ASC Roadmap for national program was established and published.

The ASC contributes to Governmental Performance and Results Act (GPRA) Unit Program Goal 2.1.30.00 by providing leading edge, high-end simulation capabilities through investments made in five subprograms that support activities in the areas of weapon codes, weapon science, computational infrastructure, and computing center operations.

Major FY 2007 Achievements

Adoption of the ASC Modern Codes

- Developed a new energy-conserving algorithm to allow simulations of kinetic plasma at two to three orders of magnitude higher density than previously possible. For weapon System-Generated Electromagnetic Pulse (SGEMP) analyses, this enables simulations to model the entire range of air pressure from vacuum to one atmosphere.
- Recently discovered W76 alternate materials simulation needs are being addressed using ASC codes and are being run on Roadrunner base capacity system. This demonstrates the critical ability of the

ASC program codes and computing resources to respond to unanticipated major national security issues.
- A crucial physics model necessary for the simulation of nuclear weapons has been implemented in a modern physics code.

Reduced Reliance on Calibration
- Delivered capability to integrate electrical simulation capabilities in Radiation Analysis, Modeling and Simulation for Electrical Systems (RAMSES) with dislocation dynamics capabilities to simulate the effects of transient neutrons on electrical circuits as part of the predictive simulation capability to be used as the qualification alternative to testing of weapon subsystems in the Sandia Pulsed Reactor.
- Successfully incorporated solution verification approaches with Uncertainty Quantification and probabilistic design methods. This tight integration of capabilities demonstrated significant cost and accuracy improvements in computing uncertainties and optimization for a coupled electromechanical analysis application.
- Performed a model-based qualification of Margins and Uncertainties (QMU) study on electrical response for the B83 and W87 firing sets in support of the annual Stockpile Review Conference and the Annual Assessment Report.
- Mechanistic material damage model implemented in ASC codes has reduced calibration by providing increased scientific basis to damage model. Initial investigations dealing with energy balance is being conducted in FY 2007.
- Contributed to Lawrence Livermore National Laboratory (LLNL's) ability to understand materials aging processes through performance analysis and optimization of several key applications, including participation on the 2006 Gordon Bell Prize winning Qbox team.

ASC Impact on Significant Finding Investigation (SFI) Closure
- W76 SFI closed using ASC codes and Los Alamos National Laboratory (LANL) computing resources
- W88 SFI closed using ASC codes and LANL computing resources

Code Efficiency
- Improved code release process to incorporate automatic verification and validation testing. This provides a usable code to the designer community in a shorter time frame. This will eventually shorten the code release and acceptance cycle by one year (factor of two over current).
- Performed theoretical development work on a high-fidelity transport algorithm that will drastically increase efficiency of weapons simulations.

Major Outyear Priorities and Assumptions
The outyear projections for Advanced Simulation and Computing Campaign (ASC Campaign) total $2,072,231,000 for FY 2010 through FY 2013. By 2013, ASC seeks to achieve or have made significant progress toward several major accomplishments and support the transition toward Complex Transformation. Planned accomplishments include:
- Replacement of calibrated approximations with science-based representation of several physical phenomena;
- Improved understanding of detailed interactions leading to boost;
- Production use of a full-systems code from detonation to secondary yield with known confidence;
- Demonstration of applicability of ASC codes to attribution, secure transportation, and threat reduction;

- Use of ASC codes for assessment and certification to establish baselines, perform excursions from baselines and final certification for the W76-0, W76-1 LEP, W78, W88, W88 MAR, B61 and W80;
- Application of ASC code capability to plant operational safety and manufacturing issues;
- Application of peta-scale computing with ASC platforms to the weapon stockpile workload;
- Certification using modern ASC codes; and
- Use of tri-lab hardware and software initiatives to address capacity computing requirements including Tri-laboratory Linux Capacity Cluster (TLCC) and Tri-lab Productivity On Demand (TriPOD).

As part of Complex Transformation, ASC will move toward a reduced computing footprint that maintains capability computing at two sites and ties the three Defense Program (DP) laboratories together with a common user environment.

Program Assessment Rating Tool (PART)

The Department implemented a tool to evaluate selected programs. The PART was developed by the Office of Management and Budget (OMB) to provide a standardized way to assess the effectiveness of the Federal Government's portfolio of programs. The structured framework of the PART provides a means through which programs can assess their activities differently than through traditional reviews. The ASC Campaign has incorporated feedback from the OMB into the FY 2009 Budget Request, and has taken or will take the necessary steps to continue to improve performance.

The results of the OMB review are reflected in the FY 2009 Budget Request. The OMB gave the ASC Campaign scores of 100 percent on the Purpose and Design, Strategic Planning, and Program Management Sections, and 74 percent on the Results Section. Overall, the OMB rated the ASC Campaign 87 percent, its highest category of "Effective." The OMB found that the program has a clear and necessary purpose and there is not any other viable alternative in terms of another government of private entity offering a comparable purpose. Based on prior success, the program has established new goals and measures consistent with its reengineering with a major focus on the critical weapons-related work. In response to the OMB findings, the NNSA is maximizing its resources such that redundancy does not occur in the three NNSA laboratories. The NNSA is also continuing to improve the responsiveness of the Nuclear Weapons Complex infrastructure by coordinating program activity with the Nuclear Weapons Complex Transformation Strategy Record of Decision and by integrating program requirements into the new Defense Programs National Level Work Breakdown Structure.

Annual Performance Results and Targets

(R = Results; T = Target)

Performance Indicators	FY 2005 Results	FY 2006 Results	FY 2007 Results	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Endpoint Target
Strategic Goal 2.1 (Nuclear Deterrent) GPRA Unit Program Goal 2.1.30.00, Advanced Simulation and Computing Campaign										
Adoption of ASC Modern Codes: The cumulative percentage of simulation runs that utilize modern ASC-developed codes on ASC computing platforms as measured against the total of legacy and ASC codes used for stockpile stewardship activities (Long-term Outcome)	N/A	R: 50%	R: 63%	T: 72%	T: 80%	T: 85%	T: 90%	T: 95%	T: 100%	By 2013, ASC-developed modern codes are used for all simulations on ASC platforms. Adoption of Modern ASC Codes will enable a responsive simulation capability for the nuclear weapons complex. This measure is meant to show how quickly ASC codes are being adopted by the user community in place of legacy codes.
Reduced Reliance on Calibration: The cumulative percentage reduction in the use of calibration "knobs" to successfully simulate nuclear weapons performance (Long-term Outcome)	N/A	R: 2%	R: 8%	T: 16%	T: 25%	T: 33%	T: 41%	T: 50%	T: 58%	By 2018, the four major calibration knobs 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.
ASC Impact on SFI Closure: The cumulative percentage of nuclear weapon Significant Finding Investigations (SFIs) resolved through the use of modern (non-legacy) ASC codes, measured against all codes used for SFI resolution (Long-term Outcome)	N/A	R: 10%	R: 25%	T: 37%	T: 50%	T: 62%	T: 75%	T: 87%	T: 100%	By 2013, ASC codes will be the principal tools for resolution of all SFIs. This demonstrates how valuable the ASC tools are for meeting the needs of the weapon designer's analysts by documenting the impact on closing SFIs.
Code Efficiency: The cumulative percentage of simulation turnaround time reduced while using modern ASC codes (Efficiency)	N/A	R: 6%	R: 7%	T: 13%	T: 26%	T: 32%	T: 39%	T: 45%	T: 50%	By 2013, achieve a 50% reduction in turnaround time, as measured by a series of benchmark calculations, for the most heavily used ASC codes. To show code efficiency by demonstrating that simulation time decreases as the ASC codes mature.

NOTE: Performance measures were revised in 2007 to be consistent with new program roadmap.

Detailed Justification

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
Integrated Codes (IC)	**163,219**	**147,552**	**143,997**

This subprogram involves lab physics, engineering, and specialized code projects that develop and improve the weapons simulation tools. This subprogram primarily addresses the improvement of weapons system simulations, to predict with reduced uncertainties, the behavior of devices in the stockpile. It also supports calculations that use our core capabilities to address a broad range of nuclear security applications (i.e. secure transportation, nuclear forensics, etc.). The products of this subprogram are the large-scale integrated simulation codes that are needed for Stockpile Stewardship Program (SSP) maintenance, the LEP, addressing and closing Significant Findings, and a host of related requirements, including supporting the dismantlement processes and in forming future modifications. Specifics include the maintenance of the legacy codes; continued research into engineering code applications and manufacturing process codes; investigation and development of future non-nuclear replacement components; algorithms, computational methods and software architectures; advancement of key basic research initiatives; and explorations into emerging code technologies and methodologies. This subprogram includes university partnerships that foster continued collaborations such as the ASC Alliances and Computational Science Graduate Fellowships. This subprogram's functional and performance requirements are established by designers, analysts, code developers and the requirements of the QMU certification methodology. It also relies upon the Physics and Engineering Models subprogram for the development of new models to be implemented into the integrated codes. The subprogram also engages the Verification and Validation (V&V) subprogram in assessing confidence levels in the outputs from the codes.

The FY 2009 activities include the following: developing coupled multi-physics models for device simulation, based on fundamental understanding and realistic, scientifically-based representation of device behavior, with a reduced reliance on calibration to underground test data; producing integrated physics models with more accurate numerical methods for treating complex geometries in 2-D and 3-D computer codes; developing the capability to simulate effects of replacement components as well as to analyze various Stockpile-to-Target Sequence scenarios and modifications to ensure nuclear surety; accelerating code performance through more powerful numerical algorithms and improved approximations; maintaining interactions with academic colleagues in computer science, computational mathematics, and engineering; conducting basic research relevant to the ASC Campaign in computer science, scientific computing, and computational mathematics; and, continuing support of the Computational Science Graduate Fellowships.

Physics and Engineering Models (PEM)	**62,641**	**62,153**	**57,099**

This subprogram develops microscopic and macroscopic models of physics and material properties, improved numerical approximations of transport for particles and x-rays, and representations of the behavior of other critical phenomena. This subprogram is charged with the development, initial validation, and the incorporation of new models into the Integrated Codes. Therefore, it is essential that there be a close interdependence between the IC and PEM subprograms. There is also extensive integration with the experimental programs of the SSP, mostly funded and led through Science Campaign as both Campaigns move toward a predictive capability that will allow the U.S. to maintain our moratorium on underground testing. Functional requirements for this subprogram are established by designers and analysts.

The FY 2009 activities include the following: Develop and implement Equation of State and constitutive models for materials important in nuclear devices, improved understanding of phase diagrams and the dynamic response of relevant materials. Continue physics-based modeling of the altered properties of plutonium as it ages, partly as a result of self-irradiation. Explore fundamental chemistry models of high explosives, including thermal, mechanical, and constitutive properties of unreacted explosives and explosive products, decomposition kinetics, detonation performance, and response in abnormal environments. Improve representation of corrosion, polymer degradation, and thermal-mechanical fatigue of weapons electronics. Develop more representative models of melting and decomposition of foams and polymers in safety-critical components. Support of the Stockpile to Target Sequence requirements by providing better models of the behavior of microelectronic and photonic materials under hostile environments.

The ASC program invests in collaborations with Russian experts in modeling and simulation at the Russian Federal Institutes and the Russian Academy of Sciences on technical projects focused on science-based simulations. These collaborations enhance work at the national laboratories by leveraging international expertise in areas such as material science, computer science and computational materials.

Verification and Validation (V&V)	**48,540**	**47,774**	**46,212**

This national subprogram element provides a rigorous, defensible, scientifically based measure of confidence and progress in weapons simulations. The V&V program applies systematic measurement, documentation, and demonstration of the predictive capability of the codes and the underlying models in various operational states and functional regimes. V&V is developing and implementing Uncertainty Quantification (UQ) methodologies as part of the foundation to the QMU process of weapons assessment and certification. V&V also drives software engineering practices to improve the quality, robustness, reliability, and maintainability of the codes vital in evaluating and addressing the unique complexities of the stockpile performance.

In FY 2009, V&V will focus UQ assessments to include: validation assessment of penetration mechanics for surety applications, integral V&V assessment of damage models, Engineering Validation Toolbox Tri-Laboratory Release, and Catalog of Major Adjustable Parameters in Weapons Physics Simulations; expansion of the Primary Metric Project (PMP) test suites to include more relevant Nevada Test Site (NTS) events, a Boost Validation Suite (BVS), and development of first events of the Secondary Calculational Assessment Methodology Project (SCAMP). It will also be the first year for implementation of the V&V Strategy recommendations.

Computational Systems and Software Environment (CSSE)	**198,337**	**167,756**	**171,722**

The mission of this national subprogram is to build integrated, balanced and scalable computational capabilities to meet the predictive simulation requirements of the NNSA. It strives to provide users of ASC computing resources a stable and seamless computing environment on all ASC-deployed platforms, which include capability and capacity systems. The complex and diverse demands of the ASC performance and analysis codes and the scale of the required simulations require the ASC Campaign to be far in advance of the mainstream high-performance computing community. To achieve its predictive capability goals, the ASC Campaign must continue to invest in and consequently

influence the evolution of computational environments. CSSE must provide the stability that ensures productive system use and protects the large ASC Campaign investment in its simulation codes.

A balanced and stable computational infrastructure is a key enabling technology for the ASC Campaign in its endeavor to deliver the required computing capabilities to its customers. Along with the powerful capability, capacity and advanced systems that the campaign will field, the supporting software infrastructure that CSSE is responsible for deploying on these platforms includes many critical components, from system software and tools, to Input/Output (I/O), storage and networking, to pre- and post-processing visualization and data analysis tools. Achieving this deployment objective requires sustained investment in applied research and development to create technologies that address the unique ASC Campaign mission-driven need for scalability, parallelism, performance, and reliability.

In the next decade, both the enhancement of future predictive capabilities and the achievement of DSW simulation deliverables demand ever more powerful and sophisticated simulation environments. The immediate focus areas include moving toward a more standard user environment and improving its usability, deploying more capacity compute platforms, planning for and developing petascale computing capability, and overall making strategic investments so that the ASC Campaign can continue to meet the program requirements at an acceptable cost. The CSSE's long-term efforts in applied research and development will support the new ASC Campaign Roadmap in providing to the nuclear weapon complex a seamless computing environment in 2013 and exascale computing capabilities in 2018.

The FY 2009 activities include the following: deploy and initiate operation of the Sequoia Initial Delivery (ID) system at LLNL to perform UQ calculations and reduce phenomenology in ASC codes; operate the multi-teraflops capacity computing scalable units to meet growing demands especially in the area of modern (QMU-based) weapons certification and assessment; create a common, usable, and robust application-development and execution environment for ASC-scale applications and platforms to meet the computational needs of weapons scientists and engineers; produce an end-to-end, high-performance I/O, networking-and-storage archive infrastructure encompassing ASC Campaign platforms and operating systems, large-scale simulations, and data-exploration capabilities to enable efficient ASC-scale computational analysis; provide a reliable, available, and secure environment for distance computing, through system monitoring and analysis, modeling and simulation, and technology infusion; develop and deploy high-performance tools and technologies to support visual and interactive exploration of massive, complex data; effective data management, extraction, delivery, and archiving, as well as an efficient remote or collaborative scientific data exploitation; develop and deploy scalable data manipulation and rendering systems that leverage inexpensive, high performance commodity graphics hardware; deploy and provide system management of the ASC Campaign computers and their necessary networks and archival storage systems; and, stimulate research and development efforts through advanced architectures that explore alternative computer designs, promising dramatic improvements in performance, scalability, reliability, packaging, and cost.

Facility Operations and User Support **138,516** **149,302** **142,712**

This subprogram provides necessary physical facility and operational support for reliable production computing and storage environments as well as providing users with a suite of services enabling effective use of ASC Tri-Laboratory computing resources. The scope of the facility operations

FY 2007	FY 2008	FY 2009

includes planning, integration and deployment, continuing product support, software license and maintenance fees, procurement of operational equipment and media, quality and reliability activities and collaborations. The designers, analysts and code developers of the nuclear weapon complex provide functional and operational computational requirements. Facility Operations also covers physical space, power and other utility infrastructure, and Local Area Network/Wide Area Networking for local and remote access, as well as requisite system administration, cyber-security and operations services for ongoing support and addressing system problems.

The scope of the User Support function includes planning, development, integration and deployment, continuing product support, and quality and reliability activities collaborations. Projects and technologies include computer center hotline and help-desk services, account management, web-based system documentation, system status information tools, user training, trouble-ticketing systems, and application analyst support.

The FY 2009 activities include the following: maintain continuous and reliable operation and support of production computing systems and all required infrastructure to operate these systems on a 24-hour a day, 7-day a week basis, with an emphasis on providing efficient production quality stable systems. Ensure that the physical plant has sufficient resources, such as space, power, and cooling, to support future computing systems. Provide the authentication and authorization services used by applications for the purposes of remote access and data movement across ASC-related locations. Develop and maintain a wide-area infrastructure (e.g., links and services) that enables distant users to operate on remote computing resources as if they were local to the extent possible. Enable remote access to ASC applications, data, and computing resources, to support computational needs at the plants. Operate laboratory ASC computers and support integration of new systems. Provide analysis and software environment development and support for ASC laboratory computers. Provide user services and helpdesks for ASC laboratory computers.

Total, Advanced Simulation and Computing Campaign	**611,253**	**574,537**	**561,742**

Explanation of Funding Changes

	FY 2009 vs. FY 2008 ($000)
Integrated Codes	
The decrease in Integrated Codes shows the consolidation of effort around the code projects consistent with the ASC Code Strategy.	-3,555
Physics and Engineering Models	
The decrease in Physics and Engineering Models indicates a focusing of model development that maintains the program on target with the ASC Roadmap toward a predictive simulation capability. Limited replacement of nuclear-test calibrated models with more predictive capabilities will introduce additional risk by constraining the design space that can be credibly analyzed for weapons performance.	-5,054
Verification and Validation (V&V)	
The decrease maintains this sub-program in accordance with the ASC V&V Strategy. The level of methodology development for verification and validation of complex multi-scale, multi-physics weapons codes at the labs and the extent to which the ASC Campaign can collaborate with strategic academic partners will be reduced.	-1,562
Computational Systems and Software Environment	
The increase reflects the year-to-year fluctuations in schedules and milestone payments among capability, capacity, and advanced system procurements.	+3,966
Facility Operations and User Support	
This decrease reflects the consolidation of capability computing at two sites, rather than at three.	-6,590
Total Funding Change, Advanced Simulation and Computing Campaign	**-12,795**

Capital Operating Expenses and Construction Summary

Capital Operating Expenses[a]

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
General Plant Projects	0	0	0
Captial Equipment	51,849	53,404	55,006
Total, Capital Equipment	**51,849**	**53,404**	**55,006**

Outyear Capital Operating Expenses

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
General Plant Projects	0	0	0	0
Captial Equipment	56,656	58,356	60,107	61,910
Total, Capital Equipment	**56,656**	**58,356**	**60,107**	**61,910**

[a] Since 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. FY 2008 and FY 2009 funding shown reflects estimates based on actual FY 2007 obligations.

Pit Manufacturing and Certification Campaign

Funding Schedule by Activity

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
Pit Manufacturing and Certification Campaign			
Pit Manufacturing	152,709	137,323	0
Pit Certification	55,536	37,273	0
Pit Manufacturing Capability	34,147	39,235	0
Total, Pit Manufacturing and Certification Campaign	**242,392**	**213,831**	**0**

Budget Structure Changes

All Pit Manufacturing and Certification Campaign activities have been realigned to the Directed Stockpile Work (DSW) program and Science Campaign. With the successful production of the first replacement plutonium pit for a nuclear weapon in 18 years, the Pit Manufacturing and Certification Campaign is completed. Therefore, Pit Manufacturing and Pit Manufacturing Capability will move to the DSW program with other production manufacturing activities. Pit Certification will be moved to the Science Campaign.

The total amount of $198,829,000 that was planned for Pit Manufacturing and Pit Manufacturing Capability activities in FY 2009 will be transferred to the DSW Stockpile Services subprogram: $145,269,000 to the Pit Manufacturing subprogram and $53,560,000 to the Pit Manufacturing Capability subprogram.

The total amount of $42,734,000 that was planned for Pit Certification activities in FY 2009 will be transferred to the Science Campaign. A total of $23,734,000 will be transferred to the new Dynamic Plutonium Experiments (DPE) used to support the conduct of DPE. A total of $9,000,000 will be transferred to the Science Campaign, Primary Assessments and Technology subprogram, to be utilized to continue efforts to reduce uncertainties in the W88 certification. A total of $10,000,000 of Pit Certification funds will be used to support Advanced Certification created in the Science Campaign in the FY 2008 Consolidated Appropriations Act (P.L. 110-161).

Detailed Justification

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
Pit Manufacturing	**152,709**	**137,323**	**0**

The Pit Manufacturing subprogram objective is to manufacture pits in limited quantities, establish an interim pit manufacturing capability at existing LANL facilities, and, prior to FY 2008, plan for long term pit manufacturing support.

Pit Certification	**55,536**	**37,273**	**0**

The Pit Certification subprogram objective is to confirm the nuclear performance of a W88 warhead with a LANL manufactured pit by the end of FY 2007 and to establish certification processes for future replacement pits.

Pit Manufacturing Capability	**34,147**	**39,235**	**0**

The Pit Manufacturing Capability subprogram objective is to establish the capability to manufacture replacement pits other than the W88 pit, improve manufacturing processes used to manufacture all pit types, and develop the processes and equipment necessary to manufacture the RRW pit. The processes and technologies developed support NNSA goals that include producing less waste, lowering the radiation dose to facility operators, and reducing the unit costs of manufacturing pits.

Total, Pit Manufacturing and Certification Campaign	**242,392**	**213,831**	**0**

Explanation of Funding Changes

	FY 2009 vs. FY 2008 ($000)
Pit Manufacturing	
The Pit Manufacturing subprogram will be moving from the Pit Manufacturing and Certification Campaign to Directed Stockpile Work (DSW). Defense Programs will merge the functions currently in the Pit Manufacturing subprogram back into the DSW program in FY 2009. A new subprogram under DSW Stockpile Services will be created to be named Pit Manufacturing.	-137,323
Pit Certification	
Defense Programs will merge the functions currently in Pit Certification into the Science Campaign in FY 2009. Pit Certification planning and execution activities will be transferred into the Primary Assessment Technology subprogram. In addition, two new subprograms will be created entitled Dynamic Plutonium Experiments (DPE) and Advanced Certification.	-37,273
Pit Manufacturing Capability	
The Pit Manufacturing Capability subprogram will be moved from the Pit Manufacturing and Certification Campaign to DSW. Defense Programs will merge the functions currently in the Pit Manufacturing Capability into the DSW program under DSW Stockpile Services in FY 2009.	-39,235
Total Funding Change, Pit Manufacturing and Certification Campaign	**-213,831**

Readiness Campaign

Funding Schedule by Activity

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
Readiness Campaign			
Stockpile Readiness	21,964	18,562	28,731
High Explosives and Weapon Operations	19,256	9,647	8,927
Nonnuclear Readiness	31,139	25,103	40,165
Tritium Readiness	77,745	71,831	82,265
Advanced Design and Production Technologies	51,609	32,945	22,949
Total, Readiness Campaign	**201,713**	**158,088**	**183,037**

Outyear Funding Schedule

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
Readiness Campaign				
Stockpile Readiness	30,767	18,829	13,757	27,828
High Explosives and Weapon Operations	14,891	8,229	2,918	10,695
Nonnuclear Readiness	36,638	31,915	18,024	24,480
Tritium Readiness	64,085	78,990	116,638	77,447
Advanced Design and Production Technologies	23,622	23,176	9,793	23,845
Total, Readiness Campaign	**170,003**	**161,139**	**161,130**	**164,295**

Description

The goal of the Readiness Campaign is to identify, develop, and deliver new or enhanced processes, technologies, and capabilities to meet the current and future nuclear needs of the stockpile and support the transformation of the nuclear weapons complex (Complex) into a more agile and more responsive enterprise with greater design to production integration, shorter cycle times, and lower production and operating costs.

A substantial proportion of Readiness Campaign projects in FY 2009 support critical needs of the current stockpile and the transition from Life Extension Program (LEP) first production units to initial production runs and provide technology solutions for base workload capability and future Complex requirements. Projects funded through the Readiness Campaign include the development of testing capability for neutron generators; development of production capability for weapon components containing uranium materials and associated subassemblies; development of production capability for high explosive components and detonators; and the technologies to qualify weapon components for reuse; and production of arming, firing, and fuzing components and similar electrical, mechanical, and electronic components. Key drivers are the elimination of problematic materials, reduction of waste stream costs, improved worker safety, improvement in assembly and disassembly processes, and improved business and product development/deployment processes.

The Complex continues to assure the safety, security, and reliability of the existing stockpile as it progresses towards a newly responsive nuclear weapons infrastructure as called for in the 2001 Nuclear Posture Review (NPR), and described in the vision for Complex Transformation. The Readiness Campaign is one of the key providers of design-to-manufacturing and technological readiness capabilities for this transformation. As the Readiness Campaign develops and deploys technology

capabilities to meet urgent needs for the Directed Stockpile Work (DSW) program and enabling significant operational improvement in Readiness in Technical Base and Facilities (RTBF), gains are often made in cycle time reduction, improved in-process measurements, and improved manufacturing techniques and business practices. Insertion of state-of-the-art equipment designs combined with advanced applications enhance the Complex manufacturing modular capability to quickly modify and enhance products, tools and processes. The Readiness Campaign closely integrates planning, and project selection prioritization, with the senior program management of DSW, RTBF, and other programs such as the Engineering and Advanced Simulation and Computing (ASC) Campaigns. In FY 2009, the Campaign's investment continues to include multi-site projects that provide technology-based capabilities across the weapons complex (multi-site, multi-system) that have a validated plan to achieve measurable cost savings, or a permanent reduction in fixed operating costs. This focus supports the transformation strategies of creating a fully integrated and interdependent Complex that is modernized and cost effective.

The Readiness Campaign enables its customer base with technology that contributes to faster implementation of new requirements, reduction in cycle times, less waste, leaner manufacturing (fewer components or steps), and a more capable workforce.

The Readiness Campaign performance targets reflect its goal to deliver design-to-manufacturing capabilities to ensure weapon safety and reliability and to modernize the manufacturing complex to reduce cycle times and improve efficiency. The Readiness Campaign's second performance measure, as noted in the Annual Performance Results and Target chart, is indicative of the focus on higher efficiency by focusing on cycle time reduction.

Within the Readiness Campaign, there are five subprograms: Stockpile Readiness, High Explosives and Weapon Operations (HEWO), Nonnuclear Readiness, Tritium Readiness, and Advanced Design and Production Technologies, each of which makes unique contributions to the Government Performance and Reporting Act (GPRA) Unit Program Goal 2.1.32.00, the stockpile, and the Nuclear Weapons Complex. Collectively, these five subprograms encompass the key capabilities needed to design, manufacture, and dismantle nuclear weapons and to sustain the infrastructure needed to do so over time. The Readiness Campaign subprograms address manufacture and disposition of weapon components containing fissile material; production of nonnuclear components of nuclear weapons; development of high explosives; assuring tritium supply; weapon assembly and disassembly; and the design and manufacturing capabilities needed to support an enduring stockpile.

Stockpile Readiness develops and deploys future manufacturing capabilities (materials, equipment, people, and processes) for production of components containing special materials, including the establishment of special processes; replacement of sunset technologies with advanced capabilities providing substantial yield, lower operating cost, and other potential benefits; and the deployment of component qualification and acceptance techniques.

High Explosives and Weapon Operations develops, enhances and deploys capabilities for the production of high explosive and other energetic components, requalification of weapons components for reuse, and helps insure that the assembly and disassembly of war reserve nuclear weapons operations are fully ready to support mission requirements.

Nonnuclear Readiness develops and deploys the electrical, electronic, electro-mechanical, mechanical and other nonnuclear capabilities and processes that support design through the manufacture and

dismantlement of nuclear weapons, test assemblies, and development lots, including inspection and evaluation technologies and equipment.

Tritium Readiness reestablishes and demonstrates a new, assured supply of tritium to support the nuclear weapons stockpile.

Advanced Design and Production Technologies (ADAPT) selects, matures, and may carry through deployment high priority projects that have the documented and validated potential to greatly streamline future development and/or reduce significantly operational cost of doing business, reduce operational footprint, and/or increase the response time or flexibility of the production capabilities needed for near and longer-term future weapon activities or Life Extension Programs. Investments will focus on the application of innovative, high value, technology-based solutions to multi-disciplinary, highly complex problems that benefit the Complex and fall within the documented mission space of the Readiness Campaign and its subprograms.

These subprograms together support the capabilities necessary to build entire nuclear weapon systems. They also support the overall mission, goals, objectives, and management processes of the program.

Major FY 2007 Achievements

- Completed installation and acceptance of 9MeV LINAC (X-Ray) ahead of schedule in support of the W76-1 LEP the first user.
- Completed deployment of key capabilities in support of W76-1 life extension program production requirements.
- Made operational the Special Nuclear Materials Component Re-Qualification Facility (SNMCRF), in March 2007, a key capability for qualifying and reusing pits.
- Improved commercial capability to produce a Lightening Arrestor Connector to meet production requirements for the W76-1 LEP as the first user.
- Approved Critical Decision (CD-4) milestone for Tritium Extraction Facility and demonstrated end-to-end process with favorable yields.
- Completed 40-Year Reactor Fuel Study and began implementing action steps to ensure unobligated fuel supply for tritium production.
- Successfully loaded 240 Tritium Producing Burnable Absorber Rods (TPBARs) at Tennessee Valley Authority (TVA) and commenced irradiating for Watts Bar cycle 8.
- Consolidated 240 TPBARs from TVA cycle 7 and delivered them to the Tritium Extraction Facility (TEF).
- Deployed secure wireless capabilities in two secure areas with precedent setting integrated security plan applicable to operations throughout the Nuclear Weapons Complex.
- Proved a develop-to-deploy process that reduces cycle time and cost by approximately one third for W88 Joint Test Assembly (JTA) 2 with anticipated similar savings for all JTA programs.

Major Outyear Priorities and Assumptions

The outyear projections for the Readiness Campaign total $656,567,000 for FY 2010 through FY 2013. The outyear funding for the Readiness Campaign reflects the expansion of focus primarily from capability development and deployment for base workload and Life Extension Program requirements to increasingly address targeted development and deployment of design-to-manufacturing capabilities to meet the evolving needs of the stockpile and support the transformation of the Nuclear Weapons Complex into an agile and more responsive enterprise with shorter cycle times and lower operating

costs. Once the Tritium Readiness subprogram completes development and implements full production operations, it is anticipated that operations may be transferred to the DSW program with funds for fabrication, irradiation, transportation, and extraction of tritium rods broken out of the Readiness Campaign budgets and moved to DSW, beginning in FY 2013. The Readiness Campaign is positioned to support the balance between sustaining the legacy stockpile and supporting the new requirements.

Program Assessment Rating Tool (PART)

The Department implemented a tool to evaluate selected programs. The PART was developed by the Office of Management and Budget (OMB) to provide a standardized way to assess the effectiveness of the Federal Government's portfolio of programs. The structured framework of the PART provides a means through which programs can assess their activities differently than through traditional reviews. The Readiness Campaign has incorporated feedback from the OMB into the FY 2009 Budget Request, and has taken or will take the necessary steps to continue to improve performance.

The results of the OMB review are reflected in the FY 2007 Budget Request. The OMB gave the Readiness Campaign scores of 100 percent on the Program Purpose and Design and Strategic Planning Sections; 89 percent on the Program Management Section, and 78 percent on the Program Results and Accountability Section. Overall, the OMB rated the Readiness Campaign 87 percent, its highest rating of "Effective." The OMB assessment found that the program has demonstrated progress in achieving annual and long-term goals; has a clear and unique purpose; is well managed; and has clear and measurable performance metrics to cover a portion of the program. In addition, the OMB found that it is difficult to measure the impact the program has on optimizing nuclear weapons stewardship activities, such as lowered costs and reduced cycle times. The OMB also noted that the program must coordinate closely with other NNSA programs given its purpose. In response to the OMB findings, the NNSA is investigating performance measures that better assess the program's impact on reducing cost/time, and is improving the coordination of priorities and initiatives across multiple NNSA programs. The NNSA is also continuing to improve the responsiveness of the Nuclear Weapons Complex infrastructure by coordinating program activity with the Nuclear Weapons Complex Transformation Strategy Record of Decision and by integrating program requirements into the new Defense Programs National Level Work Breakdown Structure.

Annual Performance Results and Targets

(R = Results; T = Target)

Performance Indicators	FY 2005 Results	FY 2006 Results	FY 2007 Results	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Endpoint Target
Strategic Goal 2.1 (Nuclear Deterrent) GPRA Unit Program Goal 2.1.32.00, Readiness Campaign										
Cumulative number of critical immediate and urgent capabilities deployed to support our Directed Stockpile Work (DSW) customer's nuclear weapon refurbishment needs derived from the Production Readiness Assessment Plan (Long-term Output)	R: 12 T: 10	R: 16 T: 15	R: 20 T: 20	T: 22	T: 24	T: 25	T: 27	T: 29	T: 30	By 2017, deploy 38 critical immediate and urgent capabilities to support DSW nuclear weapons refurbishment deliverables.
The number of capabilities deployed every other year to stockpile programs that will reduce cycle times at least by 35% (against baselined agility and efficiency) (Annual Outcome)	N/A	N/A	R: 1 T: 1	T: 0	T: 1	T: 0	T: 1	T: 0	T: 1	Deploy at least one new capability to a stockpile program every other year that reduces cycle time by at least 35%.
Cumulative number of Tritium-Producing Burnable Absorber Rods irradiated in Tennessee Valley Authority reactors to provide the capability of collecting new tritium to replace inventory for the nuclear weapons stockpile (Long-term Output)	R: 240 T: 240	R: 240 T: 240	R: 480 T: 480	T: 720	T: 960	T: 960	T: 1,200	N/A	N/A	By 2011, complete irradiation of 1,200 Tritium-Producing Burnable Rods (to provide tritium for nuclear weapons) (Interim Target).
Cumulative percentage of Tritium Extraction Facility (TEF) project completed (total project cost), while maintaining a Cost Performance Index of 0.9 - 1.15 (Efficiency)	R: 87% T: 87%	R: 97% T: 96%	R: 100% T: 100%	N/A	N/A	N/A	N/A	N/A	N/A	By 2007, complete 100% of TEF project, while maintaining a Cost Performance Index of 0.9-1.15. (TEF line item construction funding completed in 2006.)

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
Stockpile Readiness	**21,964**	**18,562**	**28,731**

The mission of the Stockpile Readiness subprogram is to ensure the availability of future manufacturing capabilities for the production of weapon components containing special materials.

In meeting this mission, the Stockpile Readiness subprogram develops and deploys beneficial, cutting-edge applied science and technology concepts and methods into operationally ready capabilities that deliver cost-effective, rapid product realization. The Stockpile Readiness subprogram examines modern and emerging technologies and applies them to the development of new or replacement design and production capabilities in those cases where modern technology would lead to cost-effective lean processes; shortened cycle times; built-in quality and acceptance; closer integration of activities across the Complex; a more productive workforce; and agile processes that enhance responsiveness to future national security needs.

In FY 2009, the Stockpile Readiness subprogram deliverables include a linear array imaging system to provide enhanced digital radiography capabilities, upgrades of chemistry laboratory implementation, the streamlining of the lithium manufacturing line, and upgrades to dynamic testing gages. Stockpile Readiness expects to provide the capability to use infra-red debonding in the area of disassembly, to continue work on modernizing Y-12's lithium manufacturing facility, and to begin a project to install rapid beryllium analyzers at all sites.

High Explosives and Weapon Operations	**19,256**	**9,647**	**8,927**

The HEWO subprogram deploys technology enhancements for existing capabilities, and develops and deploys new capabilities for high explosive (HE) and other energetic component production, component requalification, nuclear weapon assembly and disassembly, material and War Reserve (WR) component logistics and inventory control, and special nuclear material interim storage and staging. The HEWO subprogram provides technology enabled solutions to modernize processes, materials, and facilities and use science-based design, engineering, and manufacturing to achieve a high level of Complex integration, efficiency, and quality, with a reduced cost.

In FY 2009, the HEWO subprogram plans to deliver process capability for models-based design and fabrication of special weapon tooling and HE main charges as well as system engineering based solutions to improve tooling process. Ongoing activities focus on providing capability to non-destructively characterize the quality of potting material after assembly; establishing advanced inventory and materials management systems for storing, tracking and controlling material and hardware assets used in or on the nuclear weapons stockpile. New projects will develop deployment processes for small lot synthesis and formulation and streamlined solutions for HE certification, qualification and acceptance.

Nonnuclear Readiness	**31,139**	**25,103**	**40,165**

The Nonnuclear Readiness subprogram develops and deploys product development and production capabilities required to support nonnuclear product requirements. Nonnuclear functions range from weapon command and control to examining performance during deployment simulations, including weapon structural features, neutron generators, tritium reservoirs, detonators and component testers.

In FY 2009, the Nonnuclear Readiness subprogram planned deliverables include assembly processes for cost efficient precision miniature electrical and mechanical components and advanced plastics technologies. Ongoing activities include neutron generator and advanced main component acceptance test systems, and detonator and reservoir manufacturing and production systems, and agile manufacturing platforms.

Tritium Readiness **77,745** **71,831** **82,265**

The Tritium Readiness subprogram reestablishes and operates the Departmental capability for producing tritium to maintain the national inventory in support of the nuclear weapons stockpile. Irradiation of Tritium-Producing Burnable Absorber Rods (TPBARs) in the TVA Watts Bar reactor began in October 2003. Additional capacity to produce tritium is maintained in standby at TVA Sequoyah Unit #1 reactor until needed to meet tritium production requirements, which are specified in the Nuclear Weapons Stockpile Plan signed annually by the President. The third 18-month tritium production run at Watts Bar began in November 2006. Irradiated rods from the second production run were successfully transported to the TEF at the Savannah River Site (SRS) in mid-FY 2007. At the TEF, tritium from 19 TPBARs from the first run has been extracted from TPBARs and piped directly to the Tritium Loading Facility; the remaining 215 rods from cycle 6 are planned for extraction in early FY 2008.

In FY 2009, the Tritium Readiness subprogram will deliver the fifth production run of TPBARs to TVA for irradiation and will complete irradiation of the fourth run of TPBARs at the TVA Watts Bar reactor. Ongoing activities include development and testing to provide improved TPBAR environmental and production performance, strengthening the supply chain for component sourcing and long-range reactor fuel supplies, and management actions to transition the subprogram from development to steady-state production operations.

Advanced Design and Production Technologies **51,609** **32,945** **22,949**

The ADAPT subprogram includes costs to select, mature, develop, integrate, and demonstrate cost-effective, new technology and enhanced design-through-production-based capabilities needed by customers from DSW and RTBF, and that support the current legacy weapons and associated activities that drive transformation for the Complex and for the weapon stockpile.

The ADAPT projects may utilize the fundamental principles of science-based manufacturing, models-based manufacturing, and alternatives evaluation to select and develop robust, technology-based solutions that support a more responsive and agile production complex. In some cases, projects may leverage collaborations and partnerships with other government agencies and industry; convene and lead multi-disciplinary project teams that include security, safety and the other necessary disciplines to streamline implementation and acceptance of innovative solutions; and use simulation and optimization tools to maximize the use of existing data sources to make better predictions and decisions. For example, completing its work in FY 2008, a high-performing TestWorks team for the W-88 JTA2 Refresh [Joint Test Assembly (JTA)] is developing, demonstrating, and leading the transition into standard practice of improvements that draw down the average JTA cycle time from seven to three years.

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009

In FY 2009, the ADAPT subprogram will include projects such as the streamlining of the lithium manufacturing line, the deployment of the fundamental building blocks of a Complex-wide digital radiography capability, a metal casting process with the potential to replace some wrought products, establishing a mechanism to reach agreement on an industry-wide standard for wireless sensors, and leading the way toward performance-based product specifications and acceptance. Ongoing activities include the development of advanced initiation systems, advancing plastics processing technology, developing micro-modular weapon telemetry, and upgrading components for radar, fireset, and telemetry weapon applications, and enhancing ability to efficiently meet Complex Safety Basis requirements for the 21st century.

Total, Readiness Campaign	**201,713**	**158,088**	**183,037**

Explanation of Funding Changes

	FY 2009 vs. FY 2008 ($000)
Stockpile Readiness	
This increase in funding supports ongoing multi-year projects that continue through FY 2009 and the start of projects in FY 2009 that were in deferred in FY 2008 and FY 2009 to support higher priority RTBF and DSW requirements. The increase also reflects the transfer of some projects formerly included in the ADAPT subprogram that develop process capabilities.	+10,169
High Explosives and Weapon Operations	
This decrease in funding reflects the completion of some multi-year projects in FY 2008. This decrease is partially offset by an increase for new FY 2009 projects that will enhance the automated responsiveness and safety of utilization of high explosives (HE) and related production and machining systems.	-720
Nonnuclear Readiness	
This increase in funding supports ongoing multi-year projects that continue through FY 2009 and the start of projects in FY 2009 that were deferred in FY 2008 to support higher priority RTBF and DSW requirements. New FY 2009 projects focus on flexible production process development. The increase also reflects the transfer of some projects formerly included in the ADAPT subprogram that develop process capabilities.	+15,062
Tritium Readiness	
This increase in funding is part of the approved multi year baseline and is due to a step increase of $12.3M in the cost of uranium reactor fuel to load the TV Watts Bar reactor for cycle 10, where the number of TPBARs planned for irradiation is increased from cycle 9 from 368 to 800 rods. This increase is offset by $1.9M decrease in TEF operating cost and reductions in test activities.	+10,434
Advanced Design and Production Technologies (ADAPT)	
This decrease in funding reflects completion of projects in FY 2008 and the transfer of process development activities to the Stockpile and Nonnuclear Readiness subprograms. FY 2009 ADAPT investments emphasize the development and deployment of validated high potential, high payoff Complex-wide capabilities that reduce operational cost and cycle time, and the Complex footprint.	-9,996
Total Funding Change, Readiness Campaign	**+24,949**

Capital Operating Expenses and Construction Summary

Capital Operating Expenses[a]

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
General Plant Projects	0	0	0
Captial Equipment	11,374	11,715	12,066
Total, Capital Equipment	**11,374**	**11,715**	**12,066**

Outyear Capital Operating Expenses

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
General Plant Projects	0	0	0	0
Captial Equipment	12,428	12,801	13,185	13,581
Total, Capital Equipment	**12,428**	**12,801**	**13,185**	**13,581**

[a] Since 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. FY 2008 and FY 2009 funding shown reflects estimates based on actual FY 2007 obligations.

Major Items of Equipment *(TEC $2 million or greater)*

(dollars in thousands)

Major Item of Equipment	Total Project Cost (TPC)	Other Project Cost	Total Estimated Cost (TEC)	Prior-Year Appro-priations	FY 2007	FY 2008	FY 2009	Completion Date
Microwave Deployment, Y-12 National Security Complex	9,852		8,852	1,697	0	3865	3,290	FY 2010
Multi-axis Orbital Machining Center, Y-12 National Security Complex	4,258		3,879	500	2,000	1,379	0	FY 2009
Coordinate Measuring Machine # 1, Y-12 National Security Complex	7,741		7,467	7,541	-74	0	0	FY 2006
Coordinate Measuring Machine #2, Y-12 National Security Complex	2,065		1,922	1,965	-43	0	0	FY 2006
Hydroforming Unit, Y-12 National Security Complex	1,935		1,770	1,785	-15	0	0	FY 2006
Vacuum Annealing Equipment, Y-12 National Security Complex	3,538		3,335	3,388	-53	0	0	FY 2006
Low Energy X-ray Machine, Y-12 National Security Complex	4,393		4,218	4,243	-25	0	0	FY 2006
Electron Beam Welder, Y-12 National Security Complex	4,487		4,187	4,188	-1	0	0	FY 2006
Metalworking, Y-12 National Security Complex	3,377		2,177	2,178	-1	0	0	FY 2006
Electron Beam Weld Inspection, Y-12 National Security Complex	2,322		2,172	2,494	-322	0	0	FY 2007
Agile Machine, Y-12 National Security Complex	2,100		1,665	2,000	-335	0	0	FY 2007
Total Major Items of Equipment	**46,068**	**0**	**41,644**	**31,979**	**1,131**	**5,244**	**3,290**	

Readiness in Technical Base and Facilities

Funding Schedule by Activity

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
Readiness in Technical Base and Facilities			
Operations of Facilities	1,150,141	1,154,455	1,212,907
Program Readiness	75,167	70,099	73,841
Material Recycle and Recovery	69,982	71,567	72,509
Containers	20,130	21,760	23,398
Storage	35,285	34,462	29,846
Subtotal, Operations and Maintenance	**1,350,705**	**1,352,343**	**1,412,501**
Construction	262,536	285,038	308,022
Total, Readiness in Technical Base and Facilities	**1,613,241**	**1,637,381**	**1,720,523**

Outyear and Over Target Funding Schedule

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
Readiness in Technical Base and Facilities				
Operations of Facilities	1,270,120	1,369,341	1,448,434	1,482,198
Program Readiness	84,433	85,006	85,599	86,626
Material Recycle and Recovery	71,325	80,907	81,292	82,270
Containers	18,349	29,748	29,453	29,809
Storage	25,341	25,754	25,931	26,243
Subtotal, Operations and Maintenance	1,469,568	1,590,756	1,670,709	1,707,146
Construction	434,830	562,801	605,200	665,770
Readiness in Technical Base and Facilities	**1,904,398**	**2,153,557**	**2,275,909**	**2,372,916**

Description

The goal of the Readiness in Technical Base and Facilities (RTBF) program is to operate and maintain National Nuclear Security Administration (NNSA) program facilities in a safe, secure, efficient, reliable, and compliant condition, including facility operating costs (e.g., utilities, equipment, facility personnel, training, and salaries); facility and equipment maintenance costs (e.g., staff, tools, and replacement parts); and environmental, safety, and health (ES&H) costs; and plan, prioritize, and construct state-of-the-art facilities, infrastructure, and scientific tools that are not directly attributable to Directed Stockpile Work (DSW) or a Campaign, within approved baseline costs and schedule.

The RTBF program achieves this goal so that NNSA program facilities are operationally ready to execute nuclear weapons stockpile stewardship tasks on time, as identified by DSW and the Campaigns. Work scope and costs include program contractor facility operations; facility and equipment maintenance: Environment Safety and Health (ES&H) activities; the capability to recover and recycle plutonium, highly-enriched uranium, and tritium to support a safe and reliable nuclear stockpile; and specialized storage containers sufficient to support the requirements of the weapons stockpile.

To support program requirements and efficient operations, Institutional Site Support project allocations will focus on smaller facilities and modernizing selected equipment that support programmatic missions while reducing operating and maintenance costs.

For FY 2009, there will be a refocused effort within the RTBF O&M account to manage and integrate the consolidation of nuclear materials excess to the NNSA mission at NNSA Sites. This effort will focus the funding for specific actions required to 1) Accelerate the removal of Category I and II nuclear materials from the Lawrence Livermore National Laboratory in Livermore California from 2014 to 2012, 2) Continue the Inactive Actinide Disposition project, and 3) Integrate these NNSA efforts with the similar efforts of the Department's Office of Science, Office of Nuclear Energy, and Office of Environmental Management.

Regarding material consolidation, RTBF will package surplus nuclear materials at Los Alamos National Laboratory (LANL) for off-site shipment, continue shipments of Lawrence Livermore National Laboratory (LLNL) programmatic work involving category (CAT) I/II special nuclear material (SNM) to LANL and removal of surplus materials. The NNSA plans to eliminate the need for CAT I/II SNM security at Sandia National Laboratories (SNL) by the end of FY 2008, LLNL by FY 2012, and LANL by FY 2022.

The RTBF Construction Program plays a critical role in revitalizing the nuclear weapons manufacturing and research and development infrastructure. Investments from this program will design and construct facilities that support the nuclear weapons complex, improving the responsiveness and/or functionality of the infrastructure and its technology base. Before advancing to capitalized design efforts, conceptual designs for the projects are prepared using operating funds. The conceptual design for a particular project might exceed $3,000,000 depending on the size, complexity, or other factors associated with that particular project. In accordance with 50 United States Code (USC), Section 2746, which requires the Department to request funds for conceptual designs that exceed the $3,000,000 threshold, two projects will exceed this threshold. Within the Operations of Facilities request, $5,000,000 is included to fund initial mission need and concept activity for the Zone 4 Replacement at Pantex, and $5,000,000 is requested to determine the full extent of required refurbishments of the Los Alamos Neutron Science Center (LANSCE) at the Los Alamos National Laboratory,

The RTBF program partners with two other major elements within Weapons Activities with a focus on the overall nuclear weapons complex. Those two elements are the Facilities and Infrastructure Recapitalization Program (FIRP) and the Directed Stockpile Work (DSW) Program. The RTBF program partners with FIRP to restore nuclear weapons complex facilities and infrastructure, at the right condition, consistent with mission requirements. RTBF funds maintenance of the complex and makes capital investments to sustain the complex into the future. This ensures that facilities necessary for immediate programmatic workload are maintained sufficiently to support that workload. The FIRP is a capital renewal and sustainability program that was established principally to reduce the large backlog of deferred maintenance that had developed during the 1990s to an appropriate level, consistent with industry best practices. RTBF also prepares facilities that are no longer required by the program for disposition by the newly established Transformation Disposition (TD) Program, or the Office of Environmental Management (EM). The TD program will work in partnership with the RTBF program to ensure that the excess facilities and infrastructure of the nuclear weapons complex are dispositioned in order to focus resources on support of the Stockpile Stewardship Program mission, transformation of the complex, and institutionalization of accountable facility management practices. RTBF partners with DSW by having the necessary facilities and capabilities in place to assure DSW Program work can be accomplished. Other, more focused, areas where RTBF and DSW are working closely include the Y-12 Throughput Improvement Program Initiative to increase throughput and efficiency at Y-12, and the Container subprogram, to support increased dismantlement and material consolidation.

External Independent Reviews (EIRs) and Independent Project Reviews (IPRs)
The revised Department of Energy (DOE) Order 413.3A "Program and Project Management for Acquisition of Capital Assets" requires EIRs for Capital Asset Projects greater than $100,000,000. Examples of EIR costs include conducting Performance Baseline EIRs prior to Critical Decision-2 (CD-2) to validate cost and schedule baseline estimates and conducting Construction/Execution Readiness EIRs, which are performed for all Major System projects prior to Critical Decision -3 (CD-3). In addition, projects less than the $100,000,000 threshold will be subjected to an IPR. Beginning in FY 2009, EIRs will be funded within the Office of Management (Engineering and Construction Management) to ensure the "external" and "independent" nature of EIR audits on project performance baselines. Funds appropriated under RTBF operating accounts, Project Engineering and Design datasheets, and construction projects may be used to provide IPRs of associated RTBF projects.

The FY 2008 Consolidated Appropriations Act (P.L. 110-161) directs the Department to manage all projects in excess of $100,000,000 total cost in full compliance with DOE Management Order 413.3A. The NNSA RTBF Program is in compliance with the requirements of the DOE Order 413.3A and an EIR for the Chemistry and Metallurgy Research Building Replacement (CMRR) at LANL will be conducted FY 2009.

Benefits
Within the RTBF program, six subprograms provide unique contributions to the Government Performance and Results Act (GPRA) Unit Program Goal 2.1.33.00:

Operations of Facilities operates and maintains NNSA-owned programmatic capabilities in a state of readiness, ensuring that each capability (including both workforce and facilities) is operationally ready to execute programmatic tasks identified by the campaigns and DSW. This activity funds maintenance of the complex and makes capital investments to sustain the complex into the future.

Program Readiness involves selected activities that support more than one facility, campaign, or DSW activity, and are essential to achieving the objectives of the Stockpile Stewardship Program.

Material Recycle and Recovery (MRR) is responsible for the recycling and recovery of plutonium, enriched uranium, and tritium from fabrication and assembly operations, limited life components, and dismantlement operations in support of weapons and components.

Containers responds to the needs of the nuclear weapons complex by providing directive-approved 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 for nuclear materials and components.

Storage enhances national security by providing effective storage and management of surplus pits, highly enriched uranium (HEU), and other weapons and nuclear materials in compliance with DOE/NNSA requirements.

Construction is a capital acquisition subprogram composed of independent Line Item Construction projects that are created to address specific needs. These needs include replacement of aging facilities; incorporation of modern safety, security, and environmental protection standards; reconfiguration and consolidation to improve the efficiency of the nuclear weapon complex; and incorporation of new technology to provide infrastructure that is responsive to the future needs of the program. The capital

portions of each line item project are independently reviewed and funded by Congress based on the mission need identified in the Construction Project Data Sheet (CPDS) submitted to Congress and the operating portion, which includes funding for oversight, are provided by the Operations of Facilities budget. A table of RTBF Construction projects is provided in the Capital Operating Expenses and Construction Summary section.

Major FY 2007 Achievements

- Exceeded corporate facility availability goals to support DSW and Campaign activities as RTBF facilities were available 99 percent of scheduled days.
- Attained a safety goal accident rate of 1.7 accidents per 200,000 hours of work, well below the national Bureau of Labor Statistics average of 5.0 accidents per 200,000 hours of work.
- Exceeded the NNSA complex-wide aggregate Facility Condition Index (FCI) (deferred maintenance per replacement plan value) target of 7.4% for all mission-essential facilities, achieving a value of 6.5%.
- Initiated 8 transformation projects through Institutional Site Support (ISS), facilitating square foot reduction and modernization activities across the complex. These include consolidating DU/Binary processes at the Y-12 Security Complex, which will remove the last of the mission work from the Alpha-5 facility; replace aging facilities at the Savannah River and Pantex sites with smaller modern facilities to facilitate demolition of the older facilities; prepare CMR wing and other facilities for disposition at LANL; and decontamination of Be-contaminated facilities at SNL.
- Made significant progress in transitioning LANL Training Area-18 missions to the Nevada Test Site (NTS), including completing the first sub-critical criticality safety measurements on special nuclear material at Nevada, completing the last major programmatic shipments of programmatic nuclear material to Nevada, and initiating modifications on the Device Assembly Facility (DAF).
- Provided transportation container support for DSW and NNSA missions, including certifying four containers to accommodate new mission requirements, initiating design on three new containers, and introducing a new replacement container.
- Conducted shipments in support of SNL and LLNL nuclear material de-inventory goals.
- Completed the following four construction projects: Exterior Communications Infrastructure Modernization Project at SNL, Gas Transfer Capacity Expansion Project at Kansas City Plant, Building 12-44 Production Cells Upgrade Project at the Pantex Plant (Pantex), and SNM Component Requalification Facility Project at Pantex.

Major Outyear Priorities and Assumptions

The outyear projections for RTBF are at the level of $8,706,780,000 for FY 2010 through FY 2013. The trend in the five-year period is increasing and reflects funding growth as a result of continued aging of the NNSA complex and the escalating requirements and costs associated with nuclear facility safety and compliance.

The RTBF budget is concentrated on two major objectives: (1) - operate and maintain the NNSA program facilities in a safe, secure, efficient, reliable and compliant condition within the resources available, and (2) be responsive to the demands of the current and future national security challenges, which require revitalization of the nuclear weapons infrastructure within the current parameters, and reduce the total active facility footprint through consolidation and elimination of redundant/excess capabilities. The RTBF program continues to be challenged by the continued aging of the NNSA complex and the escalating requirements and costs associated with nuclear facility safety and compliance. Major construction activities during the period include continued focused effort on the following projects: Uranium Processing Facility (UPF) at Y-12, Chemistry and Metallurgy Research

Facility Replacement at LANL (CMRR), Radioactive Liquid Waste Treatment Upgrade Project at LANL, Weapons Surveillance Facility at Pantex, Ion Beam Laboratory Refurbishment at SNL, High Pressure Fire Loop Zone 12 South at Pantex, High Explosive Pressing Facility at Pantex, and TA-55 Reinvestment Project Phase II at LANL.

To address these challenges, the RTBF program will realize efficiencies through the use of activity based costing principles for selected key facilities and standardized accounting with a more detailed national Work Breakdown Structure. In addition, RTBF intends to manage available infrastructure support resources to prioritize and fund selected projects that will consolidate program activities, reduce program footprint, and replace/refurbish process equipment as needed to support priority program work.

Deferred requirements will be reprioritized based on the future demands placed on the nuclear weapons complex as it moves to reduce total active footprint while continuing to support the existing mission and priorities of DSW and the Campaigns in supporting the requirements associated with national security.

Program Assessment Rating Tool (PART)

The Department implemented a tool to evaluate selected programs. The PART was developed by the Office of Management and Budget (OMB) to provide a standardized way to assess the effectiveness of the Federal Government's portfolio of programs. The structured framework of the PART provides a means through which programs can assess their activities differently than through traditional reviews. The RTBF program has incorporated feedback from the OMB into the FY 2009 Budget Request, and has taken or will take the necessary steps to continue to improve performance.

The results of the OMB review are reflected in the FY 2009 Budget Request. The OMB gave the RTBF program scores of 100 percent on the Program Purpose and Design, Strategic Planning, and Program Management Sections; and 68 percent on the Program Results and Accountability Section. Overall, the OMB rated the program as 84 percent, its second highest rating of "Moderately Effective." The OMB assessment found the program has a clear and necessary purpose and there is not any other viable alternative in terms of another government or private entity offering a comparable service; potential overlaps with the Facilities Infrastructure Recapitalization Program have been identified for avoidance; and the program has well-defined performance measures upon which to gauge progress, has demonstrated progress in achieving them, and has adjusted to changing infrastructure priorities. In response to the OMB findings, NNSA management is strengthening procedures to facilitate program application in a similar manner at all eight nuclear weapons complex contractor sites, including adoption of a common RTBF work breakdown structure. The NNSA is also continuing to improve the responsiveness of the Nuclear Weapons Complex infrastructure by coordinating program activity with the Nuclear Weapons Complex Transformation Strategy Record of Decision and by integrating program requirements into the new Defense Programs National Level Work Breakdown Structure.

Annual Performance Results and Targets

(R = Results; T = Targets)

Performance Indicators	FY 2005 Results	FY 2006 Results	FY 2007 Results	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Endpoint Target
Strategic Goal 2.1 (Nuclear Deterrent) GPRA Unit Program Goal 2.1.33.00, Readiness in Technical Base and Facilities										
Enable NNSA missions by providing operational facilities to support nuclear weapon dismantlement, life extension, surveillance, and research and development activities, as measured by the percent of scheduled versus planned days mission-critical and mission-dependent facilities are available without missing key deliverables (Annual Outcome)[a]	R: 98.8% T: 90%	R: 98.1% T: 90%	R: 99% T: 90%	T: 95%	T: 95%	T: 95%	T: 95%	T: 95%	T: 95%	Annually, mission-critical and mission dependent facilities are available at least 95% of scheduled days.
In support of transformation goals to reduce the size of the Nuclear Weapons Complex, prepare facilities for disposition, as measured by the annual square footage of facilities deactivated and decommissioned. (Annual Output) [a]	N/A	N/A	N/A	N/A	N/A	T: 150,000	T:200,000	T: 250,000	T:300,000	By 2013, annually prepare 300,000 square feet for disposition.
Annual NNSA complex-wide aggregate Facility Condition Index (FCI), as measured by deferred maintenance costs per replacement plant value, for all mission-critical facilities and infrastructure (Annual Outcome)[b]	R: 7.4% T: 9%	R: 6.7% T: 7.4%	R: 6.5% T: 6.8%	T: 5%	T: 5%	T: 5%	T: 5%	T: 5%	T: 5%	By 2008, annually, maintain the NNSA FCI for mission-critical facilities at 5%.
Annually NNSA complex-wide aggregate Facility Condition Index, as measured by deferred maintenance costs per replacement plant value, for all mission-dependent, not critical facilities and infrastructure (Annual Outcome) [b]	N/A	N/A	N/A	T: 8.25%	T: 8%	T: 7.75%	T: 7.5%	T: 7.25%	T: 7%	By 2013, maintain the NNSA FCI of mission-dependent facilities at 7%.

[a] Measure was modified or developed in 2007 during the OMB PART assessment.

[b] Measures were developed in 2007 from prior single measure to reflect change in facility designation (mission essential to mission critical and mission dependent).

Performance Indicators	FY 2005 Results	FY 2006 Results	FY 2007 Results	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Endpoint Target
Execute construction projects within approved costs and schedules, as measured by the total percentage of projects with total estimated cost (TEC) greater than $20M with a schedule performance index (ratio of actual work performed to scheduled work) and a cost performance index (ratio of actual cost of work performed to budgeted cost of work) between 0.9-1.15 (Efficiency)	R: 71%	R: 90% T: 75%	R: 100% T: 80%	T: 85%	T: 90%	T: 90%	T: 90%	T: 90%	T: 90%	By 2009, 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.

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
Operations of Facilities	**1,150,141**	**1,154,455**	**1,212,907**

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 identified in Campaigns and DSW. Operates the program infrastructure and facilities in a safe, secure, reliable, and "ready for operations" manner. Facility-specific activities include, but are not limited to, maintenance; utilities; environment, safety and health; implementation plan actions to address safety issues; and implementation of rules, such as the Beryllium Rule 10CFR850, Chronic Beryllium Disease Prevention Program (CBDPP); and maintenance of the Authorization Basis (AB) for each facility per 10CFR830; and the transfer of the ES&H activities from the Department as a result of a reorganization. Infrastructure-support activities include facility-related costs that are not associated with the ongoing operations of facilities, such as conceptual design reports; other project-related costs for line items; National Environmental Policy Act (NEPA) activities; institutional capital equipment and general plant projects; and facility startup, standby, and decommissioning and decontamination (D&D), which includes costs associated with maintaining facilities in a standby status for possible further use or D&D. Maintains current and future operations with a smaller workforce, growing maintenance needs, and increasing regulatory requirements. Payment-in-Lieu-of-Taxes for Los Alamos County (approximately $200,000 per year) and Y-12 (approximately $200,000 per year); University of California pension payments (approximately $12,500,000 per year); and the Los Alamos Pueblo Project (approximately $800,000 per year) are funded from the Operations of Facilities account within RTBF. Provides new and upgraded facilities and capabilities. Seeks cost efficiencies through the consolidation of facilities and functions. Develops an integrated maintenance program that includes routine maintenance, capital renewal, and extraordinary maintenance items that are impacting cost and performance. Also includes $3,000,000 for Reimbursement to the Judgment fund of the US Treasury for the award to Rockwell by the United States Court of Federal Claims. The case brought by Rockwell argued that DOE breached the terms of the contract when they lowered the award fee amount while they were the management and operating contractor who operated the Rocky Flats site for Defense Programs (DP) during the site's production period.

	FY 2007	FY 2008	FY 2009
▪ **Kansas City Plant**	**84,173**	**84,702**	**122,389**

Operates and maintains the KCP in a state of readiness, prepared to execute programmatic tasks identified in the DSW and Campaigns programs. Operation of the KCP provides infrastructure support to manufacturing and engineering activities for a broad array of DSW, LEPs and Stockpile Systems products, the associated weapon programs, and technology development and deployment activities. Operations of Facilities include costs for -- Facilities Management, Maintenance, Utilities, ES&H, Capital Equipment, General Plant Projects (GPP), and Expense-funded projects. Operations of Facilities funding may be used to provide further support to the planned down-sizing of the Kansas City Plant (KCP) consistent with reducing the size of the nuclear weapons complex and improving operational efficiency.

In addition to operation and maintenance costs at the facilities, specific efforts for FY 2009 will be focused on completion efforts associated with execution of a comprehensive project plan to establish a Kansas City based Supply Chain Management Center (SCMC) to gain efficiencies and savings from consolidation of procurement systems, supplier management, and contracting

agreements. Also, the Kansas City Responsive Infrastructure Manufacturing and Sourcing (KCRIMS) transformation plan continues towards implementation.

- **Lawrence Livermore National Laboratory** **85,751** **89,303** **85,160**

Operates and maintains the LLNL facilities in a state of readiness and keeps the facilities and capabilities safe, secure, reliable, and "ready for operations" state of readiness the DSW and campaign programs. Operation of facility activities include, but are not limited to newly generated waste, building and building system maintenance; utilities; maintenance of programmatic equipment; ES&H; actions to address safety issues, and implementation of rules, such as the Safety Basis Rule 10CFR830, Nuclear Safety Management. Also included is Infrastructure support (Facilities Support) which funds Other Project Costs (OPC) for the RTBF line item construction projects, and Offsite Assignees (at NNSA Headquarters), in addition to other minor RTBF activities not specifically allocated to a facility or facility group. Includes funding for removal of Category I and II quantities of nuclear materials from the Livermore site.

In FY 2009, the majority of the Category I and II quantities of nuclear materials have been completed and normal fixed operational costs and readiness posture are being maintained.

- **Los Alamos National Laboratory (LANL)** **278,956** **285,025** **298,112**

Operates and maintains the LANL facilities in a state of readiness to ensure that mission-essential capabilities in critical nuclear facilities and other DP facilities and infrastructure are available to conduct the scientific, computational, engineering, and manufacturing activities of the Stockpile Stewardship Program in a safe, secure, compliant, and cost effective manner. DP direct-funded facilities include the Engineering, Manufacturing Systems and Methods Shops, Tritium, Dynamic Experimentation, LANSCE, Waste Management, Nuclear Materials Technology (TA-55 & Chemistry and Metallurgy Research [CMR]), and Beryllium Technology. Work scope includes conventional facility management, infrastructure and utilities, and operation and maintenance of special equipment. Efforts will also be focused on consolidation and disposition of excess nuclear materials presently held by LANL. Also funds, development and implementation of authorization basis modifications needed to reduce the risk and extend the life of the facility until CMR Replacement facility is operational. Operations of Facilities also funds general infrastructure support activities such as Other Project Costs for Line Items, General Plant Projects, and Authorization Basis (AB) activities.

In accordance with 50 United States Code (USC), Section 2746, which requires the Department to request funds for conceptual designs that exceed the $3,000,000 threshold, the following project will exceed this threshold: the Los Alamos Neutron Science Center (LANSCE) at LANL. Funding in the amount of $5,000,000 is requested for activities directly associated with the LANSCE-Refurbishment particularly as it relates to enabling a central facility for material science and providing a foundational basis for establishing a signature experimental facility for materials research.

For FY 2009, specific activities will be focused on Other Project costs associated with construction projects in addition to the fixed operational costs and to keep the facilities and capabilities in a safe, secure, reliable, and "ready for operations" state of readiness.

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
▪ **Nevada Test Site**	**65,687**	**64,863**	**92,203**

Operates and maintains the NTS facilities and capabilities in a safe, secure, reliable, and "ready for operations" state of readiness. Provides essential physical and operational infrastructure to nine facilities – six located at NTS; and one each at North Las Vegas, Nevada; Livermore, California; and Los Alamos, New Mexico. The facilities are the DAF, U1a Complex, Joint Actinide Shock Physics Experimental Research (JASPER), Atlas, BEEF, Control Point Complex, North Las Vegas Complex, Livermore Technical Facility, and the Los Alamos Technical Facility. These unique, specialized facilities handle and test special nuclear material, and are designated RTBF mission critical. Atlas will be maintained in "cold standby". Operations of facilities also funds line item Other Project Costs.

For FY 2009, in addition to the fixed operational costs to keep the facilities and capabilities in a safe, secure, reliable, and "ready for operations" state of readiness, DAF will require additional funding for mission support, and maintenance as well as required annual Material Control and Accountability (MC&A) requirements.

▪ **Pantex Plant**	**107,900**	**112,813**	**104,361**

Operates and maintains the Pantex Plant in a state of readiness, prepared to execute programmatic tasks identified in the DSW and Campaigns programs. Provides for facility management and support including the ability to function effectively, such as plant and maintenance engineering, facility utilization analysis, modification and upgrade analysis, facilities planning and condition determinations, and the rental of buildings and land. Also provides for maintenance activities which sustain property, plant, and equipment in a condition suitable to fulfill the mission safely and reliably, including preventative, predictive, corrective, and general maintenance. Provides for utilities costs for the utilities management program, utility-related engineering, an energy-savings program, and operation and distribution of utility services. Work activities include: the collection and treatment of wastewater; steam distribution and condensate return; electrical distribution; natural gas distribution; compressed air; and water production, treatment, distribution to support domestic, industrial, and fire protection needs; AB documentation; safety and health assurance including Radiation Safety, Nuclear Explosive Safety, Occupational Medicine, Industrial Hygiene, and Industrial Safety; emergency management and environmental protection, waste management, and waste minimization activities.

Other Project Costs associated with line item projects include research and development, Conceptual Design Plans and Reports, Design Criteria, Project Execution Plans, NEPA documentation, Construction Project Data Sheets, maintenance procedures to support facility startup, initial operator training, commissioning costs, operational readiness reviews, and readiness assessments. In accordance with 50 United States Code (USC), Section 2746, which requires the Department to request funds for conceptual designs that exceed the $3,000,000 threshold, the following project will exceed this threshold: the Area 4 at Pantex. Funding in the amount of $5,000,000 is requested for activities directly associated with the Area-4.

For FY 2009, specific activities will be focused the fixed operational costs and to keep the facilities and capabilities in a safe, secure, reliable, and "ready for operations" state of readiness.

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
▪ **Sandia National Laboratories**	**155,905**	**153,873**	**127,827**

Operates and maintains the SNL facilities and capabilities in a safe, secure, reliable, and "ready for operations" state of readiness. The dominant cost driver for these capabilities/facilities is the staff (SNL and contract labor) required to keep the capability operational. The capabilities and associated facilities funded by RTBF Operations of Facilities are Tech Area III Full Scale Test, Microelectronics Development Laboratory, Experimental Aerodynamics (Wind Tunnel), Tech Area IV Accelerators, Tech Area V Nuclear Reactors, Nanosciences Labs, Electromagnetic Test Facilities, Materials Characterization Laboratories, Environmental Test Facilities in Albuquerque and Livermore, Neutron Generator Production Facility, Primary Standards Laboratory, and Waste Management Activities. SNL will complete those activities associated with consolidation and removal of Special Nuclear Materials and ensuring that they are relocated and safely stored at the Idaho National Laboratory. RTBF O&M account will fund the storage of those materials and negotiations will continue on cost associated with the future processing of those materials.

For FY 2009, specific activities will be focused the fixed operational costs and to keep the facilities and capabilities in a safe, secure, reliable, and "ready for operations" state of readiness.

▪ **Savannah River Site**	**95,479**	**85,738**	**108,114**

Operates and maintains the Savannah River Site in a state of readiness, prepared to execute programmatic tasks identified in the DSW and Campaigns programs including facilities management and support activities that maintain the facilities and infrastructure for mission operations. Preventive, predictive, and corrective maintenance of process and infrastructure equipment and facilities is performed. Environmental, safety, and health activities are conducted to ensure the well being of SRS workers, the public, and the environment. Contracted costs of providing utilities to the Tritium Extraction Facility, unloading line to establish capabilities for new systems, and high priority capital equipment and GPP are also included. Capital Equipment and General Plant Projects that meet base maintenance and infrastructure needs are planned and executed to maintain the safety, utility, and capability of the process facilities.

For FY 2009, specific activities will be focused on costs associated with high priority capital equipment and GPP and support the establishment of the Tritium Extraction Facility Uploading Line in addition to the fixed operational costs and to keep the facilities and capabilities in a safe, secure, reliable, and "ready for operations" state of readiness.

▪ **Y-12 National Security Complex**	**206,169**	**224,190**	**216,904**

Funds operation and maintenance of Y-12 mission-essential facilities in a state of readiness, in which each facility is operationally ready to execute programmatic tasks within multiple DP mission elements. Provides for management of the thirteen production and production support facilities and related facility systems, including newly generated waste. These facilities are operated to ensure compliance with ES&H requirements and DOE orders, and to ensure the availability of the facilities for all Defense Programs programmatic objectives. An AB is maintained for each facility, including development of AB documentation to meet the requirements of 10CFR830 Nuclear Safety Rule, annual updates of AB documentation, and unreviewed safety question determinations as applicable.

(dollars in thousands)

FY 2007	FY 2008	FY 2009

In FY 2009, specific activities will focus on the consolidation and disposition of excess uranium and other nuclear materials from the Y-12 plant in addition to operating and maintaining facilities and capabilities in a state of readiness.

- **Institutional Site Support** **70,121** **53,948** **57,837**

  Supports corporate activities across the nuclear material complex including: planning, coordinating, re-packaging and disposition of inactive actinide materials, program management and performance monitoring, occurrence reporting systems, quality assurance working groups, system engineering, program risk management, enterprise modeling, independent and internal technical reviews and assessments. Examples of assessments and reviews include analyses of evolving production requirements, forecasting of nuclear material supply and demand, and funding is also provided for projects to meet changing programmatic requirements while improving operational efficiency, reducing active footprint, and lowering operating costs. The focus of the initiative is on smaller facilities and modern equipment that support programmatic missions while reducing operating/maintenance costs.

  In FY 2009, specific activities support the continued planning, coordination and execution of materials consolidation activities which impact multiple sites although site specific materials consolidation activities are funded within the site Operations of Facilities budgets. Supports the ongoing inactive actinide materials disposition in addition to the supporting the NWC corporate activities.

Program Readiness **75,167** **70,099** **73,841**

Supports selected activities that rely on more than one facility, Campaign, or DSW activity, and are essential to achieving the objectives of the Stockpile Stewardship Program.

- At the KCP, Program Readiness supports the training, development, and technical apprenticeship of new associates for critical skills, and the technical resource pipeline required to sustain critical production and engineering capabilities in support of DSW.

- At the NTS, Program Readiness activities include logistical support for laboratory staff permanently located in Nevada, including facilities, equipment, and administrative and technical support. Efforts related to offsite monitoring, weather, cultural resources, hydrology, and geology are also supported. Legacy environmental compliance issues that resulted from years of nuclear testing activities in Nevada are addressed, as well as regulatory requirements and efforts to avoid potential compliance orders. The Borehole Management Program will continue to close the remaining NTS legacy boreholes in accordance with the approved site execution plan to comply with state environmental regulations. The NTS Equipment Revitalization Program will continue to replace and modernize NTS equipment that is obsolete in accordance with the NTS Comprehensive Capital Equipment Plan.

- At the PX, Program Readiness activities include operational quality assurance, production assurance, critical skills, and program readiness program management. Production assurance provides management and oversight capabilities to integrate program readiness across all program areas.

- At SNL, Program Readiness is focused on people readiness, technical readiness and facilities readiness. The goal of the people readiness program is to form a cohesive, forward-looking program that nurtures critical expertise for the future of the Nuclear Weapons Program. Included in this area are the Knowledge Management program, which covers the Weapons Intern Program and Knowledge Preservation, the Russian Program, the Sandia University Research Program, the Critical Skills program, the National Nanotechnology Enterprise Development Center and Offsite assignees (at NNSA Headquarters). Technology readiness includes work in Intelligent Systems, Materials Characterization Facilities, Nanosciences, Engineering Sciences Readiness, Radiation Science Readiness, Radiation Hardened Microelectronics, and California Readiness. The goal of the facility readiness program is to ensure that identified facilities are available and that the Science campaign test readiness activities at NTS are supported.

- Program Readiness also supports the Nuclear Criticality Safety Program (NCSP). The NCSP, developed in response to DNFSB Recommendation 97-2, maintains a base nuclear criticality skills and technical capability necessary to support all operational criticality safety programs in the Department's nuclear facilities.

In FY 2009, specific activities are addressing microelectronics in support of next generation technology and process optimization for electronic and optical designs. The Federal Facility Agreement and Consent Order and the Legacy Rehabilitation projects continue to be supported in FY 2009, along with historical archiving and seismic monitoring activities and support activities for the Program Readiness program to ensure that the Stockpile Stewardship objectives are met.

Material Recycle and Recovery	**69,982**	**71,567**	**72,509**

Provides for recycling and the recovery of plutonium, enriched uranium, and tritium from fabrication and assembly operations, limited life components, and dismantlement of weapons and components. Supports the implementation of new processes or improvements to existing processes for fabrication and recovery operations, material stabilization, conversion, and storage. MRR supports the process of recycling and purifying the above materials to meet specifications for safe, secure, and environmentally acceptable storage, and to meet the directive schedule for tritium reservoir refills. MRR is principally accomplished at Y-12, LANL, and the SRS Tritium Facility.

- At LANL, activities include response to uranium stabilization/decontamination/repackaging, nuclear materials information management, the Special Recovery Line, a small amount of generic criticality safety support, and nuclear materials planning and reporting.

- 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 LEP and Stockpile Services missions.

- At the Y-12, activities include 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, and Salvage Operations and Filter Teardown. All of these activities are required to provide materials needed for Stockpile Stewardship and to ensure safe and secure handling of materials on-site. In

addition, MRR includes: the Central Scrap Management Office that manages the receipt, storage, and shipment of enriched uranium scrap; the Precious Metals Business Center, which provides a cost effective service to many users within the DOE complex; and deactivation of building 9206.

- Activities include responses to uranium stabilization/ decontamination/repackaging; nuclear materials information management; a small amount of generic criticality safety support, and nuclear materials planning and reporting.

For FY 2009, the project continues its ongoing programs such as uranium stabilization, decontamination, and repackaging.

Containers **20,130** **21,760** **23,398**

Provides for 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. New container systems are developed to improve safety, security, ability to be maintained and accept a broader array of contents to minimize the number of specialized containers that have to be maintained. Supports NNSA's nuclear material consolidation and de-inventory activities including the procurement of the 9975 containers to remove Cat I and Cat II from LLNL. The container refurbishment work that supports specific DSW Dismantlement and LEPs is funded by the individual program.

For FY 2009, in addition to providing container research and development, work will be continued on the accelerated material consolidation program.

Storage **35,285** **34,462** **29,846**

Provides for effective storage and management of national security and surplus pits, Highly Enriched Uranium (HEU), and other weapons and nuclear materials in compliance with DOE/NNSA requirements. This includes the cost of receipt, storage, and inventory of nuclear materials, non-nuclear materials, HEU, enriched lithium, and components from dismantled warheads. Provides programmatic planning for nuclear material requirements, including analysis, forecasting, and reporting functions, as well as emergent analyses of nuclear materials as designated by the NNSA and others.

- At Pantex, activities include long-term storage of special nuclear materials, which involves 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. Pit Disassembly & Inspection Surveillance includes surveillance activities associated with pits in storage. Activities include weight and leak testing, visual inspections, and radiography.

- At the Y-12 National Security Complex, 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 (NMMS&D) program provides programmatic guidance and support of these materials and services throughout the Nuclear Weapons Complex. 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.

For FY 2009, in addition to providing effective storage and management of national security and surplus pits, Highly Enriched Uranium (HEU), and other weapons and nuclear materials, work will continue on the accelerated material consolidation program.

Construction	**262,536**	**285,038**	**308,022**

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. These projects are listed in the Construction Projects table in the Capital Operating Expenses and Construction Summary section.

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. Both are critical to ensure a reliable nuclear weapons stockpile.

To effectively support both the near and long-term needs of the weapons complex, the RTBF Construction subprogram must be flexible and responsive to diverse and evolving program and facility requirements. The Integrated Construction Program Plan (ICPP), first established in FY 2002 by the Deputy Administrator for Defense Programs and the Associate Administrator for Infrastructure and Environment, is the planning and prioritization document that integrates the line item construction plans included in the sites' Ten Year Site Plans with the Future-Years Nuclear Security Program (FYNSP). Through the ICPP and other associated processes, NNSA ensures the construction program is appropriately aligned and integrated with validated program requirements, and resources are optimally allocated to individual projects based on established priorities and demonstrated readiness. Funds appropriated under RTBF operating accounts, Project Engineering and Design datasheets and construction projects may be used to provide independent technical assessments of associated Readiness in Technical Base and Facilities projects.

For FY 2009, this subprogram includes the cost of new and ongoing line item construction projects that support the Nuclear Weapons Complex, except for the major programmatic specific projects that support specific campaigns. RTBF Construction projects range from complex, state-of-the-art facilities and advanced scientific and technical tools, to replacement facilities and basic infrastructure.

Total, Readiness in Technical Base and Facilities	**1,613,241**	**1,637,381**	**1,720,523**

Explanation of Funding Changes

	FY 2009 vs. FY 2008 ($000)
Operations of Facilities	
▪ **Kansas City Plant**	
This increase supports the increased activities at the Kansas City Plant associated the KCP transformation project (Kansas City RIMS) and the supply change management center at KCP. These efforts are critical to the ability of the NNSA to exit Kansas City Plant by 2012 into a smaller, more efficient building.	+37,687
▪ **Lawrence Livermore National Laboratory**	
Decreases due to funding shifts to support higher priority programmatic activities at other sites.	-4,143
▪ **Los Alamos National Laboratory**	
The increase supports Other Project Costs (OPC) associated with Los Alamos construction projects activities and an increase associated with the overall operating level of site facility maintenance costs and associated operating costs.	+13,087
▪ **Nevada Test Site**	
The increase is due to Device Assembly Facility (DAF) mission support, maintenance as well as required annual Material Control and Accountability (MC&A) requirements.	+27,340
▪ **Pantex Plant**	
Decreases due to funding shifts to support higher priority programmatic activities at other sites.	-8,452
▪ **Sandia National Laboratories**	
The decrease is due to a shift of funding and scope for operations of the Z machine to Inertial Confinement Fusion Ignition and High Yield Campaign (ICF).	-26,046
▪ **Savannah River Site**	
The increase is to support the Tritium Extraction Facility Unloading Line to establish capabilities for new systems, and high priority capital equipment and GPP.	+22,376
▪ **Y-12 National Security Complex**	
The decrease is a result of the reduction of support to the Highly Enriched Uranium Materials Facility (HEUMF) OPCs and UPF conceptual design activities.	-7,286

	FY 2009 vs. FY 2008 ($000)
▪ **Institutional Site Support** Provides escalation for ongoing corporate activities including re-packaging and disposition of inactive actinide materials, program management and performance monitoring, occurrence reporting systems, quality assurance working groups, system engineering, program risk management, enterprise modeling, independent and internal technical reviews and assessments. Reflects the transfer of funding ($3M) and responsibility for pensions and post-retirement benefits for retirees previously employed by the General Electric Company (GE) at the Pinellas facility to the Office of Legacy Management.	+3,889
Total, Operations of Facilities	**+58,452**
Program Readiness The increase is provided to address microelectronics in support of next generation technology, systems material, and tool and process optimization in support of future electrical and optical designs; increase in work at the DAF.	+3,742
Material Recycle and Recovery Provides escalation for ongoing activities including uranium stabilization/ decontamination/repackaging; nuclear materials information management; a small amount of generic criticality safety support, and nuclear materials planning and reporting at Y-12, LANL, and the SRS Tritium Facility.	+942
Containers The increase allows for expediting of material consolidation.	+1,638
Storage The decrease reflects the transition into operations at HEUMF at Y-12, and which is partially offset by an increase for expedited material consolidation.	-4,616
Construction The increase is consistent with planned construction project profiles for ongoing construction projects.	+22,984
Total Funding Change, Readiness in Technical Base and Facilities	**+83,142**

Capital Operating Expenses and Construction Summary

Capital Operating Expenses[a]

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
General Plant Projects	37,503	38,628	39,787
Captial Equipment	70,231	72,338	74,508
Total, Capital Equipment	**107,734**	**110,966**	**114,295**

Outyear Capital Operating Expenses

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
General Plant Projects	40,981	42,210	43,476	44,780
Captial Equipment	76,743	79,045	81,416	83,858
Total, Capital Equipment	**117,724**	**121,255**	**124,892**	**128,639**

Construction Projects[b,c]

(dollars in thousands)

	Total Estimated Cost (TEC)	Prior Year Appropriations	FY 2007	FY 2008	FY 2009	Unappropriated Balance
09-D-404, Test Capabilities Revitalization, Phase 2, SNL	37,700	0	0	0	3,200	34,500
08-D-801, High Pressure Fire Loop, PX	31,910	0	0	6,866	2,000	23,044
08-D-802, High Explosive Pressing Facility, PX	72,549	0	0	15,008	28,233	29,308
08-D-804, TA-55 Reinvestment Project, Phase I, LANL	15,100	0	0	5,885	7,900	1,315
08-D-806, Ion Beam Laboratory Refurbishment, SNL	34,813	0	0	9,911[d]	10,014	14,888

[a] Since funds are appropriated for Operations and Maintenance, which includes operating expenses, capital equipment and general plant projects, we no longer budget separately for capital equipment and general plant projects. FY 2008 and FY 2009 funding shown reflects estimates based on projected FY 2007 obligations.

[b] The TEC estimate is for design only for the PED projects included in 07-D-140, 06-D-140, 05-D-140, 04-D-103, 03-D-103, and 01-D-103.

[c] These represent construction TEC estimates. Design TEC estimates are reported in the appropriate PED project.

[d] FY 2008 funds appropriated for project 08-D-806, Ion Beam Laboratory Refurbishment, SNL were appropriated under the Engineering Campaign as a result of the FY 2008 Consolidated Appropriations Act (P.L. 110-161).

(dollars in thousands)

	Total Estimated Cost (TEC)	Prior Year Appropriations	FY 2007	FY 2008	FY 2009	Unappropriated Balance
07-D-140, Project Engineering & Design, VL	9,946	0	0	2,452	7,446	48
07-D-220, Radioactive Liquid Waste Treatment Facility Upgrade, LANL	61,410	0	0	26,162	19,660	15,588
06-D-140, Project Engineering & Design, VL	343,619	11,859	16,577	41,552	104,661	168,970
06-D-402, NTS Replace Fire Stations No. 1 and No. 2, NTS	35,679	8,201	11,419	6,591	9,340	128
06-D-403, Tritium Facility Modernization, LLNL	10,500	2,574	7,926	0	0	0
05-D-140, Project Engineering & Design, VL	32,078	15,463	9,615	1,961	0	5,039
05-D-402, Beryllium Capability Project, Y-12	23,730	11,221	7,494	0	5,015	0
04-D-103, Project Engineering and Design, VL	12,989	7,011	5,978	0	0	0
04-D-125, Chemistry and Metallurgy Research Facility Replacement (CMRR), LANL	TBD	104,075	53,422	74,141	100,200	TBD
04-D-128, Criticality Experiments Facility (formerly TA-18 Mission Relocation Project), LANL/NTS	80,643	16,638	24,197	28,892	10,353	563
03-D-103, Project Engineering and Design, VL	73,188	59,027	14,161	0	0	0
01-D-103, Project Engineering and Design, VL	59,413	57,848	1,565	0	0	0
01-D-124, Highly Enriched Uranium Materials Facility, Y-12	467,402	280,220	110,182	75,528	0	1,472
Total, Construction			**262,536**	**285,038**	**308,022**	

Outyear Construction Projects

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
12-D-XXX, NW Engineering & Product Support Complex, SNL	0	0	4,000	5,000
11-D-140, PED, Complex Command Center, Y-12	0	4,000	4,000	4,080
11-D-XXX, Complex Command Center, Y-12	0	10,000	21,200	10,000
10-D-XXX, Uranium Processing Facility, Y-12	56,000	188,000	281,000	333,000
10-D-XXX, Weapons Surveillance Facility (formerly Component Evaluation Facility), PX	7,500	29,577	25,000	43,690
10-D-XXX, TA-55 Reinvestment Phase II, LANL	14,000	20,000	20,000	20,000
10-D-XXX, TRU Waste Facility, LANL	15,000	5,000	0	0
09-D-404, Test Capabilities Revitalization-II, SNL	6,276	28,224	0	0
08-D-801, High Pressure Fire Loop, PX	0	0	0	0
08-D-802, High Explosive Pressing Facility, PX	17,028	0	0	0
08-D-804, TA-55 Reinvestment Project, Phase I, LANL	1,200	0	0	0
08-D-806, Ion Beam Laboratory, SNL	13,813	1,000	0	0
07-D-220, Radioactive Liquid Waste Treatment Facility Upgrade, LANL	15,078	0	0	0
06-D-140, Project Engineering & Design, VL	116,970	52,000	0	
04-D-125, Chemistry and Metallurgy Research Facility Replacement (CMRR), LANL	171,965	225,000	250,000	250,000
Total, Construction	**434,830**	**562,801**	**605,200**	**665,770**

09-D-404, Test Capabilities Revitalization, Phase 2
Sandia National Laboratories, New Mexico
Project Data Sheet (PDS) is for Construction

1. Significant Changes

Critical Decision 2A, long lead procurements, was approved on December 5, 2007, with the TPC estimate of $52,538,000. This estimate is preliminary and did not include the D&D cost. The project scope has been reduced since the CD-1 approval. CD-0 was approved in July 2001 and the project was split to two phases; Phase 1 has now been completed and operational. CD-2B is expected to be approved in the 4th quarter FY 2008, which will establish the performance baseline cost, scope, and schedule, including the dates for the CD-3 and CD-4. CD-3 does not necessarily correspond to the start of construction. This Phase 2 project datasheet is for long-lead procurement activities.

A Federal Project Director with Level III certification has been assigned to this project.
This Construction Project Data Sheet is new for construction.

2. Design, Construction, and D&D Schedule

(fiscal quarter or date)

	CD-0	CD-1 (Design Start)	(Design/PED Complete)	CD-2	CD-3 (Construction Start	CD-4 (Physical Construction Complete)	D&D Start	D&D Complete
FY 2009	07/03/2001	05/27/2005	3QFY2008	4QFY2008	4QFY2008	4QFY2013	3QFY2010	4QFY2011

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-2A							
FY 2009	12/5/2007							

CD-2A: Procure long-lead services for machining the gas gun and the 12-inch actuator for the Mechanical Shock Facility.

3. Baseline and Validation Status

(dollars in thousands)

	TEC, PED[a]	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2009	6,883	37,700	44,583	7,500	455	7,955	52,538

[a] PED funds for Phase 2 was requested in FY 2005 under PED Line Item 05-D-140

4. Project Description, Justification, and Scope

Project Description

Phase 2 of the Test Capabilities Revitalization (TCR) project will revitalize the NNSA aged and deteriorated normal and abnormal mechanical environment test capabilities at Sandia National Laboratories (SNL) and to enable an integrated experimental strategy to develop, validate, and apply models required to perform weapon system qualifications and development activities. The facilities to be revitalized are needed to perform nuclear weapon component, subsystem, and system-level design, development, qualification, surveillance, significant finding investigations, and model development and validation experimentation and testing.

Project Justification

The existing test capabilities are inadequate to reliably support mission requirements. Without revitalization, individual test capabilities will be lost over the next five years**.** Without labs and test instrumentation enhancements, the Modeling and Simulation approach to design, development, and qualification will not be achieved. Without improved test facilities, Sandia will not attract the high quality test engineers and scientists needed to meet NNSA's stockpile stewardship obligations.

A study conducted in 2000 found that nearly 90% of TCR's test equipment and facilities were inadequate or marginal, and only 11% were adequate to meet mission requirements. Conditions have worsened since this study and multiple system failures have delayed defense program testing and increased program expenses to make temporary repairs

The TCR-2 test capabilities needs are driven by three overarching and equally important requirements. The first requirement is to maintain and modernize the existing stockpile as defined in the current *Nuclear Weapons Stockpile Memorandum*. This encompasses all maintenance and stockpile surveillance activities, as well as Significant Finding Investigations.

Furthermore, the need for TCR-2 also includes Phase 6.2 and 6.3 development efforts that result in weapons modifications or alterations. The second requirement, stated explicitly in the 1994 Nuclear Posture Review (NPR) and reaffirmed in the 2002 NPR, is to maintain the capability to design a new weapon system, if necessary. The test capability needs arising from these two overarching requirements are to support weapon design and development efforts at Sandia and to maintain the ability to qualify weapons to the Military Characteristics (MCs) and Stockpile-to-Target-Sequence (STS). The third requirement driving Sandia test capabilities is the need to develop and validate weapon-related models. Sandia has embarked on a comprehensive modeling and simulation effort under the Advanced Simulation and Computing (ASC) Campaign. To be successful, this campaign requires significant test support to aid the development, validation, and application of models.

In addition, TCR-2 is consistent with the preferred alternative for Complex Transformation and is fundamental to the transformation of the complex to be more responsive and cost effective. The requested investments will maintain Sandia's ability to consistently achieve NNSA defense program objectives as the "engineering lab of the complex". TCR-2 is integral to Sandia's role in increasing confidence in the warhead designs and demonstration of a responsive infrastructure that will enable a reduction in total stockpile size. TCR-1 and TCR-2 are fully integrated into RRW plans and requirements.

Project Scope

The planned scope includes revitalizing the following test capabilities:

1. 10,000 FT Rocket Sled Track, includes but not limited to: A) Replacement of the damaged track-side cabling, instrumentation, and AC power boxes. B) Renovation of buildings 6736, 6741, 6742, 6743, 6744, 6745, 6746, 6747 and 6751, to restore them to a maintainable condition and removal of substandard buildings from the stockpile. C) Upgrade of the target handling area, including the addition of utilities and target preparation slabs, and target demolition areas. D) Site improvements to include drainage, grading, and paving along the south 5,000 ft of the track, track repairs in general. E) Add a 195-ft track extension to preclude damaging the tracks again while testing.

2. Centrifuge Complex (Building 6526) includes as a minimum: A) Construct a new facility approximately 2,380 sf (±10%) addition to Building 6526 to consolidate work/storage spaces now located in substandard buildings that will be demolished. B) Renovate Building 6526 (indoor centrifuge) to include security and code compliance upgrades. C) Improvements to the general site and infrastructure to address water and sewer needs, paving, soil contamination (hydraulic fluid), data acquisition/controls, and demolition of substandard buildings. D) Construct a 383-sf (± 10%) new oil reserve Building (6523E).

3. Mechanical (Dynamic) Shock Facility (Building 6570) includes as a minimum: A) Upgrade and extension of the 18-inch actuator track to support higher-speed (400-ft/sec) testing. B) Upgrade (e.g., foundation) and extension of the 12-inch actuator track to support higher-speed (320-ft/sec) testing. C) Addition of a new air gun assembly with integrated controls and pulse shaping capabilities to provide tailored 1,000-ft per sec component testing capabilities. D) Addition of a 4,250 sf (±10%) Test Arena to support the track extensions, operation of the actuators and air gun, and deployment of advanced measurement/diagnostic technologies for subsystem and component testing. E) Renovation of Building 6570 to restore it to a maintainable condition. F) Replacement of the dilapidated compressor equipment building (6571).G) Restoration of pneumatic power system.

4. Vibro-Acoustics and Mass Properties Facility (Building No. 6560 and 6610): Includes as a minimum: A) Renovation of Buildings 6560 and 6610 to restore the facilities to a maintainable state. B) Construction of 2,400 sf *(*±10%*)* of additions to Building 6560 to house building electrical and mechanical systems and provide for test article handling and staging. C) Provision of site improvements, including grading, drainage, and paving. D) Replace aging test equipment, controls, and data acquisition systems.

5. Aero-sciences Facility (Building 865): Replace compressed air tanks; modify flow conditioning for Tri-sonic Wind Tunnel. Replace heater power and control for Hypersonic Wind Tunnel. Perform minor targeted facilities modifications to address operational efficiency needs.

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

The project is being conducted in accordance with the requirements in DOE O 413.3A Program and Project Management for the Acquisition of Capital Assets and DOE M413.3-1, Project Management for the Acquisition of Capital Assets, and all appropriate project management requirements will be met.

5. Financial Schedule

(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED			
FY 2005	1,589	1,589	8
FY 2006	4,430	4,430	2,184
FY 2007	3,064	3,064	2,102
FY 2008	(2,200)[a]	(2,200)	1,829
FY 2009	0	0	760
Total, PED (PED no. 05-D-140)	6,883	6,883	6,883
Construction[b]			
FY 2009	3,200	3,200	3,000
FY 2010	6,276	6,276	6,476
FY 2011	28,224	28,224	24,200
FY 2012	0	0	3,700
FY 2013	0	0	324
Total, Construction	37,700	37,700	37,700
Total, TEC	44,583	44,583	44,583

[a] $2,200,000 from PED project, 05-D-140.02 was utilized as use of prior year balances offset to the Weapons Activity Appropriation in FY 2008.

[b] These are based on the CD-2A cost estimates and therefore preliminary. Approval of CD-2B will establish the performance baseline cost. Use of construction funds will authorized upon approval of CD-3.

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Other Project Cost (OPC)			
OPC except D&D			
FY 2004	1,552	1,552	1,552
FY 2005	1,976	1,976	1,976
FY 2006	1,477	1,477	1,477
FY 2007	819	819	819
FY 2008	227	227	227
FY 2009	223	223	223
FY 2010	248	248	248
FY 2011	378	378	378
FY 2012	225	225	225
FY 2013	375	375	375
Total, OPC except D&D	7,500	7,500	7,500
D&D			
FY 2010	347	347	347
FY 2011	108	108	108
Total, D&D	455	455	455
OPC			
FY 2004	1,552	1,552	1,552
FY 2005	1,976	1,976	1,976
FY 2006	1,477	1,477	1,477
FY 2007	819	819	819
FY 2008	227	227	227
FY 2009	223	223	223
FY 2010	595	595	595
FY 2011	486	486	486
FY 2012	225	225	225
FY 2013	375	375	375
Total OPC	7,955	7,955	7,955
Total Project Cost (TPC)			
FY 2004	1,552	1,552	1,552
FY 2005	3,565	3,565	1,984
FY 2006	5,907	5,907	3,661
FY 2007	3,883	3,883	2,921
FY 2008	(1,973)	(1,973)	2,056
FY 2009	3,423	3,423	3,983
FY 2010	6,871	6,871	7,071
FY 2011	28,710	28,710	24,686
FY 2012	225	225	3,925
FY 2013	375	375	699
Total, TPC	52,538	52,538	52,538

6. Details of Project Cost Estimate

(dollars in thousands)

	Current[a] Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED)			
Design	5,853	NA	NA
Contingency	1,030	NA	NA
Total, PED (PED no. 05-D-140)	6,883	9,083	NA
Construction		NA	NA
Site Preparation	7,688	NA	NA
Equipment	3,976	NA	NA
Other Construction	22,978	NA	NA
Contingency	3,058	NA	NA
Total, Construction	37,700	NA	NA
Total, TEC	44,583	NA	NA
Contingency, TEC	4,088	NA	NA
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning & Conceptual Design[b]	262	NA	NA
Start-Up	6,859	NA	NA
Contingency	379	NA	NA
Total, OPC except D&D	7,500	NA	NA
D&D			
D&D	433	NA	NA
Contingency	22	NA	NA
Total, D&D	455	NA	NA
		NA	NA
Total, OPC	7,955	NA	NA
Contingency, OPC	401	NA	NA
Total, TPC	52,538	NA	NA
Total, Contingency	4,489	NA	NA

7. Schedule of Project Costs

For schedule of project costs, see Section 5, “Financial Schedule.”

[a] All costs are preliminary, pending approval of the CD-2, upon which the project cost and schedule will be established.

[b] The cost for the conceptual design was included in the Phase 1. The project was split in two phases after CD-0 approval.

8. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	4QFY BY2012
Expected Useful Life (number of years)	20
Expected Future Start of D&D (fiscal quarter)	3QFY 2031

(Related Funding requirements)[a]

(dollars in thousands)

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

9. Required D&D Information

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

Name(s) and site location(s) of existing facility(s) to be replaced:
Buildings: 6571, 6562, 6563, 6520A&B, 6523 and 6523A&C, 6523D Pad, 6524, 6523CAN, 6741A&C, 6742F&G, 6743C&D&J, 6747, 6751, Portion of Building 6560; B) Transportainers (TP)-74, TP-75, and TP-146; C) Storage Structure OSB-19, OSB-00 and OSB-20, and Storage Building 9925G; D) the Oil Cooler and associated footings.

The D&D will be accomplished using funds from the Readiness in Technical Base and Facilities, sponsored by Defense Programs, National Nuclear Security Administration. D&D of existing facilities will commence in FY 2011 and completed by 4Q FY 2012.

10. Acquisition Approach (formerly Method of Performance)

Renovations: Design**:** - Firm Fixed-Price (FFP), best value procurement; A/E. Construction: - Well-defined construction packages: competitively bid, FFP, best value procurement. - Undefined construction packages: competitively bid, FFP, best value procurement or use existing T&M contracts.

New Construction: (Experimental Science Complex (ESC)): Design and Construction**:** - Design-Bid-Build, FFP, best value procurement; A/E and GC. Occupancy (equipment and personnel):

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

[a] These are preliminary costs, actual costs will be not available until the project completion.

08-D-806, Ion Beam Laboratory Project
Sandia National Laboratories, New Mexico
Project Data Sheet (PDS) is for Construction

1. Significant Changes

The most recent DOE O 413.3A approved Critical Decision is CD-3, Approve Construction, which was approved in December 31, 2007. The Total Project Cost is $39,636,000.

A Federal Project Director with certification level IV has been assigned to this project.

This PDS is new for Design/Build Construction.

For FY 2008, the Congress appropriated $9,910,706 for this project within the Engineering Campaign. Therefore, the project baseline was approved consistent with the Congressional direction and the capital acquisition procurement process will be initiated in FY 2008.

2. Design, Construction, and D&D Schedule

(fiscal quarter or date)

	CD-0	CD-1 (Design Start)	(Design/PED Complete)	CD-2	CD-3 (Construction Start)	CD-4 (Construction Complete)	D&D Start	D&D Complete
FY 2009	10/04/2007	10/04/2007	1Q FY 2011	12/31/2007	12/31/2007	3Q FY 2012	2Q FY 2010	1Q FY 2012

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

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 2009	NA	34,813	34,813	1,283	3,540	4,823	39,636	

4. Project Description, Justification, and Scope

Project Description

Sandia National Laboratories will construct a replacement facility for the Ion Beam Laboratory (IBL) facility at Sandia New Mexico. The IBL facility will provide a standalone capability for the use of accelerated ions for research, development, and testing.

The Ion Beam Laboratory project is a replacement and upgrade of an existing laboratory which will completely replace that facility. The project will provide the following:

- design and construction of a replacement building and building systems;
- relocation of key accelerators and other equipment from the current facility;
- upgrades to key pieces of equipment;
- one new accelerator;
- one new focused ion beam implanter;
- replacement office space for staff;
- space to optimize beam line layout, equipment configurations and safety and operational efficiencies to allow for simultaneous set up and test;
- and communications cabling and network electronics to support unclassified and classified ultra-high speed local computing in inter-connectivity to supercomputing resources.

The replacement building is office and light duty high bay structure. The building size and shape is dictated by the accelerator, beam line, and equipment layout and shielding and separation requirements. This configuration has been modeled for radiation exposures to be As Low as Reasonably Achievable (ALARA). The facility will provide office space and laboratory space for seven accelerators and associated controls, including areas for classified beam line work.

Project Justification

These ion beam capabilities directly support the NNSA Engineering Campaign mission and goals to provide validated models and simulation tools that improve surety technologies, radiation hardening capabilities, microsystems and microtechnology production, component and material lifetime assessments, and predictive aging models and surveillance diagnostics.

The nuclear weapons program drives the capacity requirements for the IBL. The current accelerator usage, mode of operation and responsiveness of the existing facility can be extrapolated to provide future needs. The facility supports approximately 40 people with 15 in residence. The tandem accelerator is used approximately 275 days per year and the single-ended accelerator is used approximately 250 days per year. Accelerator combined use provided 350 days per year use in support of the NNSA QASPR program, product development, and neutron generator production and certification.

Current sizing and configuration of the existing IBL restrict both availability and use of the facility. Full utilization requires operating two overlapping shifts of 12 hour days. Experimentation, set up and maintenance must be conducted in serial fashion rather than simultaneously. As a result facility

operations cannot be optimized and are inefficient. Current capacity is considered an absolute minimum for the future program requirements and does nothing to increase responsiveness or capability.

The current IBL is a corrugated metal building built in 1956 as a parachute folding facility. This long thin building was not designed for the function now being performed there, and the accelerators and beam lines are limited in both their configuration and use by the shape of this facility. The building is subsiding and as a result the doors are sandbagged against rain and snow. The roof leaks, building systems are failing and maintenance costs are high.

The capital expenditures requested for the IBL facility project will:

1. **Mitigate operational risks by replacing the temporary building that currently houses the IBL facility.** The current 50-year-old IBL facility is located in Building 884 at Sandia National Laboratories.

2. **Improve existing research capabilities by optimizing layout and modernizing lab systems.** Improvements to the layout of the various accelerators and beamlines in the new building will be made to maximize the usefulness of these tools.

3. **Extend research capabilities by providing required shielding to enable new techniques to be used.** Improved shielding of one of the larger accelerators and associated target room will create a large part of this improved utility that will enable nuclear reactions to be used that are currently precluded due to excessive radiation.

4. **Provide new capabilities by upgrading equipment** required for micro- and nanoscale applications.

5. **Increase the utility and operational efficiencies of the IBL facility** by replacing older accelerators and other equipment, providing an optimized layout that compartmentalizes experimental areas and accommodates classified meetings

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

5. Financial Schedule

(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED[a]			
Total, PED	NA	NA	NA
Construction[b]			
FY 2008[c]	9,911[d]	10,000	1,270
FY 2009	10,014	10,014	12,500
FY 2010	13,813	13,813	10,700
FY 2011	1,000	1,000	8,700
FY 2012	0	0	1, 568
Total, Construction	34,738	34,738	34,738
Total, TEC	34,738	34,738	34,738
Other Project Cost (OPC)			
OPC except D&D			
FY 2007	333	333	187
FY 2008	225	225	345
FY 2009	160	160	155
FY 2010	240	240	255
FY 2011	325	325	107
FY 2012	0	0	234
Total, OPC except D&D	1,283	1,283	1,283
D&D			
FY 2008	375	375	230
FY 2009	440	440	250
FY 2010	1,160	1,160	850
FY 2011	1,565	1,565	2,210
FY 2012	0	0	0
Total D&D	3,540	3,540	3,540

[a] The project will be procured through a design-build strategy; therefore, design funds are included in the Total Project Cost/Total Estimated Cost.

[b] Initial year obligations include commitment of funds for long-lead procurements.

[c] Funding in FY 2008 was appropriated under the Engineering Campaign. Future funding is requested under the RTBF Program.

[d] Original FY 2008 appropriation was $10,000,000. This was reduced by $89,294 as a result of a mandatory rescission in the FY 2008 Consolidated Appropriations Act (P.L. 110-161).

	(dollars in thousands)		
	Appropriations	Obligations	Costs
OPC			
FY 2007	333	333	187
FY 2008	600	600	575
FY 2009	600	600	405
FY 2010	1,400	1,400	1,105
FY 2011	1,890	1,890	2,317
FY 2012	0	0	234
Total OPC	4,823	4,823	4,823
Total Project Cost (TPC)			
FY 2007	333	333	187
FY 2008	10,511	10,511	1,845
FY 2009	10,614	10,614	12,905
FY 2010	15,213	15,213	11,805
FY 2011	2,890	2,890	11,017
FY 2012	0	0	1,802
Total, TPC	39,561	39,561	39,561

6. Details of Project Cost Estimate

	(dollars in thousands)		
	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)	34,813	NA	34,813
		NA	
Design / Build		NA	
Design	622	NA	622
Contingency	68	NA	68
Total, Design / Build	690	NA	690
Construction			
Site Preparation	250	NA	250
Special Equipment[a]	13,598	NA	13,598
Equipment	165	NA	165
Other Construction	16,080	NA	16,080
Contingency	4,030	NA	4,030
Total, Construction	34,123	NA	34,123
		NA	
Total, TEC	34,813	NA	34,813
Contingency, TEC	4,098	NA	4,098

[a] Special equipment includes major equipment purchases ($8,687,000) installation and fit up ($2,425,000), relocation of existing Tandem accelerator ($753,000), and relocation of other existing equipment ($1,732,000).

	(dollars in thousands)		
	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Other Project Cost (OPC)			
OPC except D&D		NA	
Conceptual Planning		NA	
Conceptual Design		NA	
Start-Up	1,189	NA	1,189
Contingency	94	NA	94
Total, OPC except D&D	1,283	NA	1,283
D&D		NA	
D&D	2,804	NA	2,804
Contingency	736	NA	736
Total, D&D	3,540	NA	3,540
Total, OPC	4,823	NA	4,823
Contingency, OPC	830	NA	830
Total, TPC	39,636	NA	39,636
Total, Contingency	4,928	NA	4,928

7. Schedule of Project Costs

For schedule of project costs, see Section 5, “Financial Schedule.”

8. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	3QFY 2012
Expected Useful Life (number of years)	20
Expected Future Start of D&D (fiscal quarter)	NA

(Related Funding requirements)

	(dollars in thousands)			
	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations*	160	NA	3,200	NA
Maintenance	140	NA	2,800	NA
Total, Operations & Maintenance	300	NA	6,000	NA

* Average annual facility operating costs for material and labor, including systems engineering, infrastructure operations, custodial, and maintenance and sub-sites management.

9. Required D&D Information

D&D Information Being Requested	Square Feet
Area of new construction	27,000
Area of existing facility(s) being replaced	15,061
Area of additional D&D space to meet the "one-for-one" requirement	NA *

* Sandia's current space bank covers new construction to meet the one-for-one requirement.

10. Acquisition Approach (formerly Method of Performance)

The IBL building has been proposed as a design/build project. All project decisions, reviews, costs estimates, schedules and scope documents are developed around this strategy.

Award of all of the proposed procurements would be based on a Best Value Award Determination, with the exception of some commercial, off-the-shelf tool purchases that may be competed and awarded based on low price. Best value award source selection is used to determine the proposal which offers the best tradeoff between price/cost and performance capabilities and the probability of success. Safety and Quality are considered integral performance factors. Factors used for evaluation may include performance capability, technical elements, past performance, total life cycle cost, experience, and financial capability and safety records.

SNL policy is to use commercial-like best value source selection practices and to select proposals, and offers on the best combination of price/cost and qualitative merits. Fairness is achieved by use of published evaluation criteria and a defined source selections strategy. This selection process results in positive business relationships between the supplier community, SNL and the DOE.

08-D-804, TA-55 Reinvestment Project – Phase I
Los Alamos National Laboratory (LANL), Los Alamos, New Mexico
Project Data Sheet (PDS) is for Construction

1. Significant Changes

The most recent DOE O 413.3A approved Critical Decision (CD) is CD-2, Approve Performance Baseline for TA-55 Reinvestment Project (TRP) Phase 1, which was approved on November 22, 2006 with a Total Project Cost (TPC) of $26,700,000. This project now includes only two of the subprojects previously covered under this data sheet. TA-55 Reinvestment Project Phases II and III will be initiated in subsequent budget requests.

A Federal Project Director with certification level II has been assigned to this project.

This PDS is an update of the FY 2008 PDS and is for the first phase of the TA-55 Reinvestment Project.

2. Design, Construction, and D&D Schedule

(fiscal quarter or date)

	CD-0	CD-1 (Design Start)	(Design/PED Complete)	CD-2	CD-3 (Construction Start)	CD-4 (Construction Complete)	D&D Start	D&D Complete
FY 2008		1QFY2007	4QFY2007		2QFY2008	4QFY2011	N/A	N/A
FY 2009	3/23/2005	9/06/2006	2QFY2008	11/22/06	2QFY2008	1QFY2010	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[a], Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2008			21,600	7,000	N/A		28,600
FY 2009	4,300	14,985	19,285	5,100	N/A	5,100	24,385

[a] The previous TEC included PED for the now separate TA-55 Reinvestment Project Phase II.

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 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. The TA-55 Reinvestment Project Team identified 20 subprojects at the pre-conceptual stage for upgrades and modernization through this project. The subprojects were selected utilizing a risk-based prioritization process that considered the current condition of the equipment, risk of failure to the worker, the environment and the public, and risk of failure to programmatic and facility operations.

During Conceptual Design, the project continued to refine the prioritization method and subprojects. Defense Program's Complex Transformation initiatives combined with impacts to available/anticipated funding has led to development of a phased acquisition strategy for the TRP project. To meet mission need objectives within the budgetary and strategic context constraints, the TRP project is proposed for execution as three separate, distinct capital line item projects, TRP Phase I, TRP Phase II, and TRP Phase III.

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

TRP Phase I Scope: TRP Phase I consists of two (2) subprojects:

1. Replacement of Cooling Towers
2. Replacement of Chiller Equipment

The project is being conducted in accordance with the project management requirements in DOE O 413.3A and DOE M 413.3-1, Program and Project Management for the Acquisition of Capital Assets, and all appropriate project management requirements have been met.

5. Financial Schedule

(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED			
FY 2006	2,000	0	0
FY 2007	1,500	3,500	1,744
FY 2008	800	800	2,321
FY 2009	0	0	235
Total, PED (06-D-140)	4,300[a]	4,300	4,300
Construction			
FY 2008	5,885[b]	5,885	5,000
FY 2009	7,900	7,900	7,900
FY 2010	1,200	1,200	2,085
Total, Construction	14,985	14,985	14,985
TEC			
FY 2006	2,000	0	0
FY 2007	1,500	3,500	1,744
FY 2008	6,685	6,685	7,321
FY 2009	7,900	7,900	8,135
FY 2010	1,200	1,200	2,085
Total, TEC[c]	19,285	19,285	19,285
Other Project Cost (OPC)			
OPC except D&D			
Prior Years	2,500	2,500	2,500
FY 2007	1,274	1,274	1,274
FY 2008	200	200	200
FY 2009	200	200	200
FY 2010	926	926	926
Total, OPC except D&D	5,100	5,100	5,100
D&D			
FY2010	0	0	0
Total, D&D	0	0	0

[a] The amount of PED funding associated with this project is lower than previously reported because some of that funding is now associated with Phase II. See project 06-D-140 for details.

[b] Original FY 2008 appropriation was $5,938,000. This was reduced by $53,023 as a result of a mandatory rescission in the FY 2008 Consolidated Appropriations Act (P.L. 110-161).

[c] The previous TEC included PED for the now separate TA-55 Reinvestment Project Phase II.

	(dollars in thousands)		
	Appropriations	Obligations	Costs
OPC			
Prior Years	2,500	2,500	2,500
FY 2007	1,274	1,274	1,274
FY 2008	200	200	200
FY 2009	200	200	200
FY 2010	926	926	926
Total, OPC	5,100	5,100	5,100
Total Project Cost (TPC)			
Prior Years	4,500	2,500	2,500
FY 2007	2,774	4,774	3,018
FY 2008	6,885	6,885	7,521
FY 2009	8,100	8,100	8,335
FY 2010	2,126	2,126	3,011
Total, TPC	24,385	24,385	24,385

6. Details of Project Cost Estimate

	(dollars in thousands)		
	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED)			
Design	4,300[a]	6,500	6,500
Contingency	0	0	0
Total, PED (06-D-140)	4,300	6,500	6,500
Construction			
Site Preparation	0	0	0
Equipment	6,000	6,000	6,000
Other Construction	8,000	8,000	8,000
Contingency	985[b]	1,100	1,100
Total, Construction	14,985	15,100	15,100
Total, TEC	19,285	21,600	21,600
Contingency, TEC	985	1,100	1,100
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning & Conceptual Design	3,500	5,500	3,500
Start-Up	1,200	1,100	1,200
Contingency	400	400	400
Total, OPC except D&D	5,100	7,000	5,100

[a] The previous estimate for total PED included work for the now separate TA-55 Reinvestment Project, Phase II.

[b] Contingency reduction includes rescission from FY 2008 appropriation.

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
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	5,100	7,000	5,100
Contingency, OPC	400	400	400
Total, TPC	24,385	28,600	26,700
Total, Contingency	1,385	1,500	1,500

7. Schedule of Project Costs

For schedule of project costs, see Section 5, "Financial Schedule."

8. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	1QFY2010
Expected Useful Life (number of years)	25
Expected Future Start of D&D of this capital asset (fiscal quarter)	TBD

(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
Maintenance		N/A		N/A
Total, Operations & Maintenance		N/A		N/A

9. Required D&D Information

As the project is an investment in the infrastructure systems of an existing facility, demolition activities are not required as part of this project.

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

Name(s) and site location(s) of existing facility(s) to be replaced: None. No new footprint is being added to the site.

10. Acquisition Approach

Design and Construction Management will be implemented by the Los Alamos National Security 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. TRP Subprojects will be implemented via LANL-issued final design/construction contracts based on detailed performance requirements/specifications developed during the preliminary design phase.

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

1. Significant Changes

The most recent DOE O 413.3A approved Critical Decision (CD) is CD- 2, *Approved Performance Baseline*, for the High Explosive Pressing Facility (HEPF) that was approved on November 21, 2006 with a Total Project Cost (TPC) of $80,578,000. The Total Project Cost is expected to increase to $84,987,000 due to the late receipt of FY 2007 funding and recommendations of an external independent review. This projected cost increase has not yet been approved as a validated baseline.

A Federal Project Director has been assigned to this project with Project Management Professional (PMP) credentials and DOE Level II certification.

The cost and schedule excursions shown in sections 2 and 3 reflect lessons learned on the Highly Enriched Uranium Materials Facility and to reflect late receipt of FY 2007 PED funding. The primary changes are a reduction in the need for FY 2009 funding, with a commensurate increase in FY 2010 funding plus additional expenses due to the extended schedule.

This PDS is an update of the FY 2008 PDS.

2. Design, Construction, and D&D Schedule

(fiscal quarter or date)

	CD-0	CD-1 (Design Start)	(Design/PED Complete)	CD-2	CD-3 (Construction Start)	CD-4 (Construction Complete)	D&D Start	D&D Complete
FY 2008	8/8/2003	7/19/2005	3QFY2007	11/21/2006	4QFY2008	2QFY2011	N/A	N/A
FY 2009	8/8/2003	7/19/2005	4QFY2008	11/21/2006	4QFY2008	3QFY2012	N/A	N/A

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

3. Baseline and Validation Status

(dollars in thousands)

	TEC, PED	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2008	8,146	68,140	76,286	4,292		4,292	80,578
FY 2009	8,146	72,334	80,480	4,507		4,507	84,987[a]

4. Project Description, Justification, and Scope

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

The facility improves safety, quality and efficiency of material movement. It reduces personnel restrictions and eliminates human reassurance program (HRP) requirements by its location outside the Protected Area. Benefits also include reduced administrative safety controls through improved engineering controls, and reduced maintenance downtime.

The new facility will be located in the Limited Area of the Pantex Plant, and replaces existing operations in buildings 12-17, 12-21A and 12-63. The facility will be designed to produce main charge pressing hemispheres to meet FY 2012 capacity requirements and will consist of approximately 45,000 square feet of space. Proposed areas include the main pressing facility, a magazine storage area, and a connecting ramp.

The project is being conducted in accordance with the project management requirements in DOE O 413.3A and DOE M 413.3-1, 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.

[a] Current TPC is $80,578,000. A BCP is scheduled for March 2008 to increase the TPC to $84,987,000.

5. Financial Schedule

(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED			
FY 2004	1,200	1,200	0
FY 2005	1,488	1,488	402
FY 2006	1,980	1,980	2,112
FY 2007	3,478	3,478	3,055
FY 2008	0	0	2,577
Total, PED (PED 04-D-103.2)	8,146	8,146	8,146
Construction			
FY 2006	0	0	0
FY 2007	0	0	0
FY 2008	15,008[a]	15,008	15,008[b]
FY 2009	28,233	28,233	28,233
FY 2010	17,028	17,028	17,028
FY 2011	0	0	0
Total, Construction	60,269	60,269	60,269
TEC			
FY 2004	1,200	1,200	0
FY 2005	1,488	1,488	402
FY 2006	1,980	1,980	2,112
FY 2007	3,478	3,478	3,055
FY 2008	15,008	15,008	17,585
FY 2009	28,233	28,233	28,233
FY 2010	17,028	17,028	17,028
FY 2011	0	0	
Total, TEC	68,415[c]	68,415	68,415

[a] Original FY 2008 appropriation was $15,143,000. This was reduced by $135,218 as a result of a mandatory rescission in the FY 2008 Consolidated Appropriations Act (P.L. 110-161).

[b] Because a new baseline for this project has not yet been approved, the cost profile is to be determined.

[c] This funding profile does not cover the project costs shown in Table 6. The Department will address the shortfall during the FY 2010 and FY 2011 budget preparation process.

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Other Project Cost (OPC)			
OPC except D&D			
FY 2004	860	860	860
FY 2005	281	281	281
FY 2006	158	158	158
FY 2007	200	200	200
FY 2008	150	150	150
FY 2009	160	160	160
FY 2010	440	440	440
FY 2011	1,800	1,800	1,800
FY 2012	243	243	243
Total, OPC Except D&D	4,292	4,292	4,292
D&D	0	0	0
Total D&D	0	0	0
FY 2004	860	860	860
FY 2005	281	281	281
FY 2006	158	158	158
FY 2007	200	200	200
FY 2008	150	150	150
FY 2009	160	160	160
FY 2010	440	440	440
FY 2011	1,800	1,800	1,800
FY 2012	243	243	243
Total, OPC	4,292	4,292	4,292
Total Project Cost (TPC)			
FY 2004	2,060	2,060	860
FY 2005	1,769	1,769	683
FY 2006	2,138	2,138	2,270
FY 2007	3,678	3,678	3,255
FY 2008	15,158	15,158	17,735
FY 2009	28,393	28,393	28,393
FY 2010	17,468	17,468	17,468
FY 2011	1,800	1,800	1,800
FY 2012	243	243	243
Total, TPC	72,707	72,707	72,707

6. Details of Project Cost Estimate

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED)			
Design	7,144	7,122	7,122
Contingency	1,002	1,024	1,024
Total, PED	8,146	8,146	8,146
Construction			
Site Preparation	0	0	0
Equipment	6,589	7,816	7,816
Other Construction	58,087	51,579	51,579
Contingency	7,658	8,745	8,745
Total, Construction	72,334	68,140	68,140
Total, TEC	80,480	76,286	76,286
Contingency, TEC	8,660	9,769	9,769
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	1,166	1,166	1,166
Conceptual Design	998	998	998
Other	161	161	161
Start-Up	1,700	1,485	1,485
Contingency	482	482	482
Total, OPC except D&D	4,507	4,292	4,292
D&D			
D&D	0	0	0
Contingency	0	0	0
Total, D&D	0	0	0
Total, OPC	4,507	4,292	4,292
Contingency, OPC	482	482	482
Total, TPC	84,987	80,578	80,578
Total, Contingency	9,142	10,251	10,251

7. Schedule of Project Costs

For schedule of project costs, see Section 5, “Financial Schedule.”

8. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	3QFY2012
Expected Useful Life (number of years)	30
Expected Future Start of D&D of this capital asset (fiscal quarter)	N/A

(Related Funding requirements)

(dollars in thousands)

	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	1,000	1,000	1,000	1,000
Maintenance	400	400	460	460
Total, Operations & Maintenance	1,400	1,400	1,460	1,460

9. Required D&D Information

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

Name(s) and site location(s) of existing facility(s) to be replaced: N/A

10. Acquisition Approach

Various alternatives were considered to include a Federal led or utilizing the current Management and Operating contractor, BWXT Pantex, LLC. It was determined that the U.S. Army Corps of Engineers (USACE) would be utilized for the construction contract administration and Title III construction management services. Due to the specialized functionality associated with this project, BWXT Pantex, LLC is responsible for Title I and II design services. BWXT Pantex will support the USACE during Title III, as required. The USACE and BWXT Pantex project management processes will be defined and integrated in accordance with the Roles and Responsibilities in the DOE approved Project Execution Plan.

08-D-801, High Pressure Fire Loop Zone 12 South MAA
Pantex Plant, Amarillo, Texas
Project Data Sheet (PDS) is for Construction

1. Significant Changes

The most recent DOE O 413.3A approved Critical Decision (CD) is CD-2, *Approved Performance Baseline*, for the High Pressure Fire Loop Zone 12 South MAA that was approved on December 1, 2006 with a Total Project Cost (TPC) of $34,980,000.

A Federal Project Director has been assigned to this project with DOE Level III certification.

The FY 2009 funds requested for this project are $2,000,000.

This PDS is an update of the FY 2008 PDS.

2. Design, Construction, and D&D Schedule

(fiscal quarter or date)

	CD-0	CD-1 (Design Start)	(Design/PED Complete)	CD-2	CD-3 (Construction Start)	CD-4 (Construction Complete)	D&D Start	D&D Complete
FY 2008	9/15/04	12/23/05	4QFY2007	12/1/06	1QFY2008	1QFY2011	N/A	N/A
FY 2009	9/15/04	12/23/05	4QFY2007	12/1/06	1QFY2008	2QFY2011	N/A	N/A

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

3. Baseline and Validation Status

(dollars in thousands)

	TEC, PED	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2008	1,686	31,910	33,596	1,384		1,384	34,980
FY 2009	1,686	31,910	33,596	1,384		1,384	34,980

4. Project Description, Justification, and Scope

The High Pressure Fire Loop (HPFL) – Zone 12 South Material Access Area (MAA) project has been identified as a high priority project in the 2006 Pantex Plant Ten Year Comprehensive Site Plan (TYCSP).

The purpose of the HPFL project is to provide a reliable fire protection system to support Manufacturing and Infrastructure operations. The HPFL is a Safety-Class System as defined in the Authorization Basis and its Critical Safety function is to support the fire suppression systems to mitigate the consequence of a fire event and thereby prevent fires from progressing to more severe events. Supplying the necessary amount of water to the fire suppression systems performs this function. The HPFL is designed to provide water at a pressure, flow rate, and quantity to meet the demands of the fire suppression system in each facility. Additionally, this project will minimize DOE's risks associated with failures and eliminate the current deferred maintenance for the system.

Failures in the existing system have increased over the past several years. More than a dozen failures have occurred since 1995 in the HPFL system. Two of these failures were located in the section of Zone 12 South HPFL involved in this project. Each failure resulted in downtime for the production facilities.

This project addresses those areas of the HPFL Zone 12 South Material Access Area system that are of questionable reliability due to aging, incompatible materials, and use of antiquated technologies. Specific areas to be addressed are:

- Pipe Line Replacement. Failures in the HPFL lines are occurring in the ductile iron sections that were installed in the 1970s and 1980s. This project will replace the ductile iron pipe loop, fire hydrants, and Post Indicator Valves (PIVs) that tie the loop to each facility lead-in. The scope does not include the pipe lead-in to each facility.

- Cathodic Protection Installation. The new PIVs, fire hydrants, and valves will have cathodic protection installed. The cathodic protection systems will prevent degradation of ferrous components in contact with the soil.

Installation of the new system will be buried parallel to the existing route when possible. Outages for facility tie-in and replacements will be coordinated with production to minimize facility outages. Road bores, where required, will be accomplished to avoid interruption of onsite transportation. Appropriate security and safety measures will be implemented to control access to the construction areas to prevent damage or injuries.

The project is being conducted in accordance with the project management requirements in DOE O 413.3A and DOE M 413.3-1, Program and Project Management for the Acquisition of Capital Assets, and all appropriate project management requirements have been met.

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

5. Financial Schedule

(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED[a]			
FY 2006	1,686	1,686	990
FY 2007	0	0	326
FY 2008	0	0	370
FY 2009	0	0	0
Total, PED (06-D-160-01)	1,686	1,686	1,686
Construction			
FY 2008	6,866[b]	6,866	6,866
FY 2009	2,000	2,000	2,000[c]
FY 2010	0	0	0
FY 2011	0	0	0
Total, Construction	8,866	8,866	8,866
TEC			
FY 2006	1,686	1,686	990
FY 2007	0	0	326
FY 2008	6,866	6,866	7,236
FY 2009	2,000	2,000	2,000
FY 2010	0	0	0
FY 2011	0	0	0
Total, TEC	10,552	10,552	10,552
Other Project Cost (OPC)			
OPC except D&D			
FY 2004	65	65	65
FY 2005	349	349	349
FY 2006	289	289	289
FY 2007	43	43	43
FY 2008	106	106	106
FY 2009	178	178	178
FY 2010	354	354	354
Total OPC, Except D&D	1,384	1,384	1,384
D&D	0	0	0
Total, D&D	0	0	0

[a] The TEC includes the cost of preliminary and final design ($1,686,000) which was appropriated in FIRP 06-D-160, Project Engineering and Design (PED).

[b] Original FY 2008 appropriation was $6,928,000. This was reduced by $61,863 as a result of a mandatory rescission in the FY 2008 Consolidated Appropriations Act (P.L. 110-161).

[c] The appropriations, obligations, and cost profiles for this project will be resolved in the FY 2010 and FY 2011 budget processes. The baseline of the project must be revised accordingly.

OPC			
FY 2004	65	65	65
FY 2005	349	349	349
FY 2006	289	289	289
FY 2007	43	43	43
FY 2008	106	106	106
FY 2009	178	178	178
FY 2010	354	354	354
Total, OPC	1,384	1,384	1,384
Total Project Cost (TPC)			
FY 2004	65	65	65
FY 2005	349	349	349
FY 2006	1,975	1,975	1,279
FY 2007	43	43	369
FY 2008	6,972	6,972	7,342
FY 2009	2,178	2,178	2,178
FY 2010	354	354	354
FY 2011	0	0	0
Total, TPC	11,936	11,936	11,936

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	1,686	1,686	1,686
Contingency	0	0	0
Total, PED	1,686	1,686	1,686
Construction			
Site Preparation	0	0	0
Equipment	0	0	0
Other Construction	26,857	26,560	26,857
Contingency	5,053	5,350	5,053
Total, Construction	31,910	31,910	31,910
Total, TEC	33,596	33,596	33,596
Contingency, TEC	5,053	5,053	5,053
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	77	77	77
Conceptual Design	615	615	615
Other (EIR)	125	125	125
Start-Up	458	458	458
Contingency	109	109	109

[a] The baseline for this project must be revised when funding is addressed in the FY 2010-2011 budget processes.

(dollars in thousands)

	Current Total Estimate[a]	Previous Total Estimate	Original Validated Baseline
Total, OPC except D&D	1,384	1,384	1,384
D&D			
D&D	0	0	0
Contingency	0	0	0
Total, D&D	0	0	0
Total, OPC	1,384	1,384	1,384
Contingency, OPC	109	109	109
Total, TPC	34,980	34,980	34,980
Total, Contingency	5,162	5,162	5,162

7. Schedule of Project Costs

For schedule of project costs, see Section 5, "Financial Schedule."

8. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	2Q FY 2011
Expected Useful Life (number of years)	40
Expected Future Start of D&D of this capital asset (fiscal quarter)	N/A

(Related Funding requirements)

(dollars in thousands)

	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate*	Previous Total Estimate
Operations	12	10	747	400
Maintenance	46	40	4,187	1,600
Total, Operations & Maintenance	58	50	4,934	2,000

* Includes escalation over the useful life of the project.

9. Required D&D Information

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

Name(s) and site location(s) of existing facility(s) to be replaced: N/A

10. Acquisition Approach

This project will be a design-bid-build acquisition. The design services (Title I and II) were accomplished by an outside A-E firm and the contract was administered by the Managing and Operating (M&O) Contractor (BWXT Pantex, LLC). The same A-E firm will perform Title III support services during construction. The construction services for this project will be performed by a construction contractor operating under a contract to be awarded on the basis of competitive bids. The M&O Contractor will administer the construction contract. The M&O Contractor will administer the Title III design services contract and perform the Construction management services. Best value practices will be used for all contracted services.

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 413.3A approved Critical Decision (CD) is CD-2A, Approval of Zero Liquid Discharge for the Radioactive Liquid Waste Treatment Facility. CD-2A was approved on November 22, 2006 with a Total Project Cost (TPC) for this portion A of the project of $9,579,000. The CD-1 approved preliminary cost range for the project is $82,000,000 to $104,000,000.

A Federal Project Director with certification level II has been assigned to this project.

This PDS is an update of the FY 2008 PDS. Significant changes include deferment of the new start for construction in FY 2007 due to the emergent conditions associated with the FY 2007 Year-Long Continuing Resolution. The Total Estimated Cost (TEC) and TPC for this project are preliminary point estimates consistent with previous budget requests. The project is scheduled for CD-2B in 2QFY2008 at which time a performance baseline will be established. Cost and schedule impacts to this project will be determined during the CD-2B process. D&D costs for the existing facility have been deleted and the site-banked square footage will be utilized.

2. Design, Construction, and D&D Schedule

(fiscal quarter or date)

	CD-0	CD-1 (Design Start)	(Design/PED Complete)	CD-2	CD-3 (Construction Start)	CD-4 (Construction Complete)	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

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-2A
FY 2007	
FY 2008	11/22/2006
FY 2009	11/22/2006

CD-2A – Approve Performance Baseline of Zero Liquid Discharge for the Radioactive Liquid Waste Treatment Facility.

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 2007			61,100	6,200	8,700		76,000	
FY 2008			72,600	15,000	9,000		96,600	
FY 2009[a]	11,100	61,410	72,510	15,000	0	15,000	87,510	

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 over 40 years old and their reliability is significantly diminishing. The recent transuranic storage tank failure demonstrated the inability of RLW components to remain in service beyond their design life and 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 to zero:
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

[a] **The TEC and TPC for this project are preliminary point estimates consistent with previous budget requests.** The project is scheduled for CD-2B in 2QFY2008 at which time a performance baseline will be established. D&D costs have been deleted. The site bank square footage will be utilized.

ultimately aimed at providing an RLW treatment capability that is safe, reliable, and effective for the next 30 years in support of primary missions at LANL. Additionally, the RLWTF Project is evaluating site LLW influent storage capability and the progress of other planned RLW infrastructure improvements which may adjust project scope.

FY 2008 and FY 2009 funding will be used for construction activities. No construction funding will be used until a CD-3, Approve Start of Construction, is approved.

The project is being conducted in accordance with the project management requirements in DOE O 413.3A and DOE M 413.3-1, Program and Project Management for the Acquisition of Capital Assets, and all appropriate project management requirements have been met.

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

5. Financial Schedule[a]

(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED			
FY 2006	3,000	3,000	362
FY 2007	8,100	8,100	6,020
FY 2008	0	0	4,718
Total, PED (06-D-140)	11,100	11,100	11,100
Construction			
FY 2007	0[b]	0	0
FY 2008	26,162[c]	26, 162	3,000
FY 2009	19,660	19,660	38,000
FY 2010	15,078	15,078	19,900
Total, Construction	60,900	60,900	60,900
TEC			
FY 2006	3,000	3,000	362
FY 2007	8,100	8,100	6,020
FY 2008	26,162	26,162	7,718
FY 2009	19,660	19,660	38,000
FY 2010	15,078	15,078	19,900
Total, TEC	72,000	72,000	72,000
Other Project Cost (OPC)			

[a] **The TEC and TPC for this project are preliminary point estimates consistent with previous budget requests.** The project is scheduled for CD-2B in 2QFY2008 at which time a performance baseline will be established.

[b] Due to the FY 2007 Continuing Resolution, $14,828,000 in FY 2007 construction funds were not allocated as planned.

[c] Original FY 2008 appropriation was $26,398,000. This was reduced by $235,718 as a result of a mandatory rescission in the FY 2008 Consolidated Appropriations Act (P.L. 110-161).

	(dollars in thousands)		
	Appropriations	Obligations	Costs
OPC except D&D			
Prior Years	5,000	5,000	4,900
FY 2008	1,200	1,200	1,100
FY 2009	2,500	2,500	2,700
FY 2010	2,500	2,500	2,500
FY 2011	3,800	3,800	3,800
Total, OPC except D&D	15,000	15,000	15,000
D&D			
FY 2011	0	0	0
FY 2012	0	0	0
Total, D&D	0	0	0
OPC			
Prior Years	5,000	5,000	4,900
FY 2008	1,200	1,200	1,100
FY 2009	2,500	2,500	2,700
FY 2010	2,500	2,500	2,500
FY 2011	3,800	3,800	3,800
FY 2012	0	0	0
Total, OPC	15,000	15,000	15,000
Total Project Cost (TPC)			
Prior Years	16,100	16,100	11,282
FY 2008	27,362	27,362	8,818
FY 2009	22,160	22,160	40,700
FY 2010	17,578	17,578	22,400
FY 2011	3,800	3,800	3,800
FY 2012	0	0	0
Total, TPC	87,000	87,000	87,000

6. Details of Project Cost Estimate[a]

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED)			
Design	9,000	9,000	N/A
Contingency	2,100	2,100	N/A
Total, PED	11,100	11,100	N/A
Construction			
Site Preparation	0	0	N/A
Equipment	0	0	N/A
Other Construction	48,200	48,200	N/A
Contingency	12,700	13,300	N/A
Total, Construction	60,900	61,500	N/A
Total, TEC	72,000	72,600	N/A
Contingency, TEC	14,800	15,400	N/A
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning & Conceptual Design	3,940	3,940	N/A
Start-Up	8,915	8,915	N/A
Contingency	2,145	2,145	N/A
Total, OPC except D&D	15,000	15,000	N/A
D&D			
D&D	0	6,624	N/A
Contingency	0	2,376	N/A
Total, D&D	0	9,000	N/A
Total, OPC	15,000	24,000	N/A
Contingency, OPC	2,145	4,521	N/A
Total, TPC	87,000	96,600	N/A
Total, Contingency	16,945	19,921	N/A

7. Schedule of Project Costs

For schedule of project costs, see Section 5, "Financial Schedule."

[a] **The TEC and TPC for this project are preliminary point estimates consistent with previous budget requests.** The project is scheduled for CD-2B in 2QFY2008 at which time a performance baseline will be established.

8. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	3QFY2011
Expected Useful Life (number of years)	30
Expected Future Start of D&D of this capital asset (fiscal quarter)	3QFY2041

(Related Funding requirements)

(dollars in thousands)

	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	18,957	22,600	568,700	678,000
Maintenance	3,723	3,100	111,700	93,000
Total, Operations & Maintenance	22,680	25,700	680,400	771,000

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	22,000
Area of existing facility(s) being replaced	0
Area of additional D&D space to meet the "one-for-one" requirement	22,000

Name(s) and site location(s) of existing facility(s) to be replaced: RLWTF East Annex, TA-50-001

10. Acquisition Approach

The ZLD system will be acquired through a firm-fixed price, design-build contract. Design services will be obtained through competitively awarded contracts using a combination of firm fixed price and cost reimbursable pricing methods. Construction will be accomplished using a firm fixed price contracting approach. The construction contract will be incrementally funded by annual appropriations.

07-D-140 Project Engineering and Design, RTBF
Various Locations
Project Data Sheet (PDS) is for PED multiple projects

1. Significant Changes

The most recent DOE O 413.3A approved Critical Decision (CD) for the Transuranic (TRU) Waste Facility Project is CD – 0 (Approve Mission Need) that was approved on February 7, 2006, with Total Project Cost Range of $20,000,000 to $60,000,000.

A Federal Project Director with certification level III has been assigned to the TRU Waste Facility project.

This PDS is an update of the FY 2008 PED PDS.

No funding was allocated to this project during the year-long continuing resolution in FY 2007. Thus, the cost of the project increased by $2,469,000 and its completion was delayed by one year. Also contributing to the cost increase were changes to address nuclear safety of this Hazard Category II nuclear facility.

2. Design, Construction, and D&D Schedule

(fiscal quarter or date)

	CD-0	CD-1 (Design Start)	(Design/PED Complete)	CD-2	CD-3 (Construction Start	CD-4 (Construction Complete)	D&D Start	D&D Complete
FY 2007	02/07/2006[a]	2QFY 07	4Q FY 2008	Various	Various	Various	Various	Various
FY 2008	02/07/2006	2QFY 07	4Q FY 2008	Various	Various	Various	Various	Various
FY 2009	02/07/2006	1Q FY 2008	4Q FY 2009	TBD[b]	TBD	TBD	TBD	TBD

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] Pertains to the TRU Waste CD-0 date only.

[b] Schedules are to be determined. Preliminary CD-4 schedule range is 4Q FY 2011 to 4Q FY 2012.

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 2006	TBD	NA	TBD	NA	NA	NA	NA
FY 2007	7,477	NA	7,477	NA	NA	NA	NA
FY 2008	7,477	NA	7,477	NA	NA	NA	NA
FY 2009	9,898	NA	9,898	NA	NA	NA	NA

4. Project Description, Justification, and Scope

This project provides for Architect-Engineering (A-E) services for National Nuclear Security Administration (NNSA) construction projects, allowing designated projects to proceed from conceptual design into preliminary design and final design. The design effort will be sufficient to assure project feasibility, define the scope, provide detailed estimates of construction costs based on the approved design and working drawings and specifications, and provide construction schedules, including procurements. The designs will be extensive enough to establish performance baselines and to support construction or long-lead procurements in the fiscal year in which line item construction funding is requested and appropriated.

Conceptual design studies are prepared for each project using Operations and Maintenance (O&M) funds prior to receiving design funding under a PED line item. These conceptual design studies define the scope of the project and produce a rough cost estimate and schedule.

The FY 2007 PED design projects are described below. While not anticipated, some changes may occur due to continuing conceptual design studies or developments occurring after submission of this data sheet. These changes will be reflected in subsequent years. Preliminary estimates for the cost of preliminary and final design and engineering efforts for each subproject are provided.
The final TEC and the Total Project Cost (TPC) for the project described below will be validated and the Performance Baseline will be established at Critical Decision 2 (CD-2), following completion of preliminary design.

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

07-01: Consolidate and Renovate Computing Facilities, Kansas City Plant, Kansas City

Fiscal Quarter				Total Estimated Cost (Design) Only ($000)	Preliminary Full Total Estimated Projection ($000)
A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Start		
2Q FY 2007	1Q FY 2007	2Q FY 2008	2Q FY 2011	1,977	22,200 – 27,000

Fiscal Year	Appropriations ($000)	Obligations ($000)	Costs ($000)
2007	0		

This project has been cancelled under the present planning associated with the Complex Transformation planning.

07-02: TRU Waste Facilities, Los Alamos National Laboratory

Fiscal Quarter				Total Estimated Cost (Design Only ($000)	Preliminary Full Total Estimated Cost Projection ($000)
A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
1Q FY 2008	4Q FY 2009	TBD	TBD	9,946	$ 20,000-$60,000

Fiscal Year	Appropriations	Obligations	Costs
2007	0	0	0
2008	2,452[a]	2,452	2,452
2009	7,446	7,446	7,446

The Department of Energy (DOE) signed an Order of Consent ("Consent Order") with the State of New Mexico, effective March 1, 2005. The Consent Order requires DOE to complete a "fence-to-fence" cleanup of Los Alamos National Laboratory (LANL) by December 29, 2015. "Fence-to-fence" means removal and/or remediation of contaminants that reside in the environment at LANL. As part of the Consent Order, the State of New Mexico has identified four Material Disposal Areas (MDAs) in TA-54. The current set of TRU waste storage and process facilities resides in MDA G. MDA G will undergo a phased closure, consistent with the Consent Order, to be completed by December 29, 2015. It will not be feasible, practical, or realistic to attempt to keep the TRU facilities operational in the midst of Area G closure activities. Therefore, the TRU waste management capability must be reconstituted, commissioned, and in operation at a location outside of the closure boundaries, before the corrective actions to close MDA G begins. Closure of MDA G is scheduled to start in FY 2012 and must be completed by December 29, 2015.

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

[a] Original FY 2008 appropriation was $2,474,000. This was reduced by $22,091 as a result of a mandatory rescission in the FY 2008 Consolidated Appropriations Act (P.L. 110-161).

5. Financial Schedule

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED			
FY 2007[a]	0	0	0
FY 2008	2,452[bc]	2,452	2,452
FY 2009	7,446	7,446	7,446
Total, PED	9,898	9,898	9,898
Construction			
FY 2008	NA	NA	NA
FY 2009	NA	NA	NA
FY 2010	NA	NA	NA
FY 2011	NA	NA	NA
Total, Construction	NA	NA	NA
TEC			
FY 2007	0	0	0
FY 2008	2,452	2,452	2,452
FY 2009	7,446	7,446	7,446
Total, TEC	9,898	9,898	9,898
Other Project Cost (OPC)			
OPC except D&D			
FY 2007	NA	NA	NA
FY 2008	NA	NA	NA
FY 2009	NA	NA	NA
Total, OPC except D&D	NA	NA	NA
D&D			
FY 2009	NA	NA	NA
Total, D&D	NA	NA	NA
OPC			
FY 2006	NA	NA	NA
FY 2007	NA	NA	NA
FY 2008	NA	NA	NA
FY 2009	NA	NA	NA
Total, OPC	NA	NA	NA
Total Project Cost (TPC)			
FY 2006	NA	NA	NA
FY 2007	NA	NA	NA

[a] No funds were allocated to this PED Line Item, during the year-long continuing resolution.

[b] These PED funds are entirely for the TRU Waste Facility Project at LANL.

[c] Original FY 2008 appropriation was $2,474,000. This was reduced by $22,091 as a result of a mandatory rescission in the FY 2008 Consolidated Appropriations Act (P.L. 110-161).

	(dollars in thousands)		
	Appropriations	Obligations	Costs
FY 2008	2,452	2,452	2,452
FY 2009	7,446	7,446	7,446
Total, TPC	9,898	9,898	9,898

6. Details of Project Cost Estimate

	(dollars in thousands)		
	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED)			
Design	8,432	4,500	NA
Contingency	1,466	1,000	NA
Total, PED	9,898	5,500	NA
Construction			
Site Preparation	NA	NA	NA
Equipment	NA	NA	NA
Other Construction	NA	NA	NA
Contingency	NA	NA	NA
Total, Construction	NA	NA	NA
Total, TEC	9,898	4,500	NA
Contingency, TEC	1,466	1,000	NA
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	NA	NA	NA
Conceptual Design	NA	NA	NA
Start-Up	NA	NA	NA
Contingency	NA	NA	NA
Total, OPC except D&D	NA	NA	NA
D&D[a]			
D&D	NA	NA	NA
Contingency	NA	NA	NA
Total, D&D	NA	NA	NA
Total, OPC	NA	NA	NA
Contingency, OPC	NA	NA	NA
Total, TPC	NA	NA	NA
Total, Contingency	NA	NA	NA

[a] Not applicable to PED.

7. Schedule of Project Costs

For schedule of project costs, see Section 5, "Financial Schedule."

8. Related Operations and Maintenance Funding Requirements[a]

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

(Related Funding requirements)

(dollars in thousands)

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

9. Required D&D Information[b]

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

Name(s) and site location(s) of existing facility(s) to be replaced: Not applicable for PED.

10. Acquisition Approach

Not applicable for PED.

[a] Not applicable for PED.

[b] Not applicable for PED.

06-D-402, NTS Replace Fire Stations No.1 and No.2, Nevada Test Site
Project Data Sheet (PDS) is for Construction

1. Significant Changes

The most recent DOE O 413.3A approved Critical Decision (CD) is CD-2 approved January 26, 2006 with a baselined Total Project Cost (TPC) of $31,887,000.

A Federal Project Director with certification level II has been assigned to this project.

This PDS is an update of the FY 2008 PDS.

The design/build bids for Fire Station No. 2 were received and are much higher than the recently completed government estimates. An Independent Project Review (IPR) is currently being conducted to revalidate the baseline. An additional $9,340,000 is being requested in FY 2009 to cover the increases.

$2,500,000 associated with final design was moved from this project to 04-D-103, Project Engineering and Design, consistent with the justification included in the FY 2007 and FY 2008 Congressional Budget Requests.

The acquisition strategy has been changed from design/build to design/bid/build to allow the project to mitigate the impact of volatile Las Vegas construction market by soliciting bids to be evaluated and awarded at minimal delay.

2. Design, Construction, and D&D Schedule

(fiscal quarter or date)

	CD-0	CD-1 (Design Start)	(Design/PED Complete)	CD-2	CD-3 (Construction Start	CD-4 (Construction Complete)	D&D Start	D&D Complete
FY 2006	12/06/2004	1Q FY 2005	1Q FY 2007	01/26/2006	3Q FY 2006	1Q FY 2008	N/A	N/A
FY 2007	12/06/2004	05/03/2005	3Q FY 2007	01/26/2006	4Q FY 2006	1Q FY 2009	N/A	N/A
FY 2008	12/06/2004	05/03/2005	3Q FY 2007	01/26/2006	4Q FY 2006	1Q FY 2009	N/A	N/A
FY 2009	12/06/2004	05/03/2005	3Q FY 2008	01/26/2006	TBD[a]	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

[a] CD-3 and CD-4 dates will be determined after the baseline is revalidated and a BCP is approved.

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 2005	2,343	22,364	24,707	455	N/A	455	25,162
FY 2006	2,343	22,364	24,707	455	N/A	455	25,162
FY 2007	2,343	28,869	31,212	705	N/A	705	31,917
FY 2008	2,343	28,839	31,182	705	N/A	705	31,887
FY 2009	4,843	35,679	40,522	705	N/A	705	41,227

The TEC and TPC will be revalidated when the revised baseline is approved. No construction funds will be used until the project performance baseline has been validated and a CD-3 has been approved.

4. Project Description, Justification, and Scope

This project will provide for the design and construction of two new fire stations on the Nevada Test Site (NTS). Fire Station No. 1 will be located at the Mercury Camp Site in Area 23. Fire Station No. 2 will be located in Area 6 near the Control Point. The new facilities will replace existing facilities and provide the space necessary to adequately accommodate the personnel and equipment assigned to support the emergency response mission to the southern, central, and northern areas of the NTS.

Justification

The NTS is located on approximately 1,375 square miles in south central Nevada and is home to a wide variety of Department of Energy (DOE) missions associated with Readiness in Technical Base and Facilities (RTBF), Directed Stockpile Work (DSW), and Science Campaigns, as well as missions from the Department of Defense (DoD). In addition, there are missions associated with the storage of radiologically contaminated hazardous wastes.

Approximately 1,000 employees and the full 1,375 square miles of the NTS are being served by Fire Stations No. 1 and No. 2, located 25 miles apart. These existing Stations were constructed to meet the 1960's codes and no longer meet current code requirements. Major areas of deficiencies affect every area of occupational safety and health, including; separation of public and living areas from the vehicular and maintenance areas; isolation of blood borne pathogens, maintenance of clothing, breathing, and other equipment in proper facilities, and the general well being of employees who could be on duty up to 56 hours at a time. The stations are manned 24 hours per day, seven days a week. These stations have seen little in the way of modernization or expansion over the past 38 years, though the mission and responsibilities of the NTS fire department have increased dramatically over the years to include hazardous materials response capabilities, technical rescue, advanced medical services, and expanded fire alarm notification/dispatching. Another change is the addition of female personnel. These and other changes in work scope and deliverables have required additional staffing, larger specialized vehicles and equipment, and alterations to the facilities to accommodate specific mandated requirements.

The inadequacies of the existing fire stations have been documented in several reports and studies, which have identified deficiencies with National Fire Protection Association (NFPA) codes and standards that should be addressed, including: inadequate sleeping quarters; inadequate disinfection

area; inadequate indoor storage for emergency vehicles; inadequate office work spaces; and inadequate facilities for cleaning personal protective equipment.

Scope

The scope of this project is to provide the NTS with NFPA compliant emergency response facilities to ensure that emergency response personnel and equipment are housed in accordance with applicable codes and standards and that the NTS has an adequate firefighting, emergency medical, technical rescue, and hazardous materials capability. Fire Station No. 1 is estimated to be approximately 23,000 to 28,000 square feet (sq. ft.) and Fire Station No. 2 is estimated to be approximately 11,000 to 13,000 sq. ft. depending on final building layout and how many additional optional equipment bays are constructed at each fire station. Both facilities will have sufficient space to accommodate administrative functions, dormitories, exercise area, restrooms, medical treatment room, kitchen and dining areas, classrooms, and storage. The project will include the necessary infrastructure tie-ins for electrical power, sewer, water, and telecommunications systems, and will include heating, ventilation, and air-conditioning systems, lighting systems, generators, intercom system, fire alarm and suppression systems, cable television system, furnishings, compressed air system, and exercise equipment and other miscellaneous elements as may be required for complete, functional facilities.

The FY 2009 funding will be used for project construction.

The project will be conducted in accordance with the project management requirements in DOE Order 413.3A and DOE Manual 413.3-1, Program and Project Management for the Acquisition of Capital Assets.

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

5. Financial Schedule

(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED/Construction			
PED			
FY 2004	2,343	0	0
FY 2005	0	2,343	888
FY 2006	0	0	371
FY 2007	2,500[a]	2,500	1,580
FY 2008	0	0	2,004
Total, PED (PED No. 04-D-103)	4,843	4,843	4,843

[a] $2,500,000 was moved from this Line Item Project to the PED Project (04-D-103-01) as a change to the FY 2007 Operating Plan.

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Construction			
FY 2006	8,201[a]	8,201	0
FY 2007	11,419	11,419	0
FY 2008	6,591[b]	6,591	TBD[c]
FY 2009	9,340	9,340	TBD
Total, Construction	35,551	35,551	35,551
TEC			
FY 2004	2,343	0	0
FY 2005	0	2,343	888
FY 2006	8,201	8,201	371
FY 2007	13,919	13,919	1,580
FY 2008	6,591	6,591	TBD
FY 2009	9,340	9,340	TBD
Total, TEC	40,394	40,394	40,394
Other Project Cost (OPC)			
OPC except D&D			
FY 2004	705	705	204
FY 2005	0	0	494
Total, OPC except D&D	705	705	698
D&D			
FY N/A	N/A	N/A	N/A
Total, D&D	N/A	N/A	N/A
OPC			
FY 2004	705	705	204
FY 2005	0	0	494
Total, OPC	705	705	698
Total Project Cost (TPC)			
FY 2004	3,048	705	204
FY 2005	0	2,343	1,382
FY 2006	8,201	8,201	371
FY 2007	13,919	13,919	1,580
FY 2008	6,591	6,591	TBD
FY 2009	9,340	9,340	TBD
FY 2010	0	0	TBD
Total, TPC	41,099	41,099	41,099

[a] The original appropriation was $8,284,000. This was reduced by $82,840 for a Government-wide mandatory rescission of 1.0 percent (P.L. 109-148).

[b] Original FY 2008 appropriation was $6,650,000. This was reduced by $59,380 as a result of a mandatory rescission in the FY 2008 Consolidated Appropriations Act (P.L. 110-161).

[c] Because the acquisition strategy has been changed, a new baseline for the project is in development. Details of the cost profile have not yet been determined.

6. Details of Project Cost Estimate

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED)	4,843	2,343	2,343
Contingency	0	0	0
Total, PED (PED No. 04-D-103)	4,843	2,343	TBD
Construction			
Site Preparation	N/A	N/A	N/A
Equipment	N/A	N/A	N/A
Other Construction	TBD	23,055	22,927
Contingency	TBD	5,784	5,912
Total, Construction	35,551	28,839	28,839
Total, TEC	40,394	31,182	31,182
Contingency, TEC	TBD	5,784	5,912
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning			
Conceptual Design	705	705	705
Start-Up			
Contingency	0	0	0
Total, OPC except D&D	705	705	705
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	705	705	705
Contingency, OPC	0	0	0
Total, TPC	41,099	31,887	31,887
Total, Contingency	TBD	5,784	5,912

7. Schedule of Project Costs

For schedule of project costs, see Section 5, “Financial Schedule.”

8. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	TBD
Expected Useful Life (number of years)	30
Expected Future Start of D&D of this capital asset (fiscal quarter)	N/A

(Related Funding requirements)

(dollars in thousands)

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

9. Required D&D Information

Area	Square Feet
Area of new construction	40,000
Area of existing facility(s) being replaced	16,000
Area of additional D&D space to meet the "one-for-one" requirement	35,000

The total square footage of the two new stations will be up to 40,000 ft^2. The total being replaced is 16,000 ft^2. However, the current plan is to D&D Fire Station 2 only. Fire Station 2 is on the Facilities and Infrastructure Recapitalization Program D&D list for FY 2010 and it is 5,022 ft^2.

10. Acquisition Approach

Conceptual design was performed by the on-site performance-based management contractor. The project's approach has been changed to design/bid/build to allow the project to mitigate the volatility of the Las Vegas construction market. The preliminary design and the final design will be accomplished by the performance-based management contractor. Construction will be performed by a firm fixed-priced contract, awarded on the best value selection criteria.

06-D-140, Project Engineering and Design (PED), Various Locations
Project Data Sheet (PDS) is for PED

1. Significant Changes

The most recent DOE O 413.3A approved Critical Decision (CD) for the TA-55 Radiography Facility Project is CD-0, Approval of Mission Need. CD-0 was approved on 1/30/2005 with a preliminary Total Project Cost (TPC) range of $29,000,000 – $47,000,000.

The most recent DOE O 413.3A approved CD for the TA-55 Reinvestment Project Phase I is CD-2, Approval of Performance Baseline for the two subprojects. CD-2 was approved on 11/22/2006 with a preliminary Total Estimated Cost (TEC) range of $26,700,000.

The most recent DOE O 413.3A approved CD for the Radioactive Liquid Waste Treatment Facility Upgrade Project is CD-2A, Approval of Performance Baseline for the Zero Liquid Discharge subproject. CD-2A was approved on 11/22/2006 with a preliminary TEC range of $58,000,000 – 80,000,000.

The most recent DOE O 413.3A approved CD for the Uranium Processing Facility Project is CD-1, Approval of Preliminary Baseline. CD-1 was approved on 7/25/2007 with a preliminary cost range of $1,400,000,000 - $3,500,000,000.

This PDS is an update of the FY 2008 PDS.

For the Uranium Processing Facility (UPF), the TEC for design has increased to $297,523,000. The TEC has increased to a range of $1,200,000,000 to $2,100,000,000, the TPC has increased to a range of $1,400,000,000 to 3,500,000,000 and the cost and funding profiles have been adjusted to reflect current guidance. The design completion has been extended from 3Q FY 2009 to 2Q FY 2012. These changes are a result of the delay in CD-1 approval (to 4Q FY 2007), FY 2007 PED funding constrained to $5,000,000, FY 2008 PED funding of $38,609,000, adjusted escalation rates to reflect current experience, incorporation of definitive scope data that was developed during project definition, and incorporation of trends identified since the February 2006 CD-1 submittal.

The acquisition approach for the TA-55 Reinvestment Project (TRP) has been revised. Two distinct and separate line item projects, TRP Phase I (08-D-804) and TRP Phase II (10-D-XXX), will flow from this PED effort. A third phase will be initiated at a later date. This request for PED funding for TRP Phases I and II has been increased by $7,500,000 to a total of $8,500,000. This increase applies solely to design efforts for the TRP Phase II. The increase is needed to accommodate lessons learned from other projects and to provide for more detailed design prior to establishment of a validated TRP II baseline. While the TRP Phase I has been baselined, design work for TRP Phase II has not started. A recent independent review of TRP Phase II found that significantly more design work would be required than previously believed. It was originally thought that TRP Phase II design could be completed in early FY 2009. Now it is clear that additional funds will be required to support a design effort that will continue until the end of FY 2009.

2. Design, Construction, and D&D Schedule

(fiscal quarter or date)

	CD-0	CD-1 (Design Start)	(Design/PED Complete)	CD-2	CD-3 (Construction Start)	CD-4 (Construction Complete)	D&D Start	D&D Complete
FY 2006		1QFY2006	3QFY2009	Various	Various	Various	Various	Various
FY 2007		1QFY2006	3QFY2009	Various	Various	Various	Various	Various
FY 2008		1QFY2006	3QFY2009	Various	Various	Various	Various	Various
FY 2009		1QFY2006	2QFY2012	Various	Various	Various	Various	Various

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]

(dollars in thousands)

	TEC, PED	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2006			92,213	N/A	N/A		92,213
FY 2007			108,795	N/A	N/A		108,795
FY 2008			TBD	N/A	N/A		TBD
FY 2009			343,619	N/A	N/A		343,619

4. Project Description, Justification, and Scope

This project provides for Architect-Engineering (A-E) services for Readiness in Technical Base and Facilities (RTBF) construction projects, allowing designated projects to proceed from conceptual design into preliminary design and final design. The design effort will be sufficient to assure project feasibility, define the scope, provide detailed estimates of construction costs based on the approved design and working drawings and specifications, and provide construction schedules, including procurements. The designs will be extensive enough to establish performance baselines and to support construction or long-lead procurements in the fiscal year in which line item construction funding is requested and appropriated.

Conceptual design studies are prepared for each project using Operations and Maintenance funds prior to receiving design funding under a PED line item. These conceptual design studies define the scope of the project and produce a rough cost estimate and schedule.

New FY 2006 PED design projects are described below. While not anticipated, some changes may occur due to continuing conceptual design studies or developments occurring after submission of this data sheet. These changes will be reflected in subsequent years. Preliminary estimates for the cost of

[a] The TEC is for design only for the subprojects currently included in this data sheet.

preliminary and final design and engineering efforts for each subproject are provided, as well as very preliminary estimates of the TEC, including physical construction, of each subproject. The final TEC and the TPC for each project described below will be validated and the Performance Baseline will be established at CD-2, following completion of preliminary design.

TA-55 Reinvestment Phase I and RLWTF Phase A both have approved baselines. The remaining projects listed in this data sheet do not have an approved performance baseline; therefore, all costs and schedule are preliminary until CD-2 is approved.

The project is being conducted in accordance with the project management requirements in DOE O 413.3A and DOE M 413.3-1, Program and Project Management for the Acquisition of Capital Assets, and all appropriate project management requirements have been met.

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

5. Financial Schedule

(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED			
FY 2006	11,859	11,859	362
FY 2007	16,577	16,577	8,440
FY 2008	41,552[a]	41,552	33,603
FY 2009	104,661	104,661	83,500
FY 2010	116,970	116,970	116,970
FY 2011	52,000	52,000	68,000
FY 2012	0	0	32,744
Total, PED	343,619	343,619	343,619
Construction			
FY	TBD	TBD	TBD
Total, Construction	TBD	TBD	TBD
TEC (PED)			
FY 2006	11,859	11,859	362
FY 2007	16,577	16,577	8,440
FY 2008	41,552	41,552	33,603
FY 2009	104,661	104,661	83,500
FY 2010	116,970	116,970	116,970
FY 2011	52,000	52,000	68,000
FY 2012	0	0	32,744
Total TEC (PED)	343,619	343,619	343,619

[a] Original FY 2008 appropriation was $41,926,000. This was reduced by $374,374 as a result of a mandatory rescission in the FY 2008 Consolidated Appropriations Act (P.L. 110-161).

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Other Project Cost (OPC)			
Total, OPC except D&D	TBD	TBD	TBD
D&D			
Total, D&D	TBD	TBD	TBD
OPC			
Total, OPC	TBD	TBD	TBD
Total Project Cost (TPC)			
Total, TPC	TBD	TBD	TBD

06-01: TA-55 Radiography Facility, Los Alamos National Laboratory (LANL)

Fiscal Quarter				Total Estimated Cost (Design Only ($000)	Preliminary Full Total Estimated Cost Projection ($000)
A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
1Q FY 2006	TBD	TBD	TBD	6,336	29,000-47,000

Fiscal Year	Appropriations	Obligations	Costs
2006	1,859	1,859	0
2007[a]	1,977	1,977	0
2008	990	990	4,826

The project Mission Need was approved in January 2005. The above changes reflect this approval. However, these dates are target dates, subject to change until the Performance Baseline is approved at the CD-2. The CD-1 request for this project has been deferred pending consolidation of other programmatic options and issuance of a National Environmental Policy Act (NEPA) determination.

The purpose of this project is to design and construct a replacement Radiography Facility to be located within the TA-55 Perimeter Intrusion and Detection System (PIDAS). The specifics of the design and configuration are to be optimized to meet the requirements of the associated programs. The facility will house several x-ray systems suitable for the various energy level requirements, and will provide a long-term solution for LANL sealed nuclear component radiography. Radiography of sealed nuclear components is required for the Pit Manufacturing and Certification Project (PMCP) and Pit Surveillance Program (PSP).

LANL has been assigned the responsibility for establishing and maintaining a limited pit production mission for up to 20 pits per year until a more permanent pit manufacturing facility can be designed and constructed. Non-destructive examinations (NDE) such as x-ray radiography, dye penetrant, ultrasonic examinations, and computed tomography are utilized to identify material defects and verify assembly configurations. Final radiography on "pits" manufactured at Los Alamos and radiography of

[a] Of the total funds appropriated in FY 2006 for this project 06-D-140, the entire $141,130 or 1 percent included in the Consolidated Appropriations Act, 2006 (P.L. 109-148) was applied against subproject 06-01, TA-55 Radiography Facility.

surveillance pits (those removed from the stockpile for destructive examination) is currently performed at another facility that is over 40 years old. This facility does not have the permanent safety and security features required to meet the demands of the revised facility authorization basis or the revised design basis threat; therefore it is not suitable for the long term. NDE in this old facility also requires secure transport and extensive temporary security measures, which are labor intensive and inefficient.

This project will (1) reduce the programmatic and schedule risk associated with anticipated changes in the safeguards and security requirements for protecting nuclear assemblies during transportation and examination outside the PIDAS at TA-55; (2) provide improved protection for workers and the environment in the event of accidental releases; and (3) be commensurate with the Laboratory goal of consolidating nuclear operations around TA-55.

06-02: TA-55 Reinvestment Project Phases I and II, LANL[a]

TA-55 Reinvestment Phase I

Fiscal Quarter				Total Estimated Cost (Design Only ($000)	Preliminary Full Total Estimated Cost Projection ($000)
A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
3Q FY 2006	4Q FY 2011	2Q FY 2009	1Q FY 2010	5,300	26,700

Fiscal Year	Appropriations	Obligations	Costs
2006	2,000	0	0
2007	1,500	1,799	1,744
2008	800	2,501	2,556
2009	0	0	0
Total	4,300	4,300	4,300

TA-55 Reinvestment Phase II

Fiscal Quarter				Total Estimated Cost (Design Only ($000)	Preliminary Full Total Estimated Cost Projection ($000)
A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
3Q FY 2006	TBD	FY 2010	TBD	8,700	TBD

Fiscal Year	Appropriations	Obligations	Costs
2008	1,179	1,160	200
2009	8,500	8,500	2,762
2010	TBD	TBD	TBD
2011	TBD	TBD	TBD
Total	TBD	TBD	TBD

[a] Construction funding for the TA-55 Reinvestment Project Phase I is requested via 08-D-804 and construction funding for TRP Phase II will be requested via a separate Construction Line Item Request at a later date.

The acquisition approach for the TA-55 Reinvestment Project has been revised. Impacts to available/anticipated funding has lead to development of a phased acquisition strategy for the TRP project. To meet mission need objectives within the budgetary and strategic context constraints, the TRP project is proposed for execution as three separate, distinct capital line item projects, TRP Phase I, TRP Phase II, and TRP Phase III. The PED funding requested above supports the first two phases of TRP.

The TA-55 Reinvestment Project is intended to provide for selective replacement and upgrades of major facility and infrastructure systems to NNSA's key nuclear weapons research and development facility, the Plutonium Facility (PF-4) and related structures, located at LANL's TA-55. The objective of the TA-55 Reinvestment Project is to extend the useful life of PF-4 and the safety systems that support its critical operations to assure continued capability to reliably support Defense Programs missions for an additional 25 years. The project will ensure the vitality and readiness of the NNSA nuclear security enterprise to meet the threat of the 21st century. The project received CD-0 on December 6, 2004, and is proceeding with project development.

The PF-4's 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 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.

The scope of this project includes upgrading, replacing, and retrofitting TA-55 facility and infrastructure systems such as mechanical (heating ventilation and air conditioning; high efficiency particulate air; and material handling), electrical (power distribution, standby and emergency power), and utility systems (process gasses and liquids, piping), safety, facility monitoring and control, structural components, architectural (roofing, coatings), and other systems and components, as candidate options. The candidate systems and scope have been defined by the facility and program management staff with engagement by the LANL facility maintenance organization through a prioritized, risk-based selection process during the pre-conceptual phase that will be refined during conceptual design. In FY 2006, FY 2007, and FY 2008 PED funding will be used to perform design activities on subprojects planned for construction starting in FY 2008.

06-03: Radioactive Liquid Waste Treatment Facility Upgrade, LANL

Fiscal Quarter				Total Estimated Cost (Design Only ($000)	Preliminary Full Total Estimated Cost Projection ($000)
A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
3Q FY 2006	3Q FY 2008	3Q FY 2008	3Q FY 2010	11,100	58,000-80,000

Fiscal Year	Appropriations	Obligations	Costs
2006	3,000	3,000	362
2007	8,100	8,100	6,020
2008			4,718

The radioactive liquid waste (RLW) treatment and disposal capability at Los Alamos National Laboratory supports 15 technical areas, 63 buildings, and 1800 sources of RLW. This capability must

be continuously available to receive and treat liquid waste generated from Stockpile Stewardship activities. LANL has a 50-year mission need for facilities and processes that can accept, store, and treat RLW in support of this long-term mission.

Significant portions of the RLW system are over 40 years old and their reliability is significantly diminishing. The recent transuranic storage tank failure demonstrated the inability of RLW components to remain in service beyond their design life. The 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 authorization basis decisions regarding connected facilities at TA-50, where the treatment facility is located, have highlighted the need for enhanced seismic conformance. Continuous workarounds are required to keep systems running and excessive corrosion threatens system availability. Degraded and outdated facility systems pose elevated risk to workers.

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

- Transuranic (TRU) waste treatment,
- Low-level waste (LLW) treatment,
- Secondary waste treatment,
- RLW discharge system/Zero Liquid Discharge (ZLD),
- TRU influent storage.

06-05, Uranium Processing Facility, Y-12 National Security Complex

Fiscal Quarter				Total Estimated Cost (Design Only ($000)	Preliminary Cost Range ($000)
A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
2Q FY 2006	2Q FY 2012	TBD	TBD	297,353	1,400,000 – 3,500,000

Preliminary schedule estimate for CD-4, Approve Start of Operations or Project Closeout, is 4QFY 2018.

(dollars in thousands)

	Appropriations	Obligations	Costs
FY 2006	5,000	5,000	0
FY 2007	5,000	5,000	676
FY 2008	38,583[a]	38,583	20,324
FY 2009	96,161	96,161	75,000
FY 2010	116,970	116,970	116,970
FY 2011	52,000	52,000	68,000
FY 2012	0	0	32,744

This subproject provides for preliminary and final (Title I and Title II) design for a Uranium Processing Facility (UPF), a major system acquisition, that is being proposed to ensure the long-term viability,

[a] Original FY 2008 appropriation was $38,957,000. This was reduced by $374,374 as a result of a mandatory rescission in the FY 2008 Consolidated Appropriations Act (P.L. 110-161).

safety, and security of the NNSA's Enriched Uranium (EU) capability at a site chosen consistent with the Complex Transformation decision process. A UPF will support the nation's nuclear weapons stockpile, down blending of EU in support of nonproliferation, and provide uranium as feedstock for fuel for naval reactors. The goals and objectives of a UPF are as follows:

- ensure the long-term capability and improve the reliability of EU operations through consolidation of facilities.
- replacement of deteriorating, end-of-life facilities with a modern processing facility.
- significantly improve the health and safety of workers and the public by replacing marginally compliant facilities and 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 necessary to carry out mission-critical activities and implement the Design Basis Threat Policy.
- allow a 90% reduction in the high-security footprint as compared to the current site configuration.

A UPF will consolidate all Category 1 and 2 EU operations into a single, modern facility with state-of-the-art technologies and safeguards and security concepts and strategies. Core capabilities will include the following:

- 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 (casting, rolling, forming, and machining); and
- chemical processing including conversion of scrap and salvage EU to metal and other compounds.

Most of the current operations to be replaced by this project are located in facilities that are greater than 50 years old, do not meet today's standards, and are technologically obsolete. This new facility, patterned after the Highly Enriched Uranium Materials Facility's (HEUMF) Designed Denial Facility concept, will provide modern facilities, reduce the site's highest security area by about 90%, and enable a reduction in annual operating costs by approximately 37%.

As directed by Congress, design efforts will be "site neutral" until the Weapons Complex Transformation decisions are finalized.

The project is being conducted in accordance with the project management requirements in DOE O 413.3A and DOE M 413.3-1, Program and Project Management for the Acquisition of Capital Assets, and all appropriate project management requirements have been met.

6. Details of Project Cost Estimate

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED)			
Design	N/A	TBD	N/A
Contingency	N/A	TBD	N/A
Total, PED	N/A	328,959	N/A
Construction			
Site Preparation	N/A	N/A	N/A
Equipment	N/A	N/A	N/A
Other Construction	N/A	N/A	N/A
Contingency	N/A	N/A	N/A
Total, Construction	N/A	N/A	N/A
Total, TEC	N/A	N/A	N/A
Contingency, TEC	N/A	N/A	N/A
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	N/A	N/A	N/A
Conceptual Design	N/A	N/A	N/A
Start-Up	N/A	N/A	N/A
Contingency	N/A	N/A	N/A
Total, OPC except D&D	N/A	N/A	N/A
D&D			
D&D	N/A	N/A	N/A
Contingency	N/A	N/A	N/A
Total, D&D	N/A	N/A	N/A
Total, OPC	N/A	N/A	N/A
Contingency, OPC	N/A	N/A	N/A
Total, TPC	N/A	N/A	N/A
Total, Contingency	N/A	N/A	N/A

7. Schedule of Project Costs

For schedule of project costs, see Section 5, “Financial Schedule.”

8. Related Operations and Maintenance Funding Requirements

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

(Related Funding requirements)

(dollars in thousands)

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

9. Required D&D Information

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

Name(s) and site location(s) of existing facility(s) to be replaced: N/A

10. Acquisition Approach

Not applicable for PED.

04-D-128, Criticality Experiments Facility Project
Los Alamos National Laboratory (LANL) and Nevada Test Site (NTS)
Project Data Sheet (PDS) is for Construction

1. Significant Changes

Critical Decision 3D, Approve Start of Device Assembly Facility Modifications, was approved on February 9, 2007 with the Total Project Cost (TPC) of $149,027,000.

A Federal Project Director with Level III certification has been assigned to this project.

This PDS is an update of the FY 2008 PDS.

A Baseline Change, approved in July 2007, increased the TPC to $149,616,000 and extended the project completion date from 1Q FY 2010 to 3Q FY 2010. A significant change in security requirements after the Performance Baseline was approved (December 2, 2005) created the need for approximately $3,700,000 additional funds in FY 2007, which the program was unable to fund without the schedule realignment.

2. Design, Construction, and D&D Schedule

(fiscal quarter or date)

	CD-0	CD-1 (Design Start)	(Design/PED Complete)	CD-2B	CD-3E (Construction Start)	CD-4 (Physical Construction Complete)	D&D Start	D&D Complete
FY 2002	08/03/2002	TBD	TBD	TBD	TBD	TBD	N/A	N/A
FY 2003	08/03/2002	TBD	TBD	TBD	TBD	TBD	N/A	N/A
FY 2004	08/03/2002	06/14/2004	4QFY 2006	TBD	TBD	TBD	N/A	N/A
FY 2005	08/03/2002	06/14/2004	4QFY 2006	12/02/2005	TBD	TBD	N/A	N/A
FY 2006	08/03/2002	06/14/2004	4QFY 2006	12/02/2005	4QFY 2006	3QFY 2008	N/A	N/A
FY 2007	08/03/2002	06/14/2004	4QFY 2006	12/02/2005	4QFY 2006	1QFY 2010	N/A	N/A
FY 2008	08/03/2002	06/14/2004	3QFY 2007	12/02/2005	3QFY 2007	3QFY 2010	N/A	N/A
FY 2009	08/03/2002	06/14/2004	4QFY2008	12/02/2005	4QFY 2008[a]	3QFY 2010	N/A	N/A

CD-0 – Approve Mission Need
CD-1 – Approve Alternative Selection and Cost Range
CD-2B – Approve Performance Baseline
CD-3E – Approve Transferring upgraded Critical Assembly Machines to the Nevada Test Site
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] A Level 1 Baseline Change, approved the change in the CD-3E completion date to allow the project schedule be realigned with the available funding.

(fiscal quarter or date)

	Performance Baseline Validation	CD-2A/3A (Start of EGS Construction)	CD-3B (Long-Lead Procurement)	CD-3C (Start Temporary Construction)	CD-3D (Start DAF Modifications)
FY 2002	NA	TBD	TBD	TBD	TBD
FY 2003	NA	TBD	TBD	TBD	TBD
FY 2004	NA	TBD	TBD	TBD	TBD
FY 2005	11/28/2005	4/14/2005	2QFY 2006	3QFY 2006	1QFY 2007
FY 2006	11/28/2005	4/14 2005	2/09/2006	5/1/2006	2/07/2007

CD-2A/3A: Start Modifications of the Entry Guard Station to add new personnel processing lane and monitors
CD-3B: Start procuring of long-lead equipment for the Critical Assembly Machines and the Device Assembly Facility (DAF) Modifications
CD-3C: Start construction of temporary offices (trailers) and outside DAF PIDAS communication lines
CD-3D: Start DAF modifications, which is the major scope of the project construction activities.

3. Baseline and Validation Status

(dollars in thousands)

	TEC, PED[a]	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2002	TBD	TBD	TBD	TBD	NA	TBD	TBD
FY 2003	TBD	TBD	TBD	TBD	NA	TBD	TBD
FY 2004	23,968	TBD	TBD	TBD	NA	TBD	TBD
FY 2005	25,418	77,469	102,887	42,316	NA	42,316	145,203
FY 2006	25,418	77,469	102,887	42,316	NA	42,316	145,203
FY 2007	25,418	77,469	102,887	42,316	NA	42,316	145,203
FY 2008	25,443[b]	80,643	106,086	42,941	NA	42,941	149,027
FY 2009	25,443	80,643	106,086	43,530	NA	43,530	149,616

4. Project Description, Justification, and Scope

Project Description

The goal of the CEF Project is to provide a long-term base criticality experiments capability, improve the security and safety posture, and maximize the use of existing facilities. This project is conceived as the best long-term solution to achieve this goal. Equipment, special nuclear material, and capabilities will be moved from TA-18, the sole remaining facility in the United States capable of performing general-purpose nuclear materials handling experiments and conducting training essential to support national security missions. TA-18 activities include: (1) research and development (R&D) of technologies in support of Homeland Defense and counter-terrorism initiatives; (2) continued safe and efficient handling and processing of fissile materials; (3) development of technologies vital to implementing arms control and nonproliferation agreements; (4) development of emergency response technologies for response to terrorist attacks and other emergencies; and (5) training for criticality safety

[a] PED funds for Phase 2 were requested in FY 2005 under PED Line Item 01-D-103.

[b] An additional $25,000 was appropriated for this project by Congress in FY 2007.

professionals, fissile materials handlers, emergency responders, International Atomic Energy Agency professionals, and other Federal and State organizations charged with Homeland Defense responsibilities.

Project Justification
The need for this project is based on the projected large capital investment for security and infrastructure upgrades required over the next 10 years to remain at TA-18. The NNSA completed environmental reviews and technical and cost studies to evaluate siting options for the TA-18 missions, and designated that the preferred alternative is to relocate a portion of the TA-18 missions to the Device Assembly Facility (DAF) at the NTS.

Project Scope
The DAF will be modified to accommodate a base criticality experiments capability with the existing DAF missions. Specifically: The DAF will be modified to accept four critical assemblies, create two storage vaults, two control rooms, several offices. The existing entry guard station was modified to provide two automated entry lanes with biometrics. New personnel control fencing will be constructed within the PIDAS to allow escorted, uncleared workers access to the CEF construction sites. Classified workstations and telecommunications between the secure DAF and LANL in New Mexico will be provided. In addition, four critical assembly machines will be disassembled from TA-18, upgraded, transported and reassembled at the DAF. The critical assembly controls and safety systems will be upgraded to meet nuclear safety requirements.

FY 2009 funding will be used to continue modifications of DAF.

The project is being executed in accordance with the project management requirements in Department of Energy (DOE) Order 413.3A "Program and Project Management for the Acquisition of Capital Assets" and DOE Manual 413.3-1, Project Management for the Acquisition of Capital Assets.

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

5. Financial Schedule

(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED			
FY 2001	998[a]	998	0
FY 2002	6,426	6,426	0
FY 2003	0	0	0
FY 2004	1,591[b]	1,591	1,731
FY 2005	5,953[c]	5,953	10,696
FY 2006	8,910[d]	8,910	10,807
FY 2007	1,565	1,565	1,790
FY 2008	0	0	419
Total, PED (PED no. 01-D-103)	25,443	25,443	25,443
Construction			
FY 2004	3,768	3,768	0
FY 2005	0	0	220
FY 2006	12,870[e]	12,870	3,353
FY 2007	24,197	24,197	20,655
FY 2008	28,892[f]	28,892	38,332
FY 2009	10,353	10,353	17,000
FY 2010			520
Total, Construction	80,080	80,080	80,080
Total, TEC	105,523	105,523	105,523

[a] The FY 2001 Appropriations Act designated $1,000,000 for initiation of design activities for relocation of TA-18 Nuclear Materials Handling Facility at LANL. This was reduced by $2,000 by a rescission enacted by Section 1403 of the FY 2001 Consolidated Appropriations Act.

[b] Original appropriation was $1,600,000. This was reduced by $9,441 for the mandatory rescission of 0.59 percent enacted by P.L. 108-199.

[c] Original appropriation was $6,000,000. This was reduced by $47,439 for the rescission of 0.8 percent included in the Consolidated Appropriations Act, 2005 (P.L. 108-447).

[d] FY 2006 original Appropriation for Project Engineering and Design was $9,000,000 (PED LI: 01-D-103-07). This was reduced by $90,000 as a result of a government-wide mandatory rescission of 1.0 percent (P.L. 109-148).

[e] FY 2006 original Appropriation was $13,000,000. This was reduced by $130,000 as a result of a government-wide mandatory rescission of 1.0 percent by P.L. 109-148.

[f] Original FY 2008 appropriation was $29,152,000. This was reduced by $260,310 as a result of a mandatory rescission in the FY 2008 Consolidated Appropriations Act (P.L. 110-161).

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Other Project Cost (OPC)			
OPC except D&D			
FY 2001	2,000	2,000	2,000
FY 2002	3,245	3,245	3,245
FY 2003	4,219	4,219	4,219
FY 2004	6,334	6,334	6,334
FY 2005	4,370	4,370	4,042
FY 2006	5,842	5,842	2,344
FY 2007	1,489	1,489	2,261
FY 2008	6,788	6,788	7,526
FY 2009	6,645	6,645	6,645
FY 2010	2,598	2,598	4,914
Total, OPC except D&D	43,530	43,530	43,530
D&D			
FY 2009[a]	NA	NA	NA
Total, D&D	NA	NA	NA
Total Project Cost (TPC)			
FY 2001	2,998	2,998	2,000
FY 2002	9,671	9,671	3,245
FY 2003	4,219	4,219	4,219
FY 2004	11,693	11,693	8,065
FY 2005	10,323	10,323	14,958
FY 2006	27,622	27,622	16,504
FY 2007	27,251	27,251	24,706
FY 2008	35,680	35,680	46,277
FY 2009	16,998	16,998	23,645
FY 2010	2,598	2,598	5,434
Total, TPC	149,053	149,053	149,053

[a] D&D of the TA-18 Facility (approximately 70,0000 square foot) at LANL, although not part of this project, may be paid by the Facilities and Infrastructure Recapitalization Program and estimated to be approximately $10,000,000.

6. Details of Project Cost Estimate

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED)			
Design	25,331	24,343	24,318
Contingency	112	1,100	1,100
Total, PED (PED no. 01-D-103)	25,443	25,443	25,418
Construction			
Site Preparation	1,584	3,000	3,000
Equipment	3,454	3,454	2,000
Other Construction	65,256	62,841	55,892
Contingency	9,786	11,348	16,577
Total, Construction	80,080	80,643	77,469
Total, TEC	105,523	106,086	102,887
Contingency, TEC	9,898	12,448	17,677
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning & Conceptual Design	26,603	26,603	25,761
Start-Up	15,771	14,998	14,715
Contingency	1,156	1,340	1,840
Total, OPC except D&D	43,530	42,941	42,316
D&D	NA	NA	NA
D&D	NA	NA	NA
Contingency	NA	NA	NA
Total, D&D	NA	NA	NA
Total, OPC	43,530	42,941	42,316
Contingency, OPC	1,156	1,340	1,840
Total, TPC	149,053	149,027	145,203
Total, Contingency	11,054	13,788	19,517

7. Schedule of Project Costs

For schedule of project costs, see Section 5, “Financial Schedule.”

8. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	3QFY 2010
Expected Useful Life (number of years)	20
Expected Future Start of D&D (fiscal quarter)	3QFY 2029

(Related Funding requirements)

(dollars in thousands)

	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations[a]	N/A	N/A	N/A	N/A
Maintenance[b]	N/A	N/A	N/A	N/A
Total, Operations & Maintenance	N/A	N/A	N/A	N/A

9. Required D&D Information

D&D Information Being Requested	Square Feet
Area of new construction[c]	0
Area of existing facility(s) being replaced	0
Area of additional D&D space to meet the "one-for-one" requirement	NA

An existing facility is being upgraded.

10. Acquisition Approach (formerly Method of Performance)

Due to the facility's security classification, the Management and Operating contractors will perform most design and construction activities. Design of CP-9 and CP-72 was completed via a firm-fixed price contract.

[a] Facility Operations cost is part of the DAF overall operations cost; break-down cost for CEF is not practical to calculate.

[b] Facility maintenance cost is part of the DAF overall operations cost; break-down cost for CEF is not practical to calculate.

[c] A portion of DAF is being modified to house the criticality experiments operations.

04-D-125, Chemistry and Metallurgy Research Building Replacement (CMRR) 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 413.3A approved Critical Decisions (CD) are CD-1 for the Nuclear Facility (NF), Special Facility Equipment (SFE), and Radiological Laboratory/Utility/Office Building (RLUOB) phases of the project, and CD-2/3A for the RLUOB phase of the project. The CMRR CD-1 was approved on June 17, 2005 with a preliminary cost range of $745,000,000 - $975,000,000, although costs could be greater. Subsequently, the CD-2/3A for the RLUOB was approved on December 5, 2005, with a Total Project Cost (TPC) of $164,000,000. The NF and SFE are continuing with final design, while the Radiological Laboratory/Utility/Office Building is being executed with a design build contract. The TPC of the RLUOB is part of the overall CMRR Project preliminary cost range.

Based on continued examination of the project and recent, industry-wide experience related to the increases in the cost of construction of comparable facilities, the estimate for construction of the Nuclear Facility at CMRR is now viewed to be significantly higher. Initial estimates place the revised TPC above $2,000,000,000. A final cost estimate will be established when the Nuclear Facilities performance baseline is established at CD-2, which is estimated to occur during FY 2010. Funding profile reflected in Section 5 for the inclusive period of FY 2010 to FY 2013 is a funding placeholder for the construction which will be needed for the plutonium facility. This decision will result from the NEPA and PEIS process the NNSA is presently conducting.

A Federal Project Director with certification level IV has been assigned to this project.

This PDS is an update of the FY 2008 PDS.

2. Design, Construction, and D&D Schedule

(fiscal quarter or date)

	CD-0	CD-1 (Design Start)	(Design/PED Complete)	CD-2	CD-3 (Construction Start)	CD-4 (Construction Complete)	D&D Start	D&D Complete[a]
FY 2004	7/16/2002	1QFY2004	3QFY2006		2QFY2004	1QFY2011	N/A	N/A
FY 2005	7/16/2002	3QFY2004	3QFY2007		3QFY2005	3QFY2012	N/A	N/A
FY 2006	7/16/2002	2QFY2005	1QFY2007	4QFY2005	1QFY2006	4QFY2010	N/A	N/A
FY 2007	7/16/2002	9/30/2005	2QFY2007	1QFY2006	1QFY2006	1QFY2013	TBD	TBD
FY 2008	7/16/2002	9/30/2005	2QFY2009	10/21/2005	1QFY2006	1QFY2013	TBD	TBD
FY 2009	7/16/2002	9/30/2005	3QFY2010	TBD	TBD	TBD	TBD	TBD

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-2/3A RLUOB	CD-2/3B RLUOB SFE	CD-2/3C NF and NF SFE	CD-4
FY 2004				
FY 2005				
FY 2006	4QFY2005			
FY 2007	10/21/2005			
FY 2008	10/21/2005			
FY 2009	10/21/2005	1QFY2008	TBD	TBD

CD-2/3A RLUOB – Validate Performance Baseline and Start of Construction for RLUOB
CD-2/3B RLUOB SFE – Long Lead Procurement for RLUOB SFE
CD-2/3C NF and NF SFE – Validated Performance Baseline and Start of Construction for NF and NF SFE
CD-4 – Project Completion

[a] CMR D&D will not be initiated until final start-up of CMRR Nuclear Facility operations currently projected to occur no earlier than FY 2014. Inclusion of CMR D&D in the FY 2009 budget request is premature. Approval of CD-0 provides formal recognition by Department of Energy/National Nuclear Security Administration (DOE/NNSA) of the requirement for D&D of the existing CMR Building in advance of final funding determinations yet to be made as needed to support requisite programming, planning and budgeting actions in future year (FY 2010) budget submissions. This action also demonstrates NNSA/DOE compliance with the Conference Report accompanying the FY 2002 Energy and Water Development Appropriations Act (H. Rept.107-258) "one-for-one" requirements. Section 9 provides pre-conceptual cost and schedule information for CMR D&D.

3. Baseline and Validation Status[a]

(dollars in thousands)

	TEC, PED[b]	TEC, Final Design/ Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2004			500,000	100,000			600,000
FY 2005			500,000	100,000			600,000
FY 2006			750,000	100,000			850,000
FY 2007			738,097	100,000			838,097
FY 2008	65,939	672,158	738,097	100,000			838,097
FY 2009[c]	TBD	TBD	TBD	TBD	TBD	TBD	TBD

4. Project Description, Justification, and Scope

Project Description

The CMRR Project seeks to relocate and consolidate mission critical analytical chemistry, material characterization (AC/MC), and actinide research and development (R&D) capabilities, as well as providing SNM storage and large vessel handling capabilities to ensure continuous national security mission support capabilities beyond 2010 at Los Alamos National Laboratory (LANL).

Justification

In January 1999, the NNSA approved a strategy for managing risks at the CMR Building. This strategy recognized that the 50-year-old CMR Facility could not continue its mission support at an acceptable level of risk to public and worker health and safety without operational restrictions. In addition, the strategy committed NNSA and LANL to manage the existing CMR Building to a planned end of life in or around 2010, and to develop long-term facility and site plans to replace and relocate CMR capabilities elsewhere at LANL, as necessary to maintain support of national security missions. CMR capabilities are currently substantially restricted, and unplanned facility outages have resulted in the operational loss of two of seven wings at the CMR Building. These operational restrictions preclude the full implementation of the level of operations DOE/NNSA requires as documented through the Record of Decision for the 1999 LANL Site-Wide Environmental Impact Statement, and the 1996 Stockpile Stewardship and Management Programmatic Environmental Impact Statement. The CMRR project will relocate mission-critical CMR capabilities at LANL to Technical Area (TA)-55 near the existing Plutonium Facility (Building PF-4). The CMRR Project will also provide for SNM storage capabilities in order to sustain national security missions at LANL, and reduce risks to the public and workers as described in the November 2003 Final Environmental Impact Statement for CMRR and approved in the February 2004 CMRR EIS Record of Decision.

---

[a] The prior year TEC and OPC (exclusive of CMR D&D costs) reflected alternative selection and cost range information approved at CD-1, 3Q FY 2005. The estimated values provided in previous years reflected conceptual estimates for all CMRR Phases. The validated performance baseline for CMRR Phase A was attained in 1Q FY 2006. Phases B and C are not baselined. No construction funds will be used until the Performance Baselines have been validated for each respective phase of CMRR.

[b] The TEC included the cost of preliminary design ($65,000,000) appropriated in 03-D-103, Project Engineering and Design (PED) for Phases B and C.

[c] TEC, OPC and TPC will be updated upon an approved performance baseline.

Scope

The CMRR project consists of three primary elements. These elements define the basic scope and drive the acquisition strategy.

- Phase A, Radiological Laboratory/Utility/Office Building (RLUOB): Construction of a facility to house laboratory space of approximately 20,000 net square feet capable of handling radiological (<8.4g Pu^{239} equivalent) quantities of Special Nuclear Materials (SNM); a utility building sized to provide utility services (including chilled and hot water, potable hot/cold water, compressed air, and process gases) for all CMRR facility elements; office space for CMRR workers located outside of perimeter security protection systems; and space for centralized TA-55 training activities. The RLUOB is the initial element of the CMRR and is being implemented through a Design-Build (D-B) procurement approach initiated upon approval of CD-2/3(A) in October 2005. Funding for this phase will be obtained through this data sheet. Phase A - scope will be considered complete when the structures are built, approved for beneficial occupancy, and four of the twenty six radiological laboratories are equipped. The RLUOB becomes fully functional after additional special facilities equipment is procured and installed as part of Phase B.

- Phase B, Special Facilities Equipment (SFE) including gloveboxes, hoods, materials transfer system, and AC/MC instrumentation: This phase of the project was established to enable timely acquisition of long-lead specialty equipment for the CMRR project and is intended to lower overall schedule risk. Phase B will equip both Phase A (RLUOB) and Phase C (Nuclear Facility). Performance baselines for SFE/RLUOB and SFE/NF will be established after final design efforts.

- Phase C, CMRR Nuclear Facility (NF): Construction of a facility located behind perimeter security protective systems of approximately 22,500 net square feet to house Hazard Category II nuclear laboratory space for analytical chemistry/material characterization, and actinide research & development operations. Additionally, this facility will include SNM Storage and a large vessel handling capability. Operating in an integrated fashion with the existing PF-4 facility, the CMRR NF will provide the capability to produce plutonium pits for the nuclear weapon stockpile. The capability to manufacture pits is needed regardless of whether the nation decides to continue with the legacy stockpile or to transition to a Reliable Replacement Warhead. This combined capability of the CMRR-NF and PF-4 would be include flexibility to produce plutonium pits for some (but not all) legacy warheads as well as preserving the option to produce a new pit type in the event production of a Reliable Replacement Warhead is approved in the future. The facility will be sized to support a limited production capacity. The capacity will depend on the types and mix of systems to be supported. Because an RRW would require fewer process steps, the number of units which could be produced in a facility of a given square footage would be somewhat higher in comparison to the number of legacy units which could be produced in the same facility. The overall performance baseline will be established after final design. However, performance baselines on selected long lead procurement packages may be requested in 1QFY2009

The project is being conducted in accordance with the project management requirements in DOE O 413.3A and DOE M 413.3-1, Program and Project Management for the Acquisition of Capital Assets, and all appropriate project management requirements have been met.

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

5. Financial Schedule[a]

(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED[b]			
FY 2004	9,500	0	0
FY 2005	13,567	21,701	1,847
FY 2006	27,910	13,322	19,147
FY 2007	14,161	21,777	27,213
FY 2008	0	8,338	16,931
Total, PED (PED 03-D-103)	65,138	65,138	65,138
Final Design			
FY 2004	9,941	0	0
FY 2005	10,063	0	0
FY 2006	0	18,013	14,089
FY 2007	11,000	11,991	10,000
FY 2008	73,921	74,000	58,915
FY 2009	68,200	0	0
FY 2010	TBD	TBD	TBD
Total, Final Design (TEC 04-D-125)	TBD	TBD	TBD
Total, Design	TBD	TBD	TBD
Construction			
FY 2004	0	0	0
FY 2005	29,621	0	0
FY 2006	54,450	74,418	1,649
FY 2007	42,422	39,682	22,323
FY 2008	220[c]	12,613	103,409
FY 2009	32,000	32,000	31,332
FY 2010	171,965	TBD	TBD
FY 2011	225,000	TBD	TBD
FY 2012	250,000	TBD	TBD
FY 2013	250,000	TBD	TBD
FY 2014	TBD	TBD	TBD
FY 2015	TBD	TBD	TBD
FY 2016	TBD	TBD	TBD

[a] The updated estimate range has not been validated through the ESAAB process, but is a more accurate representation of the anticipated funding requirements for the project. Planning and budget beyond this appropriation year continue to be developed.

[b] CMRR Phases B and C will complete preliminary design using PED funds included 03-D-103. Final design will be completed using TEC funds included in 04-D-125.

[c] Original FY 2008 appropriation was $74,809,000. This was reduced by $667,999 as a result of a mandatory rescission in the FY 2008 Consolidated Appropriations Act (P.L. 110-161).

	(dollars in thousands)		
	Appropriations	Obligations	Costs
FY 2017	TBD	TBD	TBD
Total, Construction (TEC 04-D-125)	TBD	TBD	TBD

	(dollars in thousands)		
	Appropriations	Obligations	Costs
TEC			
FY 2004	19,441	0	0
FY 2005	53,251	21,701	1,847
FY 2006	82,360	105,753	34,885
FY 2007	67,583	73,450	59,536
FY 2008	74,141	94,951	179,255
FY 2009	100,200	32,000	31,332
FY 2010	171,965	TBD	TBD
FY 2011	225,000	TBD	TBD
FY 2012	250,000	TBD	TBD
FY 2013	250,000	TBD	TBD
FY 2014	TBD	TBD	TBD
FY 2015	TBD	TBD	TBD
FY 2016	TBD	TBD	TBD
FY 2017	TBD	TBD	TBD
Total, TEC	TBD	TBD	TBD
Other Project Cost (OPC)			
OPC except D&D			
FY 2002	1,665	1,665	1,665
FY 2003	12,174	12,174	12,174
FY 2004	7,214	7,214	7,214
FY 2005	7,165	7,165	7,165
FY 2006	1,400	1,400	1,400
FY 2007	4,865	4,865	4,865
FY 2008	7,000	7,000	7,000
FY 2009	8,000	8,000	8,000
FY 2010	TBD	TBD	TBD
FY 2011	TBD	TBD	TBD
FY 2012	TBD	TBD	TBD
FY 2013	TBD	TBD	TBD
FY 2014	TBD	TBD	TBD
FY 2015	TBD	TBD	TBD
FY 2016	TBD	TBD	TBD
FY 2017	TBD	TBD	TBD
Total, OPC except D&D	TBD	TBD	TBD
D&D[a]			
	TBD	TBD	TBD
Total, D&D	TBD	TBD	TBD

[a] Section 9 provides preliminary pre-conceptual cost and schedule information for CMR D&D.

	(dollars in thousands)		
	Appropriations	Obligations	Costs
OPC			
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
FY 2019	TBD	TBD	TBD
Total, OPC	TBD	TBD	TBD
Total Project Cost (TPC)			
FY 2002	1,665	1,665	1,665
FY 2003	12,174	12,174	12,174
FY 2004	26,655	7,214	7,214
FY 2005	60,416	28,866	9,012
FY 2006	83,760	107,153	36,285
FY 2007	72,448	78,315	64,401
FY 2008	81,114	101,951	186,255
FY 2009	108,200	40,000	39,332
FY 2010	171,965	TBD	TBD
FY 2011	225,000	TBD	TBD
FY 2012	250,000	TBD	TBD
FY 2013	250,000	TBD	TBD
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
FY 2019	TBD	TBD	TBD
Total, TPC	TBD	TBD	TBD

6. Details of Project Cost Estimate

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED & TEC)			
Design	TBD	199,064	
Contingency	TBD		
Total, Design (PED 03-D-103, TEC 04-D-125)[a]	TBD	199,064	
Construction			
Site Preparation		0	
Equipment	TBD	50,869	
Other Construction	TBD	161,552	
Contingency	TBD	75,000	
Total, Construction	TBD	287,421	
Total, PED & TEC (PED 03-D-103, TEC 04-D-125)	TBD	411,485	
Contingency, TEC		75,000	
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning			
Conceptual Design	TBD	24,895	
Start-Up	TBD	TBD	
Contingency	TBD	TBD	
Total, OPC except D&D	TBD	TBD	
D&D			
D&D	TBD	TBD	
Contingency	TBD	TBD	
Total, D&D	TBD	TBD	
Total, OPC	TBD	TBD	
Contingency, OPC			
Total, TPC	TBD	TBD	
Total, Contingency	TBD	TBD	

7. Schedule of Project Costs

For schedule of project costs, see Section 5, “Financial Schedule.”

[a] The current total estimate includes updated estimates for design only. The updated estimate range has not been validated through the ESAAB process, but is a more accurate representation of the anticipated funding requirements for the project.

8. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	4QFY2009
Expected Useful Life (number of years)	50
Expected Future Start of D&D of this capital asset (fiscal quarter)	2QFY2065

(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
Maintenance		N/A		N/A
Total, Operations & Maintenance		N/A		N/A

9. Required D&D Information

As directed by the DOE Acquisition Executive at CMRR CD-0, NNSA and LANL developed a pre-conceptual cost and schedule range for the D&D requirements of the existing CMR Building located at TA-3 during the CMRR conceptual design. The initial pre-conceptual cost estimate range for D&D of the CMR Building is approximately $200,000,000 - $350,000,000 (un-escalated FY 2004 dollars) with an associated schedule estimate range of 4-5 years. (If this cost range is escalated to FY 2012, the cost estimate range increases to $350,000,000 - $500,000,000). This information was presented as part of CMRR CD-1 per Secretarial direction issued at CD-0.

During the 3rd Quarter of FY 2005, the D&D of the existing CMR facility received CD-0 in conjunction with CMRR CD-1 approval. The receipt of CD-0 for the D&D of the CMR Facility demonstrates NNSA commitment to the Conference Report (H. Rept. 107-258) accompanying the FY 2002 Energy and Water Development Appropriations Act “one-for-one” requirement. Current Future Years Nuclear Security Program/Integrated Construction Program Plan (FYNSP/ICPP) funding profiles do not include the funding for the D&D of the CMR Facility as final funding determinations have yet to be made for inclusion in the appropriate budget year for this activity. NNSA will not initiate CMR D&D activities until completion and operational start-up of the CMRR Nuclear Facility, currently projected to be no earlier than FY 2014. As such, budget formulation for CMR D&D is premature for the FY 2009 budget submission. The inclusion of the D&D CMR Facility budget will occur upon the establishment of a project number and update of the FYNSP/ICPP in out year budget cycles.

The CMR D&D commitment is reflected in this CPDS for completeness. However, as planning for this D&D activity matures, NNSA may elect to enable this effort as a separate project, execute it as an element of a wider project or program for a portfolio of D&D activities at LANL, or bundle it with other, yet undefined activities.

Area	Square Feet
Area of new construction	400,000
Area of existing facility(s) being replaced	550,000
Area of additional D&D space to meet the “one-for-one” requirement	0

Name(s) and site location(s) of existing facility(s) to be replaced: CMR (TA-3, building 29)

10. Acquisition Approach

Design and Construction Management will be implemented by the Los Alamos National Security through the LANL Management and Operating Contract. The CMRR Acquisition Strategy is based on procurement strategies for each phase of the CMRR project in order to mitigate overall schedule risk. Phase A (RLUOB) is being implemented via LANL-issued traditional design-build subcontract based on performance specifications developed during CMRR Conceptual Design. Phases B (SFE) and C (NF) will be implemented via one or more LANL-issued final design-bid-construction contracts. The performance baseline will be established upon completion of final design for each portion of the Project.

Secure Transportation Asset

Overview

Funding Schedule by Activity

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
Secure Transportation Asset (STA)			
Operations and Equipment	134,777	128,343	131,651
Program Direction	74,760	83,180	89,421
Total, Secure Transportation Asset	**209,537**	**211,523**	**221,072**

Outyear Funding Schedule

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
Secure Transportation Asset (STA)				
Operations and Equipment	158,912	171,049	174,848	173,438
Program Direction	90,643	90,494	93,286	95,887
Total, Secure Transportation Asset	**249,555**	**261,543**	**268,134**	**269,325**

Description

The goal of the Secure Transportation Asset (STA) program is to safely and securely transport nuclear weapons, weapons components, and special nuclear materials to meet projected Department of Energy (DOE), Department of Defense (DoD), and other customer requirements.

Benefits

The STA Government Performance and Results Act (GPRA) unit contains two activities that contribute to GPRA Unit Program Goal 2.1.34.00 – Operations and Equipment, and Program Direction. Although these are two separately funded activities, the STA is managed as a single program because of its unique structure as a government owned/government operated organization. It is an agile, methodical, accountable, and reliable service to the nuclear programs with over 128,000,000 miles of transports without a release of radioactive cargo.

The workload requirements for this program will escalate significantly to support the dismantlement and maintenance schedule for the nuclear weapons stockpile and the Secretarial initiative to consolidate the storage of nuclear material. The accelerated cleanup schedule planned for Hanford by the DOE Environmental Management Program requires planning and funding for higher levels of new vehicle and equipment replacement and enhancements, as well as the recruiting and training of additional Agents. These are long-lead efforts taking as long as three years to effectively increase mission capacity. The challenge to increase the capacity of the program is coupled with and impacted by increasingly complex national security concerns and the requirements of the FY 2005 Design Basis Threat (DBT). The increasingly uncertain threat environment necessitates the implementation of force multiplier technologies and operational enhancements for intelligence gathering and front-end reconnaissance. STA will use FY 2009 resources to implement an operationally focused and intelligence driven operation, focusing on the detection and deterrence of potential threats while sustaining capabilities to defend, recapture and recover.

With planned NNSA Transformation and Stockpile Reduction and Replacement initiatives, future workload will generally exceed the STA current capacity. Nuclear material consolidation campaigns through FY 2030 will require the STA to continue building resources to meet transportation requirements. For the short term, the NNSA STA Advisory Board (STAAB) will balance and prioritize customer requests against STA capability. In the long-term, the STA will manage the accretion of resources as capacity requirements are reduced when the NNSA "Complex Transformation" initiatives are concluded.

Major FY 2007 Achievements

- Safely and securely completed 100% of shipments without compromise/loss of nuclear weapons/components or a release of radioactive material.
- Completed 113 convoy equivalents, an increase of 20 from previous year.
- Reduced the cost per convoy from $2.10M in FY 2006 to $1.69M.
- Produced 3 Safeguard Transporters (SGTs) for a total of 39.
- Provided transportation support for the W76 Life Extension Program and the W62 dismantlement.
- Provided transportation support to complete the dismantlements of the B53 and W56 weapons.
- Safely and securely shipped 1,059 weapons, 4,632 containers of special nuclear material, 55 Joint Test Assemblies, 2,310 Limited Life Components, and 620 gas/neutron generators.
- Began the construction phase for Central Federal Agent Facility (FAF) Command.
- Awarded a new Aviation Services contract.
- Completed the Nuclear Explosives Safety Study (NESS) review of the B53. Accelerated move schedule may result in meeting requirements one year in advance.
- Completed construction of Agent Operations Facility in Oak Ridge, TN.
- Received Facility and Site Development proposals for the Albuquerque Transportation and Technology Center.
- Hosted and supported a conference with French military personnel on transportation security techniques at the STA central training facility at Fort Chaffee, Arkansas.
- Completed the testing and accepted for use the prototype cargo pallet that will increase convoy package capability and reduce the time for loading operations. Funding for production will need to be identified.
- Established a Leadership Development Plan to support the career progression of Federal Agents and staff.

- Conducted a coordination meeting with British officials on international shipments.

- Provided direct manpower support to the Human Resources and Security elements of NNSA to expedite processing of new Agent applications and security clearance reviews.

- Achieved Federal Agent end strength of 351.

- Provide security support to Pantex during the guard force strike with no impact to mission schedules.

- Established full-time intelligence positions at Northern Command (NORTHCOM) and at the DOE Office of Intelligence.

Major Outyear Priorities and Assumptions

The primary objective of the STA program is to continue completing 100 percent of shipments safely and securely without compromise/loss of nuclear weapons/components or a release of radioactive material. In order to support the escalating workload requirements, while maintaining the safety and security of shipments, the STA program will increase the cumulative number of Safeguard Transporters in operation for a total of 51 in FY 2011. The STA program also intends to add additional Agents up to a total Agent force of 420 by the end of FY 2009. The mission costs of these additional Agents, along with their training and equipment, will increase outyear expenditures. The implementation of a disciplined transportation planning process across the complex will result in transportation schedules that balance workload requirements, training, maintenance, and Agent quality of life.

A major priority will be the replacement of the aging aviation assets. Two DC-9s and one C-9 have reached the end of their effective life-cycle. STA plans to acquire a total of three transport category aircraft. One 737 type aircraft will be purchased each year in FY 2010, FY 2011, and FY 2012 to replace the aging aircraft which will be disposed.

The increase cost of fuel for over-the-road vehicles and aircraft is a significant challenge. It is estimated that fuel costs to the STA program will increase by over $2,300,000 from FY 2008 to FY 2009. This is without a significant increase in road hours and with a reduction in aviation hours.

Program Assessment Rating Tool (PART)

The Department implemented a tool to evaluate selected programs. The PART was developed by the Office of Management and Budget (OMB) to provide a standardized way to assess the effectiveness of the Federal Government's portfolio of programs. The structured framework of the PART provides a means through which programs can assess their activities differently than through traditional reviews. The STA program has incorporated feedback from the OMB into the FY 2009 Budget Request, and has taken or will take the necessary steps to continue to improve performance.

The results of the OMB review are reflected in the FY 2006 Budget request. The OMB gave the STA program scores of 100 percent on the Purpose and Design, and Strategic Planning Sections; 86 percent on the Program Management Section; and 67 percent on the Results Section. Overall, the OMB rated the STA 81 percent, its second highest rating of "Moderately Effective." The OMB assigned these scores based on the fact that the STA Program is well managed, has a clear and unique purpose, and clear, meaningful, and measurable performance metrics that the program is demonstrating good progress in meeting. The OMB assessment found that funds were spent for their intended purpose but the unique nature of the organization results in year-end uncosted balances that are higher than other programs. In

addition, the OMB observed that independent evaluations of program effectiveness had not been completed recently to validate prior assessments. In response to the OMB findings, the STA increased the number of supporting accounts to increase management's flexibility in responding to changing security conditions and mission priorities and to improve obligation and costing of funds. The STA established an internal independent assessment branch to ensure more frequent independent evaluations. The NNSA is also continuing to improve the responsiveness of the Nuclear Weapons Complex infrastructure by coordinating program activity with the Nuclear Weapons Complex Transformation Strategy Record of Decision and by integrating program requirements into the new Defense Programs National Level Work Breakdown Structure.

Annual Performance Results and Targets

(R = Results; T = Targets)

Performance Indicators	FY 2005 Results	FY 2006 Results	FY 2007 Results	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Endpoint Target
Strategic Goal 2.1 (Nuclear Deterrent) GPRA Unit Program Goal 2.1.34.00, Secure Transportation Asset										
Annual percentage of shipments completed safely and securely without compromise/loss of nuclear weapons/components or a release of radioactive material (Annual Outcome)	R: 100%	R: 100% T: 100%	R: 100% T: 100%	T: 100%	T: 100%	T: 100%	T: 100%	T: 100%	T: 100%	Annually, ensure that 100% of shipments are completed safely and securely without compromise/loss of nuclear weapons/components or a release of radioactive material.
Annual cost per convoy expressed in terms of millions of dollars (Efficiency)	R: $1.90	R: $2.10 T: $1.80	R: $1.69 T: $1.80	T: $1.79	T: $1.76	T: $1.73	T: $1.70	T: $1.67	T: $1.65	By FY 2013, achieve a cost per convoy equivalent of $1.65M. [a]
Annual number of secure convoys completed (Annual Output)	R: 106 T: 105	R: 93 T: 115	R: 113 T: 115	T: 118	N/A	N/A	N/A	N/A	N/A	By FY 2008, achieve 118 convoy equivalents. [a]
Annual percentage of Transportation Shipping Requests (TSRs) delivered by the scheduled delivery date (Annual Output) [d]	N/A	N/A	N/A	N/A	T: 90%	T: 90%	T: 90%	T: 90%	T: 90%	Annually, ensure that 90% of TSRs are delivered by the scheduled delivery date.
Cumulative number of Safeguard Transporters (SGTs) in operation (Long-term Output)	R: 33 T: 33	R: 36 T : 36	R: 39 T: 38	T: 42	T: 45	T: 48	T: 51	T: 51	T: 51	By FY 2011, achieve an operational SGT fleet of 51. [b]
Annual percentage of Unit Readiness to perform assigned convoy mission-weeks (Annual Output) [c]	N/A	N/A	N/A	N/A	T: 80%	T: 80%	T: 80%	T: 80%	T: 80%	Annually, ensure Operational Units have an 80% readiness rate to perform assigned convoy mission-weeks.
Cumulative number of Federal Agents at the end of each year (Long-term Output)	R: 318 T: 335	R: 324 T: 355	R: 351 T: 355	T: 385	T: 420	N/A	N/A	N/A	N/A	By the end of FY 2009, achieve end strength of 420 Agents. [c]

[a] FY 2007 and out-year targets are adjusted to track with expected number of trained agents, projected workload and budget reductions. The adjusted targets reflect the implementation of the new DBT requirements that go into effect in FY 2009. Endpoint target for cost per convoy was adjusted to $1.65M by FY 2013.

[b] Due to resource constraints, beginning in FY 2007, SGT production was slowed to 2 per year. During the year, management and asset allocation enabled the production line to return to three per year. The targets for FY 2008 through FY 2011 reflect the resumption of three SGTs per year.

[c] Since FY 2005, the STA has had difficulty in filling the recruit classes with qualified personnel due to security clearance processing. In FY 2007, the STA provided additional manpower to the human resource and security clearance elements of NNSA to expedite application and clearance processing. These efforts are expected to significantly increase class size and ensure that the FY 2009 target is met.

[d] New measures were approved in 2007 to begin in FY 2009.

Secure Transportation Asset

Operations and Equipment

Funding Schedule by Activity

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
Operations and Equipment			
Mission Capacity	104,072	72,372	74,057
Security/Safety Capability	10,994	18,167	20,617
Infrastructure and C4 Systems	15,517	29,756	25,978
Program Management	4,194	8,048	10,999
Total, Operations and Equipment	**134,777**	**128,343**	**131,651**

Outyear and Over Target Funding Schedule

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
Operations and Equipment				
Mission Capacity	103,733	114,586	117,688	112,852
Security/Safety Capability	17,161	17,597	17,816	18,883
Infrastructure and C4 Systems	25,538	26,094	26,416	28,000
Program Management	12,480	12,772	12,928	13,703
Total, Operations and Equipment	**158,912**	**171,049**	**174,848**	**173,438**

Within the STA Operations and Equipment Activity, each of four subprograms make unique contributions to the GPRA Unit Program Goal 2.1.34 regarding the safety and security of the nuclear stockpile. These subprograms accomplish the following: (1) Mission Capacity: provides Agent candidate training for an increasing new Agent force, provides mission-essential Agent equipment, maintains and expands the transportation fleet, provides aviation services, optimizes transport operations, and utilizes contract drivers to move empty vehicles; (2) Security/Safety Capability: develops and implements new fleet technologies, intensifies Agent training, and implements Security, /Safety, and Emergency Response programs; (3) Infrastructure and command, control, and communications systems (C4ISR): provides facility maintenance, support for construction projects, and C4 systems; (4) Program Management: provides corporate functions and business operations that control, assist, and direct secure transport operations.

Detailed Justification

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
Mission Capacity	**104,072**	**72,372**	**74,057**

Provides support to the program objective of raising and maintaining the mission capacity of the STA program to meet projected workloads. This goal includes the following activities: (1) Annually, conducts two Agent Candidate Training classes to increase the Agent end-strength to 420 Agents by the end of FY 2009. Funding supports the recruiting, equipping, and training of approximately 80 students**.** (2) Replaces the aging vehicle fleet with newly designed vehicles. Funding supports the design, engineering, testing, and fielding of specialized vehicles and trailers that counter current threat scenarios. (3) Maintains readiness posture of the STA fleet. Funding supports the inspection, testing, and maintenance of escort vehicles, secure trailers, armored tractors, mobile communication and defensive systems. It also supports the operation of three vehicle maintenance facilities.
(4) Optimizes the use of agent time through the use of contract drivers, government aircraft, and computer-based planning systems. Contract drivers stage and return empty mission vehicles and trailers to their appropriate destinations. Aircraft are used to move Agents and contract drivers to staging points to minimize travel time. Aircraft are also used to support the Limited Life Components Program and support emergency response for the Nuclear Emergency Search Team (NEST), Accident Response Group (ARG), Radiological Assistance Program (RAP), and Joint Tactical Operations Team (JTOT). Funding supports the operation and maintenance of two DC-9s, one C-9, one G3, one Learjet 35, and two Twin Otters.

As a result of the events of September 11, 2001, and the maintenance of the nuclear weapon stockpile, requirements for the forty-year old aircraft have increased. The reliability of aviation services is diminishing due to a shortage in replacement parts and technical support.

The STA plans to purchase escort vehicles to address vehicle shortages. The additional vehicles are required to meet projected workload, replace aging vehicles and initiate a steady state lifecycle. The increase and replacement of aging vehicles will enable the STA to meet the mission requirements without potentially putting the convoys at risk.

In FY 2009, specific activities focus on an intelligence-driven, mission focused organization. STA will continue to incrementally increase the Federal Agent Force, equipment and training tempo to meet DBT and workload requirements. Workload requirements will be allocated among the National Defense priorities as established by the Secure Transportation Asset Advisory Board. Since the Department is moving forward aggressively to dispose and consolidate materials in the FY 2009 to FY 2013 timeframe, these activities will require expansion of the STA systems capacity through equipment purchases and increased manpower (from four Operational Units to six) to fulfill the present schedule.

Security/Safety Capability	**10,994**	**18,167**	**20,617**

Provides support to the program objective of strengthening the STA security and safety capability. This goal includes the following sub-elements: (1) Identifies, designs, and tests new fleet and mission technologies. Funding supports on-going upgrades and enhancements to the secure trailers, the implementation of intelligence gathering/dissemination systems and the application of emerging physical security technology. (2) Sustains and supports intensified training. Funding supports the

technical equipment, logistics, curriculum development, and staffing necessary to conduct Special Response Force (SRF), Operational Readiness Testing (ORT), and Agent sustainment training. (3) Maintains security and safety programs. Funding supports liaison with state and local law enforcement organizations; maintaining a human reliability program for Federal Agents and staff; analyzing security methods and equipment; conducting vulnerability assessments; developing the Site Safeguards and Security Plan (including Force-on-Force validation exercises), and combat simulation computer modeling; and conducting safety studies and safety engineering for the Safety Basis, Nuclear Explosive Safety, and over-the-road safety issues. (4) Maintains the NNSA Emergency Operations Center (EOC) in Albuquerque, NM, as well as trains and exercises the STA response capability. Funding supports the Emergency Management Program to include Federal Agent Incident Command System refresher and sustainment training.

The focus in FY 2009 will be to operate the Transportation Safeguards System (TSS) within the safety and security licenses, based on the updated/upgraded Site Safeguards and Security Plan, and maintaining Agent skills to meet the DBT requirements.

Infrastructure and C4 Systems	**15,517**	**29,756**	**25,978**

Provides support to the program goal of expanding, modernizing, and maintaining the physical platforms that the STA operates. This goal includes the following sub-elements: (1) Modernize and maintain classified command, control, and communications (C4) systems activities to enhance required oversight of nuclear convoys. Funding supports operation of the Transportation Emergency Control Centers; communications maintenance; electronic systems depot maintenance; and the costs for operating relay stations in five states. (2) Expand, upgrade and maintain the STA facilities and equipment to support the increase in Federal Agents and workload. Funding supports the utilities, maintenance, upgrades, required expansion projects, and leases for 80 facilities and their respective equipment.

The FY 2009 focus will be on the completion of various facility projects, including procurement of furniture and identifying IT requirements associated with the Albuquerque Transportation Technology Center (ATTC) project in cooperation with the General Services Administration. The vehicle communication systems will also be upgraded to meet regulatory requirements and maintain the most current technology base. Initial work will be done on the Transportation Command and Control System (TCCS) database to enable it to support larger convoys and an increased workload. Changes to the communications architecture will be implemented to ensure system redundancy and eliminate bottlenecks.

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
Program Management	**4,194**	**8,048**	**10,999**

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 and business operations that control, assist, and direct secure transport operations. Includes supplies, equipment and technical document production and regulation. (2) Assess, evaluate and improve work functions and processes. Funding supports quality studies, self-inspections, professional development, Joint Testing Exercises (JTX), routine STA intranet web support, configuration management, and business integration activities.

Total, Secure Transportation Asset, Operations and Equipment	**134,777**	**128,343**	**131,651**

Explanation of Funding Changes

	FY 2009 vs. FY 2008 ($000)
Mission Capacity	
The increase is attributable to procurement of escort vehicles to address the vehicle shortage and the rising costs of fuel. The vehicles are required to meet projected workload, replace aging vehicles and initiate a steady state lifecycle.	+1,685
Security/Safety Capability	
The increase is associated with the cost of implementing and maintaining an effective Human Reliability Program for approximately 80 additional Federal Agents and staff. In addition, increased Federal Agent training (e.g., ORT, SRF, and JTX) and equipment are essential to maintain critical skills necessary to defend against evolving threats.	+2,450
Infrastructure and C4 Systems	
The decrease is a result of the completion of necessary procurements required to furnish the new Federal Agent Facilities at the Eastern and Central Commands and to support the necessary programmatic shifts to Security/Safety Capability and Program Management.	-3,778
Program Management	
The net increase will provide for general site support to all STA Federal Agent Commands to include the additional 80 agents. Support includes supplies, equipment and services required to maintain Federal Agent qualifications and mission-related duties, and also supports the staff at STA facilities. Supports the internal review and oversight functions, which assess Agent training venues, contractor performance and transportation activities to ensure compliance with laws and regulations. Supports management's flexibility in responding to changes in security conditions, mission priorities and overall fiscal responsibilities.	+2,951
Total Funding Change, Operations and Equipment	**+3,308**

Capital Operating Expenses and Construction Summary

Capital Operating Expenses

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
General Plant Projects	3,800	9,873	0
Capital Equipment	3,000	3,000	3,000
Total, Capital Equipment	**6,800**	**12,873**	**3,000**

Outyear Capital Operating Expenses

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
General Plant Projects	0	0	0	0
Capital Equipment	21,100	21,200	21,200	10,300
Total, Capital Equipment	**21,100**	**21,200**	**21,200**	**10,300**

Capital operating expenditures are associated with procurement of specialized escort vehicles for all fiscal years. The additional vehicles are required to meet projected workload, replacing aging vehicles and initiate a steady state lifecycle. Escort vehicles are critical in providing safe and secure transportation support to the increased workload associated with material consolidation and Complex Transformation initiatives.

In FY 2010 through FY 2013, the increased capital expenditures are for the purchase of 737 type aircraft. In FY 2013, funding will support the modification of aircraft cargo doors to meet future payload configurations.

Secure Transportation Asset

Program Direction

Funding Schedule by Activity

	FY 2007	FY 2008	FY 2009
Program Direction			
Salaries and Benefits	63,983	73,244	75,226
Travel	7,800	8,741	10,188
Other Related Expenses	2,977	1,195	4,007
Total, Program Direction	**74,760**	**83,180**	**89,421**
Total, Full Time Equivalents	**536**	**585**	**647**

Outyear and Over Target Funding Schedule

	FY 2010	FY 2011	FY 2012	FY 2013
Program Direction				
Salaries and Benefits	75,725	76,304	78,016	80,700
Travel	11,331	10,794	11,809	12,138
Other Related Expenses	3,587	3,396	3,461	3,049
Total, Program Direction	**90,643**	**90,494**	**93,286**	**95,887**
Total, Full Time Equivalents	**677**	**677**	**667**	**667**

STA Program Direction makes unique contributions to the GPRA Program Unit Goal 2.1.34 regarding the safety and security of the nuclear stockpile by providing personnel to: (1) conduct armed escorts of nuclear weapons, material, and components; (2) track nuclear convoys and provide emergency response capability; (3) perform staff oversight of three Federal Agent commands; (4) supervise the design and implementation of classified security technologies; (5) provide critical skills training to the Federal Agent force and staff; (6) staff and operate the Training and Logistics Command and conduct of two 18-week training classes per year for new Agents; and (7) perform administrative and logistical functions for the organization.

Detailed Justification

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
Salaries and Benefits	**63,983**	**73,244**	**75,226**

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

Travel	**7,800**	**8,741**	**10,188**

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

Other Related Expenses	**2,977**	**1,195**	**4,007**

Provides required certification training for the handling of nuclear materials by Federal Agent forces, as well as staff professional development. Provides for Permanent Change of Station (PCS) moves and other Contractual Services.

Total, Program Direction	**74,760**	**83,180**	**89,421**

Explanation of Funding Changes

	FY 2009 vs. FY 2008 ($000)
Salaries and Benefits	
The increase is due to the addition of Federal Agents and direct operational secondary personnel. The increase reflects the impact of conducting two forty person Agent candidate training (ACT) classes in FY 2008. The full cost impact of the Agents hired in the last class of any given fiscal year is not realized until the following fiscal year. Therefore, the larger number of individuals in the last class of FY 2008 will have transitioned from students to Agents; consequently, there will be significant increases in salaries, benefits, and overtime. There will also be an increase in support staff positions because of the larger Agent force. Since projected workload still exceeds capability, the addition of more Agents will result in more total overtime hours and thus increase overtime costs.	+1,982
Travel	
The increase reflects higher travel costs associated with a larger agent/support force. With the addition of Federal Agents and secondary positions there are additional travel costs both for missions and for training purposes.	+1,447
Other Related Expenses	
The increase supports training costs associated with the increased number of Federal Agents and support staff. Training is required to maintain skills, proficiencies, and qualifications.	+2,812
Total Funding Change, Secure Transportation Asset, Program Direction	**+6,241**

Nuclear Weapons Incident Response

Funding Schedule by Activity[a]

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
Nuclear Weapons Incident Response			
Emergency Response (Homeland Security)[b]	117,549	131,455	136,448
Emergency Management (Homeland Security)[b]	6,587	6,479	7,658
National Technical Nuclear Forensics (Homeland Security)[b]	0	12,000	12,945
Operations Support (Homeland Security)[b]	9,378	8,721	8,461
International Emergency Management and Cooperation	0	0	4,655
Nuclear Counterterrorism (Homeland Security)[b]	0	0	51,769
Total, Nuclear Weapons Incident Response	**133,514**	**158,655**	**221,936**

Outyear Funding Schedule

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
Nuclear Weapons Incident Response				
Emergency Response (Homeland Security)[b]	143,556	149,210	155,644	163,195
Emergency Management (Homeland Security)[b]	8,340	8,759	9,192	9,654
National Technical Nuclear Forensics (Homeland Security)[b]	13,592	14,272	14,985	15,735
Operations Support (Homeland Security)[b]	8,963	9,411	9,882	10,377
International Emergency Management and Cooperation	4,730	4,730	4,730	4,730
Nuclear Counterterrorism (Homeland Security)[b]	50,480	48,829	47,992	47,256
Total, Nuclear Weapons Incident Response	**229,661**	**235,211**	**242,425**	**250,947**

Description

The Nuclear Weapons Incident Response (NWIR) 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.

The National Nuclear Security Administration (NNSA) Emergency Operations program remains the United States (U.S.) government's primary capability for radiological and nuclear emergency response and for providing security to our nation from the threat of nuclear terrorism. Through the development, implementation and coordination of programs and systems designed to serve as a last line of defense in

[a] Effective June 1, 2007, the Office of International Emergency Management and Cooperation was functionally transferred from the Office of Defense Nuclear Nonproliferation (DNN) to NWIR in an effort to consolidate emergency mission, functions, authorities and activities within NNSA. Funding that will be managed by the NWIR program, but still reside in the DNN budget, is $5,430,000 for FY 2007 and $6,249,000 for FY 2008 reflecting planned program activities including increases for the Bratislava Agreement. Effective December 2007, the Office of Nuclear Counterterrorism Design Support was functionally transferred from the Office of Defense Programs to NWIR in an effort to consolidate emergency mission, functions, authorities and activities within NNSA. FY 2008 funds ($53,000,000) will reside in DP; however, NWIR will manage the program.

[b] OMB Homeland Security designation.

the event of a nuclear terrorist incident or other types of radiological accident, the Office of Emergency Operations maintains a high level of readiness for protecting and serving the U.S. and its allies – a readiness level that provides the U.S. Government with quickly deployable, dedicated resources capable of responding rapidly and comprehensively to nuclear or radiological incidents worldwide. The September 11, 2001, attacks signaled a major change in both the intelligence picture and the tactics of the terrorists. Accordingly, the country's, as well as NWIR's, national response posture has changed to meet the new challenges in the war against terrorism especially those related to countering nuclear terrorism. The result has been NWIR's increasing focus on redefining relationships with old partners such as the Federal Bureau of Investigation (FBI), and defining relationships with new partners, such as the Department of Homeland Security (DHS). Even as basic emergency operations activities continue to increase, NWIR increasingly serves as the Federal Government's comprehensive defense of the nation against the nuclear terrorism threat.

Since FY 2006, NWIR manages the activities and funding for the Emergency Operations Centers and threat assessment within the "Operations Support" activity. Also, effective June 1, 2007, the Office of International Emergency Management and Cooperation transferred from the Office of Defense Nuclear Nonproliferation to the NWIR program in an effort to consolidate emergency mission, functions, authorities and activities within NNSA. In December 2007, the Office of Nuclear Counterterrorism Design Support was also functionally transferred from the Office of Defense Programs to NWIR to consolidate activities within NNSA aimed at countering nuclear terrorism.

The International Emergency Management and Cooperation subprogram reduces the risks of international nuclear and radiological events by strengthening emergency preparedness and response capabilities worldwide and radioactive operations through information sharing, program coordination, and technical assistance to foreign governments and international organizations.

In FY 2006, NWIR fully implemented its single Readiness measure after testing its concepts for three quarters in FY 2005. Readiness encompasses trained personnel, reliable and operational equipment and communications ready to respond to and mitigate nuclear and radiological incidents worldwide. This puts NWIR's focus on what is critically important, ties the measure to nearly 100 percent of the program's budget, forces a focus on all problem areas, and makes performance measurement a powerful management tool.

This budget includes continued funding for the Render Safe Research and Development Program and provides additional funds for standup of the Stabilization Implementation (within Emergency Response) and National Technical Nuclear Forensics (NTNF) programs. It further accomplishes some minor reprioritization of requirements and includes price growth at approved escalation rates. There is virtually no program growth in the base program.

This Program budget represents the minimum required to accomplish vital national security missions. It assumes that the Department of Homeland Security will provide the funding required by the Homeland Security Act of 2002.

The entire Nuclear Weapons Incident Response program is a homeland security related activity, with the exception of the International Emergency Management and Cooperation program, a national security related function.

Within the Nuclear Weapons Incident Response program, the Emergency Response HS, Emergency Management HS, and Operations Support HS subprograms each make unique contributions to GPRA

Unit Program Goal 2.1.35.00. The Emergency Response HS maintains and provides specialized technical expertise in response to nuclear/radiological incidents, including those involving nuclear weapons. These capabilities include immediate situation resolution, longer-term consequence management, and issues relating to human health. These response teams include the Nuclear Emergency Support Team (NEST) and other assets. The Emergency Management HS provides for the comprehensive, integrated emergency planning, preparedness, and response programs throughout the Department's field operations. The program develops and implements specific programs, plans and systems to minimize the impact of emergencies on national security, worker and public safety, and the environment. The program oversees the implementation of emergency management policy, preparedness, and response activities within the NNSA. Operations Support activities support Headquarters' emergency response operations through the Headquarters' Watch Office and Operations Center. Program staffs participate in tests and exercises to improve communication and notification capabilities and procedures. NWIR manages and operates the Headquarters Emergency Communications Network to facilitate unclassified and classified videoconferences in support of Department-wide task forces, meetings/briefings, exercises/drills and site emergencies.

Major FY 2007 Achievements

- Deployed multiple field teams to conduct 19 operational deployments in support of Homeland Security, including National Special Security Events, National Security Events, and elevated threats. These included: USG State Funeral; State of the Union; Super Bowl; several NASCAR events; Marine Corps Marathon; MLB All-Star Game; and Rolling Thunder.

- Participated in 35 interagency national and international counter terrorism exercises, including: Marble Challenge, TOPOFF 4; Ardent Sentry 07; Marble Challenges; and several preparatory activities for Diablo Bravo, and NNSA-led nuclear weapon accident exercise.

- Participated in Pinnacle 07, a major interagency continuity exercise.

- Continued support to the FBI of its render safe capability and conducted field tests of most promising technologies.

- Stood up the Cytogenetic Biodosimetry Laboratory in March 2007 which uses a very sensitive chromosome analysis to determine acute doses to humans during a radiation accident or incidents. This blood test provides the "gold standard" for clinical dose assessments.

- Continued global initiative to combat Nuclear Terrorism through outreach efforts and ongoing support to the interagency and international effort designed to improve the capabilities of participant nations for response, mitigation, and investigation of terrorist use of nuclear and radioactive materials. Individual conferences included Morocco, Turkey, Australia and Miami, Florida.

- Improved the capability of triage, a radiological reach-back capability, to provide first responders with expert analysis of detector readings and enhanced hands-on training and workshops.

Major Outyear Priorities and Assumptions

The outyear projections for Nuclear Weapons Incident Response total $958,244,000 for FY 2010 through FY 2013. The trend through the five-year period is increasing and reflects funding growth in two specific areas of the program - National Technical Nuclear Forensics and Stabilization Implementation. These initiatives support scientific breakthroughs for Render Safe Research and

Development and the Technical Integration programs and implementation of National Technical Nuclear Forensics for pre- and post-detonation phases and the Stabilization aspect of nuclear emergencies through development of first generation stabilization equipment including training and maintenance programs to selected teams nationwide in support of better emergency response capability.

NWIR outyear budgets will concentrate on the programs that contribute the most to vital national security missions.

Deferred requirements will be reprioritized based on fact of life changes. The program will focus to correct deficiencies surfaced by quarterly evaluation of the readiness performance measure, and necessary upgrades to Emergency Operations Centers.

Program Assessment Rating Tool (PART)

The Department implemented a tool to evaluate selected programs. The PART was developed by the Office of Management and Budget (OMB) to provide a standardized way to assess the effectiveness of the Federal Government's portfolio of programs. The structured framework of the PART provides a means through which programs can assess their activities differently than through traditional reviews.

The current focus is to establish outcome- and output-oriented goals, the successful completion of which will lead to benefits to the public, such as increased national security and energy security, and improved environmental conditions. DOE has incorporated feedback from the OMB into the FY 2009 Budget Request, and the Department will take the necessary steps to continue to improve performance.

The results of the OMB review are reflected in the FY 2008 Budget Request. The OMB gave NWIR scores of 100 percent on the Program Purpose and Design, Strategic Planning, and Program Management Sections; and 67 percent on the Program Results and Accountability Section. Overall, the OMB rated the NWIR program 84 percent, its second highest category of “Moderately Effective.”

The OMB assessment found that the program has improved its ability to respond to nuclear or radiological incidents worldwide and made progress throughout the year in the areas of personnel, training, equipment review of security plans, and equipment deliveries. Additionally, the OMB assessment found NWIR has an excellent track record in responding to emergencies and events with national security implications, and has made progress in holding its contractors accountable for achieving cost savings. In response to the OMB findings, the NWIR program is continuing to investigate the source of impediments to the program’s ability to respond to and mitigate nuclear and radiological incidents worldwide, improve the coordination of priorities across all field offices, and assess emergency response capabilities to help program managers identify and fix deficiencies.

Annual Performance Results and Targets

(R = Results; T = Targets)

Performance Indicators	FY 2005 Results	FY 2006 Results	FY 2007 Results	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Endpoint Target
Strategic Goal 2.1 (Nuclear Deterrent) GPRA Unit Program Goal 2.1.35.00, Nuclear Weapons Incident Response										
Emergency Operations Readiness Index 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 where as the year end will be expressed as the average readiness for the year's four quarters) (Efficiency)	R :71	R: 82 T: 91	R: 91 T: 91	T: 91	T: 91	T: 91	T: 91	T: 91	T: 91	Annually, maintain an Emergency Operations Readiness Index of 91 or higher.

Detailed Justification

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
Emergency Response (Homeland Security)	**117,549**	**131,455**	**136,448**

The Office of Emergency Response serves as the last line of national defense in the face of a nuclear terrorist incident or other type of radiological accident. The mission is to protect the public, environment, and the emergency responders from terrorist and non-terrorist events by providing a responsive, flexible, efficient, and effective radiological emergency response framework and capability for the Nation by applying NNSA's unique technical expertise resident within the Department of Energy (DOE) complex. The strategic approach for emergency response activities is to ensure a central point of contact and an integrated response to emergencies. Specific attention is focused on providing the appropriate technical response to any nuclear emergency within the Department, the U.S. and abroad. This is accomplished by ensuring that the appropriate infrastructure is in place to provide command, control, communications, and properly organized, trained and equipped response personnel to successfully resolve an emergency event.

- **Nuclear Emergency Support Team (NEST)** **92,799** **89,818** **90,830**

  Under the provisions of the Atomic Energy Act of 1954 and Presidential Decision Directives 39 and 62, government agencies are directed to plan for, train, and resource a robust capability to combat terrorism, especially in the area of Weapons of Mass Destruction (WMD). The Nuclear Emergency Support Team (NEST) program was initiated in 1974 to provide DOE/NNSA technical assistance to a Lead Federal Agency (LFA), whether it be DHS, DOE, FBI, Environmental Protection Agency (EPA), Nuclear Regulatory Commission (NRC), or Department of Defense (DOD), to deal with incidents, including terrorist threats, that involve the use of nuclear materials. NEST is comprised of three functional elements in the detection of nuclear devices: searching for, rendering safe, and command and control of the asset. Furthermore, there are six primary teams dedicated to the execution of these functions: Accident Response Group (ARG), Radiological Assistance Program (RAP), Nuclear/Radiological Advisory Team (NRAT), Search Response Team (SRT), Joint Technical Operations Team (JTOT), and Lincoln Gold Augmentation Team (LGAT). The NEST program has been structured to address threats posed by domestic and foreign terrorists likely to have both the will and means to employ WMD. The NEST response assumes that such an act might occur with little, if any, advanced warning.

  Under such circumstances, NEST would respond to assist in the identification, characterization, rendering safe and final disposition of any nuclear weapon or radioactive device. Additionally, NEST has the capability to search for possible additional devices that may have been emplaced. Finally, the NEST Technology Integration program keeps responders equipped with cutting edge equipment and analysis methods.

  This budget reflects funding resources in support of the NEST Render Safe R&D program, which was realigned in FY 2007 from the Defense Nuclear Nonproliferation appropriation.

- **Other Assets** **24,750** **25,637** **26,919**

  The HS Emergency Response program also maintains the following additional assets to provide assistance to local, state and other federal agencies and conduct exercises in response to emergencies involving nuclear/radiological materials as well as the detection of biological agents.

Additionally, these assets provide support to the NEST programs to ensure the safe resolution of an incident and protect public safety and the environment.

- The Aerial Measuring System (AMS) detects, measures, and tracks radioactive material at an emergency scene to determine contamination levels using fixed wing and rotary aircraft.
- The Atmospheric Release Advisory Capability (ARAC) develops and disseminates predictive plots generated by sophisticated computer models.
- The Consequence Management Teams provide the technical capabilities to assist and coordinate federal radiological monitoring and assessment activities and effects with DHS, Federal Emergency Management Agency (FEMA), NRC, EPA, DOD, state and local agencies, and others.

The Radiation Emergency Assistance Center/Training Site (REAC/TS) provides treatment and medical consultation for injuries resulting from radiation exposure and contamination and serves as a training facility. Additionally, REAC/TS provides training to the medical community and maintains a database of medical responders trained to treat radiation injuries within the U.S. and abroad.

- **Stabilization Implementation** **0** **16,000** **18,699**

Stabilization Implementation was a program element initiated for NWIR in FY 2008. The Stabilization Implementation program will endeavor to leverage and develop Render Safe technologies that can be applied by teams, without extensive training, to isolate and stabilize a nuclear device until the national response team arrive to render it safe.

The Render Safe Research and Development (R&D) Program looks at the stabilization aspect of nuclear emergencies. Research is promising, and it is envisioned that technological breakthroughs in the Stabilization R&D Program will make development of first generation equipment possible. The requested funding will make it a reality. Currently, the Stabilization R&D portfolio is focused on delay technologies. The Stabilization Implementation program will expand this portfolio into isolation technologies, leveraged from R&D conducted by other government agencies. The funding requested for Stabilization Implementation will facilitate the interchange of information between NWIR and other agencies; develop the concept of operations for stabilization teams with the FBI; and deploy the first generation of stabilization equipment for operational testing (including training programs) to selected teams across the country, thus improving the national emergency response capability and fully integrating this technology with response elements and associated deployed technologies.

National Technical Nuclear Forensics (Homeland Security) **0** **12,000** **12,945**

The National Technical Nuclear Forensics (NTNF) was also initiated in FY 2008, which supports implementation of Operations and R&D as well as build upon nuclear disposition activities already underway. The NTNF program is a HSC/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 including training and exercises, equipment purchases and maintenance, logistics, and deployment readiness to support ground sample collection and Deployable Field Laboratory operations. For DOE/NNSA, major program elements include:

- concept of operations development and techniques, tactics and procedures

- modeling, signatures development, knowledge base and data management
- support to FBI in collection of pre-detonation device forensics evidence
- support G-Tunnel operational support to NTNF
- support to FBI in collection and analysis of post-detonation ground samples
- establish Home Team capability
- training and exercises

Emergency Management (Homeland Security) 6,587 6,479 7,658

The Office of Emergency Management develops and implements specific programs, plans, and systems to minimize the impacts of emergencies on worker and public health and safety, the environment, and national security. This is accomplished by promulgating appropriate Departmental requirements and implementing guidance; developing and conducting training and other emergency preparedness activities; supporting readiness assurance activities; and, participating in interagency activities. The objective is to have a fully implemented and fully integrated Departmental comprehensive emergency management system throughout the DOE complex.

The Office of NNSA Emergency Management Implementation is responsible for implementing and coordinating emergency management policy, preparedness, and response activities with NNSA, including managing the NNSA Headquarters emergency preparedness and response effort and coordinating NNSA field and contractor implementation of DOE and NNSA emergency management policy. This office serves as the single point of contact for coordinating among NNSA Headquarters offices, site offices, sites, facilities, and contractors to ensure compliance with, and implementation of, Departmental and NNSA-specific emergency management policy, plans and performance expectations.

The Emergency Operations Training Academy is an academically accepted training and development center that remains on the cutting edge of technology and innovation. It is the Emergency Operations point of service for training development and oversight.

The Continuity of Operations Programs (COOP) continues to include responsibility for all of DOE. These programs develop the Headquarters and the field Continuity of Operations plans that are updated constantly. Periodic training and exercises are required. NNSA and DOE continue to participate in major interagency exercises sponsored by DHS on an annual basis. Beginning in FY 2008, funding is included for Continuity of Government activities previously funded by the former Office of Security and Safety Performance Assurance.

Operations Support (Homeland Security) 9,378 8,721 8,461

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 and situational intelligence requirements for all types of emergency situations. The goal of the Emergency Communications Network Program is to 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.

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
International Emergency Management and Cooperation	**0**	**0**	**4,655**

The International Emergency Management and Cooperation subprogram conducts training, provides technical assistance, and develops programs, plans and infrastructure to strengthen and harmonize emergency management systems worldwide. Current ongoing cooperation involves China, Brazil, Argentina, India, Pakistan, Japan, France, South Korea, Taiwan, Finland, Armenia, Sweden, Norway, and Russia. NNSA will continue liaison with, and participate in projects sponsored by, international organizations (International Atomic Energy Agency (IAEA), EU, NATO, G8, 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.

The International Emergency Management and Cooperation subprogram supports the IAEA in developing and implementing a new code of conduct for emergency management affecting all member states. IEMC is also providing communication and radiation monitoring equipment and technical assistance for IAEA's emergency program to address incidents and accidents including lost sources. The program supports emergency response cooperative activities bilaterally and under the Bratislava Initiative between U.S. and Russia protecting the public and the environment from the consequences of nuclear/radiological incidents in Russia; conducts emergency drills and exercises involving nuclear facility workers and local and national government counterparts; and develops and conducts training courses for nuclear facility emergency staff and other emergency responders in Russia. The subprogram is developing emergency management training courses for Chinese and South Korean emergency managers in the areas of hazards assessment, monitoring, and medical management of a radiological emergency. The subprogram will also analyze the results of the tracer experiment conducted in China in fall 2007 in an international workshop with results to be incorporated into plume model systems. Differences between worldwide plume modeling and dispersion programs developed by the National Atmospheric Release Advisory Center (NARAC) and systems developed by Japan, EU, and Russia will be documented and harmonized. The NARAC plume modeling and graphic information system will be integrated with these systems for a worldwide capability for nuclear/radiological incidents. This function was previously conducted under the Office of Defense Nuclear Nonproliferation. In an effort to consolidate emergency mission, functions, authorities and activities within NNSA, IEMC was transferred to NWIR. Funding that will be managed by the NWIR program, but still reside in the DNN budget, is $5,400,000 for FY 2007 and $6,249,000 for FY 2008.

Nuclear Counterterrorism (Homeland Security)	**0**	**0**	**51,769**

The Nuclear Counterterrorism (NC) program works collaboratively with the Department of Homeland Security, the Defense Threat Reduction Agency, and DOE's Offices of Emergency Response, Nonproliferation Research & Development, Nuclear Energy, Defense Nuclear Nonproliferation and Health, Safety and Security, and the intelligence community on Improvised Nuclear Device (IND) concepts. The NC program draws on the full range of tools, techniques and expertise developed within the nuclear weapons design laboratories. This function was previously conducted under Defense Programs in Directed Stockpile Work. The comparable funding level was $53,000,000 in FY 2007 and FY 2008.

Total, Nuclear Weapons Incident Response	**133,514**	**158,655**	**221,936**

Explanation of Funding Changes

	FY 2009 vs. FY 2008 ($000)
Emergency Response (Homeland Security)	
▪ **Nuclear Emergency Support Team (NEST)**	
This increase reflects higher priority mission needs and escalation in the Emergency Response subprograms comprising NEST.	+1,012
▪ **Other Assets**	
Consequence Management Response Team (CMRT) has traditionally been sized to provide 12-hour per day coverage. This increase restores the robust Phase I CMRT concept to attain 24-hour per day coverage.	+1,282
▪ **Stabilization Implementation**	
Increase in funding for program support of HSC/NSC activity for development and deployment of first generation equipment with stabilization teams for the isolation and stabilization of devices until national response teams can arrive to render it safe.	+2,699
Subtotal, Emergency Response	**+4,993**
National Technical Nuclear Forensics (Homeland Security)	
Increase in funding in support of HSC/NSC activity to establish missions, institutionalize roles and responsibilities and enable operational support for pre-detonation and post-detonation nuclear forensics, attribution and ongoing disposition programs.	+945
Emergency Management (Homeland Security)	
This increase in funding supports training required for increased mission responsibilities, and conduct of no-notice exercises. This increase also provides funding for Continuity Programs to support increased mission for all of DOE Continuity planning, training, exercises and operations activities.	
The increase provides funding for Continuity Programs to support increased mission for all of DOE Continuity planning, training, exercises and operations activities. Funding is also increased for Continuity of Government activities previously funded by, and transferred from, the former Office of Security and Safety Performance Assurance ($185,000).	+1,179

	FY 2009 vs. FY 2008 ($000)
Operations Support (Homeland Security)	
Decreases Emergency Operations Centers funding by deferring, completion by a one year, of the Emergency Communications Network (ECN) Internet Protocol security and encryption upgrade program; terminated development of ability to enable multi-level classified computing operations on a single computer workstation; no expansion of satellite communication time for support of emergency response field operations; reduced ECN Imagery Support to support high priority NNSA/DOE missions.	-260
International Emergency Management and Cooperation (IEMC)	
This increase results from a functional transfer within NNSA. This increase will ensure that the IEMC program continues to address the most serious emergency management concerns in the priority countries of China, India and Pakistan while continuing and completing ongoing emergency management projects with the IAEA, Brazil, Argentina, Armenia and Georgia. The IEMC's base program will continue to ensure its mission of reducing the risk of international nuclear and radiological events by strengthening emergency preparedness and response capabilities worldwide.	+4,655
Nuclear Counterterrorism (Homeland Security)	
This increase results from a functional transfer within NNSA and will ensure that efforts to combat the war on nuclear terrorism continue for existing customers and stakeholders along with technical aspects this program can bring to bear on the Nuclear Weapons Incident Response mission. The NC base program will continue to ensure its mission of reducing the risks of potential improvised nuclear devices.	+51,769
Total Funding Change, Nuclear Weapons Incident Response	**+63,281**

Capital Operating Expenses and Construction Summary[a]

Capital Operating Expenses

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
General Plant Projects	494	1,900	1,800
Captial Equipment	79	81	83
Total, Capital Equipment	**573**	**1,981**	**1,883**

Outyear Capital Operating Expenses

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
General Plant Projects	1,240	556	573	590
Captial Equipment	85	88	91	94
Total, Capital Equipment	**1,325**	**644**	**664**	**684**

[a] Since funds are appropriated for Operations and Maintenance, which includes operating expenses, capital equipment and general plant projects, we no longer budget separately for capital equipment and general plant projects. FY 2008 and FY 2009 funding shown reflects estimates based on actual FY 2007 obligations. GPP funds in FY 2008 – FY 2010 represent funding for reconfiguration of space adjacent to Kirtland Air Force Base flight line for the SORD (Stabilization Operations Readiness and Deployment) Facility.

Facilities and Infrastructure Recapitalization Program

Funding Schedule by Activity

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
Facilities and Infrastructure Recapitalization Program			
Operations and Maintenance (O&M)			
Recapitalization	84,293	85,471	86,292
Facility Disposition	25,000	25,000	0
Infrastructure Planning	14,457	8,000	13,258
Subtotal, Operations and Maintenance (O&M)	**123,750**	**118,471**	**99,550**
Construction	45,633	61,520	69,999
Total, Facilities and Infrastructure Recapitalization Program	**169,383**	**179,991**	**169,549**

Outyear Funding Schedule

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
Facilities and Infrastructure Recapitalization Program				
Operations and Maintenance (O&M)				
Recapitalization	163,723	180,396	178,775	192,315
Facility Disposition	0	0	0	0
Infrastructure Planning	19,259	15,983	16,321	2,464
Subtotal, Operations and Maintenance (O&M)	**182,982**	**196,379**	**195,096**	**194,779**
Construction	9,963	0	0	0
Total, Facilities and Infrastructure Recapitalization Program	**192,945**	**196,379**	**195,096**	**194,779**

Description

The Facilities and Infrastructure Recapitalization Program (FIRP) mission is to restore, rebuild and revitalize the physical infrastructure of the nuclear weapons complex.

This mission contributes significantly to the third leg of the new Triad, as identified in the Nuclear Posture Review dated December 2001 and released by the Administration in January 2002, and supports the National Nuclear Security Administration's (NNSA) transformation of the complex objectives. The program applies new direct appropriations to address an integrated, prioritized series of repair and infrastructure projects focusing on elimination of legacy deferred maintenance that significantly increases the operational efficiency and effectiveness of the NNSA nuclear weapons complex sites.

FIRP is a capital renewal and sustainability program that was established to reduce the estimated $2.4 billion backlog of NNSA's deferred maintenance which developed during the 1990s, to an appropriate level consistent with industry best practices. The FIRP has three of four subprograms still active: Recapitalization, Infrastructure Planning, and Construction (Facility Disposition will achieve the FY 2009 goal in FY 2008). The FIRP Recapitalization subprogram funds projects in accordance with established criteria and priorities that target legacy deferred maintenance reduction and repair (non-programmatic) of mission facilities and infrastructure projects that support transformation of the complex. These projects are vital to restoring the facilities that house the people, equipment, and material necessary to support scientific research, production, or testing to conduct the Stockpile Stewardship Program. The FIRP Facility Disposition subprogram addressed a portion of the necessary

footprint reduction of the complex. The FIRP Infrastructure Planning subprogram funds planning activities for next-year Recapitalization projects. Its primary objective is to ensure that projects are adequately planned in advance of project start. This permits the timely use of construction funds and effective project execution, using a graded approach to meet the requirements of DOE Order 413.3A, "*Program and Project Management for the Acquisition of Capital Assets*". FIRP Construction funds selected utility line-item construction projects across the weapons complex to further reduce the legacy deferred maintenance backlog. This satisfies a critical need for improvement to NNSA sites' utilities infrastructure.

FIRP is separate and distinct, but complementary to the ongoing programmatic base maintenance and infrastructure efforts at NNSA sites. Maintenance and infrastructure are primarily funded by Readiness in Technical Base and Facilities (RTBF) and through site overhead allocations to ensure that facilities necessary for immediate programmatic workload activities are sufficiently maintained. FIRP addresses the additional sustained investments above the RTBF base for focused reduction of deferred maintenance to extend facility lifetimes, reduce the risk of unplanned system and equipment failures, increase operational efficiency and effectiveness, and allow for the recapitalization of aging facility systems. FIRP works in partnership with RTBF to assure the facilities and infrastructure of the nuclear weapons complex are restored to an appropriate condition to support both the Stockpile Stewardship Program mission and transformation of the complex, and to institutionalize responsible and accountable facility management practices.

FIRP supports the overall goals of the Weapons Activities appropriation through improvements to NNSA facilities and infrastructure that result in increased operational efficiency and effectiveness. FIRP is able to readily respond to changing missions, priorities and decisions affecting both sites and their facilities within the nuclear weapons complex through the implementation of its Integrated Prioritized Project List that targets the worst and most mission-relevant facilities and infrastructure deficiencies first. The rating criteria for projects are designed to support NNSA's Complex Transformation. The Ten Year Site Plan (TYSP) is the annual planning document that reflects the outyear priorities of the weapons complex transformation and mission. All FIRP projects that are prioritized and funded using the IPPL, are taken directly from TYSP submissions. As of the first quarter of FY 2008, the Facility Disposition subprogram, which funds the minor decontamination, dismantlement, removal and disposal of excess facilities, will have funded a total of 3,000,000 gross square feet (gsf) for demolition one year earlier than the planned date of FY 2009. This achievement will reduce the number of FIRP subprograms from four to three with successful completion of Facility Disposition. Within FIRP, the remaining three subprograms each make unique contributions to GPRA Unit Program Goal 2.1.36.00. The Recapitalization subprogram funds capital renewal and sustainability projects, focusing on legacy deferred maintenance reduction required to restore the facilities and infrastructure comprising the nuclear weapons complex to an acceptable condition. The Infrastructure Planning subprogram funds planning activities for next-year Recapitalization projects with the goal of credible, up-front planning and baselining of the projects planned to begin in the following fiscal year. FIRP project planning and execution follow a graded approach for the requirements of DOE Order 413.3A, "*Program and Project Management for the Acquisition of Capital Assets*". The FIRP Construction subprogram funds selected utility line item construction projects across the nuclear weapons complex to further reduce the deferred maintenance backlog, and reduce the chances for unplanned outages or system failures to the NNSA sites' utilities infrastructure. These three subprograms combined are effectively addressing the many facilities and infrastructure related problems that exist at NNSA sites due to prior year funding reductions.

FIRP has made excellent progress towards achieving its long-term performance goals including ambitious targets and timeframes, which is demonstrated by the excess facilities disposition and the results reported to date for deferred maintenance reduction. The program is improving the condition of NNSA's facilities and infrastructure, and has demonstrated significant and measurable progress towards meeting both the NNSA's corporate long-term performance goals for deferred maintenance reduction.

FIRP is effectively executing the Program and reports the corresponding planned and actual performance results in the Congressional Budget Request, Program Assessment Rating Tool (PART) self-assessment and during the NNSA Administrator's Program Reviews. The FIRP's program partners, NNSA sites, and M&O contractors have committed to the achievement of the FIRP annual performance goals. The success of FIRP to date is attributed to strong central management of the program; independent and objective oversight; and an ongoing partnership between Headquarters program partners, NNSA Site Offices, and NNSA M&O contractors.

Major FY 2007 Achievements

- The Facility Disposition program demolished more than 2,868,000 gross square feet (gsf).
- Completion of three utility line items within the baseline cost, scope, and schedule.

Major Outyear Priorities and Assumptions

FIRP was established to reduce the NNSA's large backlog of deferred maintenance and return the condition of the nuclear weapons complex to acceptable standards within a ten-year period (FY 2001-FY 2011). The program's original goals established in FY 2003 include: elimination of $1.2 billion of deferred maintenance, achieving a Facility Condition Index (FCI) of 5 percent, and elimination of 3 million gsf of excess facilities. The original $1.2 billion deferred maintenance buydown goal is based on the requirement to meet the FIRP commitment of 5 percent FCI for all facilities. The program's deferred maintenance goal has been adjusted to eliminate $900 million of deferred maintenance by FY 2013 as a result of Complex Transformation and reduced facility deferred maintenance requirements. The FCI goal has been reevaluated to be consistent with the Federal Real Property Council (FRPC) and DOE mission-dependency categories and goals. The new FCI goals are 5 percent for mission-critical facilities and 7 percent for mission-dependent not-critical (MDNC) facilities.

The outyear funding projections for FIRP total $779,199,000 (FY 2010-2013). The trend through the five-year period reflects a decrease of 35.6 percent from the FY 2008-FY 2012 Congressional Budget Request. The revised outyear funding profiles from the FY 2007-2011 Congressional Budget Request, coupled with the reduced FY 2007 operating plan, left the FIRP without resources to achieve the program's deferred maintenance (DM) reduction performance goal and endpoint target. Congress amended the FIRP end date from 2011 to 2013 to enable successful completion of the FIRP mission. The extended timeframe, updated FY 2013 FIRP DM reduction goals, in conjunction with reduced DM facility requirements resulting from transformation of the complex, will enable FIRP to achieve the NNSA strategic goal to aggressively reduce the deferred maintenance backlog and fulfill the FIRP mission.

FIRP uses an Integrated Prioritized Project List (IPPL) that enables the program to prioritize and fund outyear legacy deferred maintenance reduction projects that significantly reduce NNSA's deferred maintenance backlog to acceptable levels and support the Stockpile Stewardship Program mission and transformation of the complex.

Program Assessment Rating Tool (PART)

The Department implemented a tool to evaluate selected programs. The PART was developed by the Office of Management and Budget (OMB) to provide a standardized way to assess the effectiveness of the Federal Government's portfolio of programs. The structured framework of the PART provides a means through which programs can assess their activities differently than through traditional reviews.

The current focus is to establish outcome- and output-oriented goals, the successful completion of which will lead to benefits to the public, such as increased national security and energy security, and improved environmental conditions. DOE has incorporated feedback from the OMB into the FY 2009 Budget Request, and the Department will take the necessary steps to continue to improve performance.

The results of the OMB review are reflected in the FY 2004 Budget Request. The OMB gave the FIRP scores of 80 percent on the Program Purpose and Design Section; 100 percent on the Strategic Planning Section; 90 percent on the Program Management Section, and 67 percent on the Program Results and Accountability Section. Because the FIRP was a new program at the time, with only limited measurable results to date, the OMB's overall PART rating for the FIRP was 78 percent, its second highest rating of "Moderately Effective." The OMB assessment found that the FIRP has a clear and unique purpose; is well managed; and has clear, concise, meaningful, and measurable performance metrics. The OMB also suggested that the FIRP ensure there are not overlaps of responsibility with other infrastructure-related programs. In response to the OMB findings, the FIRP provided the OMB with a FY 2005 update to its FY 2004 PART and is reviewing all infrastructure programs to ensure that there is no overlap between the Facilities and Infrastructure Recapitalization Program and other infrastructure-related programs. The NNSA is also continuing to improve the responsiveness of the Nuclear Weapons Complex infrastructure by coordinating program activity with the Nuclear Weapons Complex Transformation strategy and by developing and implementing transition planning.

Annual Performance Results and Targets

(R = Results; T= Targets)

Performance Indicators	FY 2005 Results	FY 2006 Results	FY 2007 Results	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Endpoint Target
Strategic Goal 2.1 (Nuclear Deterrent) GPRA Unit Program Goal 2.1.36.00, Facilities and Infrastructure Recapitalization Program										
Deferred Maintenance Reduction: Annual dollar value and cumulative percentage of legacy deferred maintenance baseline of $900 million; funded for elimination by FY 2013 (Long-term Output)	R: $178M (23%) Deferred mainten-ance remains stabilized T: $155M (21%) Stabilize deferred mainten-ance by the end of FY 2005	R: $118M (32.8%) T: $60M (28%)	R: $75M (56%) T: $60M (38%)	T: $80 (64%)	T: $69M (72%)	T: $70M (80%)	T: $60M (87%)	T: $56M (93%)	T: $57M (100%)	Eliminate $900,000,000 of NNSA's legacy deferred maintenance backlog by 2013. [a]
Footprint Reduction: Annual gross square feet (gsf) of NNSA excess facilities space funded for elimination; and cumulative percentage of FY 2002-FY 2009 total goal of three million gsf eliminated (Long-term Output)	R: 514,000 (75%) T: 350,000 (69%)	R: 316,000 [b] (85%) T: 175,000 (79%)	R: 264,000 (96%) T: 225,000 (92%)	T: 225,000 (100%)	N/A	N/A	N/A	N/A	N/A	By 2009, eliminate 3,000,000 gsf of excess facility space. [c]
Mission-critical Facilities: Annual NNSA complex-wide aggregate Facility Condition Index (FCI), as measured by deferred maintenance costs per replacement plant value, for all mission-critical facilities and infrastructure. (Jointly with Readiness in Technical Base and Facilities) (Efficiency)	R: 7.4% T: 9%	R: 6.7% T: 7.4%	R: 6.5% T: 6.8%	T: 5%	T:5%	T: 5%	T: 5%	T: 5%	T:5%	By 2013, maintain the condition of mission critical facilities and infrastructure at an FCI level of 5%.

Performance Indicators	FY 2005 Results	FY 2006 Results	FY 2007 Results	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Endpoint Target
Mission-dependent Facilities: Annual NNSA complex-wide aggregate Facility Condition Index (FCI), as measured by deferred maintenance costs per replacement plant value, for all mission-dependent, not critical facilities and infrastructure. (Jointly with Readiness in Technical Base and Facilities) (Efficiency)				T: 8.25%	T: 8.%	T: 7.75%	T: 7.5%	T: 7.25%	T:7.%	By 2013, improve mission dependent, not critical facilities and infrastructure to an FCI level of 7%. [d]

[a] (1) The program's deferred maintenance goal has been adjusted to elimination of $900,000,000 of deferred maintenance by FY 2013 as a result of aligning deferred maintenance buydown with reduced facility requirements envisioned by the ongoing transformation of the complex. The cumulative change is reflected in FY 2007, the same year that the analysis was completed. (2) The FY 2007 cumulative percentage includes $31,786,476 of FY 2003 baseline DM funded in the FY 2004 Disposition subprogram. (3) The original 2009 date for elimination of the deferred maintenance backlog slipped to 2013 due to constrained outyear funding. The FY 2006 Defense Authorization Bill extends the FIRP end date by two years (from 2011 to 2013) to enable FIRP to accomplish its mission.

[b] Reflects a 3,000 gross square feet adjustment downward from the DOE FY 2006 Performance and Accountability Report.

[c] (1) The program plans to achieve the FY 2009 performance goal of demolishing 3,000,000 gsf of facilities in FY 2008, one year early. (2) No funding is requested for program activities in FY 2009. (3) The cumulative percentage includes 218,445 gsf of excess facilities funded in FY 2003, but demolished in FY 2004-2005.

[d] (1) FCI Targets based on the latest NNSA Ten Year Site Plans (TYSP) indicate that the FY 2009 endpoint target will not be achieved. (2) NNSA has redefined this performance indicator for the FY 2009-FY 2013 President's Budget to be consistent with the Federal Real Property Council (FRPC) and DOE mission-dependency categories and goals.

Detailed Justification

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
Recapitalization	**84,293**	**85,471**	**86,292**

Recapitalization funds capital renewal and sustainability projects required to restore the facilities and infrastructure comprising the nuclear weapons complex to an acceptable condition. NNSA has established corporate commitments/performance goals to stabilize deferred maintenance by FY 2005 (achieved in FY 2004), and reduce the legacy deferred maintenance to industry standards by FY 2013. The primary executor of these corporate commitments is the Recapitalization subprogram. Recapitalization funds projects in accordance with established criteria and priorities that target deferred maintenance reduction and repair (non-programmatic) of facilities and infrastructure. These projects are vital to restoring the facilities that house the people, equipment, and material necessary to support scientific research, production, or testing to conduct the Stockpile Stewardship Program, the primary NNSA mission. Recapitalization also includes construction/renovation 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. FIRP has invested approximately $60,000,000 in its complex-wide Roof Asset Management Program and will invest $10,000,000 in FY 2009 to maintain a corporate approach for the management of NNSA's roofing assets. Benefits of the Roof Asset Management Program include improved cost efficiencies, improved quality and life extension of NNSA's roofing assets, consistent approach and common standards for optimal roofing repairs and replacement, additional deferred maintenance reduction and a management structure that can integrate additional funding sources.

The focus of the Recapitalization subprogram in FY 2009 will be on achieving its annual legacy deferred maintenance reduction target in support of NNSA's aggressive corporate goal to reduce complex-wide deferred maintenance to within industry standards. The Recapitalization subprogram funding profile aligns with current transformation of the complex outyear planning.

Facility Disposition	**25,000**	**25,000**	**0**

Facility Disposition provides funds to accomplish the decontamination, dismantlement, removal and disposal of excess facilities that have been deactivated. This includes facilities that are excess to current and future NNSA mission requirements, and are not contaminated by weapons processes. The program will achieve the FY 2009 performance goal of demolishing 3,000,000 gsf of facilities in FY 2008, one year early. No funding is requested for program activities in FY 2009.

Infrastructure Planning	**14,457**	**8,000**	**13,258**

Infrastructure Planning funds planning activities for next-year's Recapitalization projects. Its primary objective is to ensure that projects are adequately planned in advance of project start to permit the timely obligation of construction funds and effective project execution. The Infrastructure Planning subprogram supports: the establishment of Recapitalization project baselines; planning and design for priority general infrastructure projects, to include FIRP utility line items; contract preparation and other activities necessary to ensure the readiness to obligate and execute funds. Infrastructure Planning also funds Other Project Costs (OPC) in anticipation of FIRP Project Engineering and Design (PED) and construction for FIRP utility line items. FIRP projects follow a graded approach for the requirements of DOE Order 413.3A, "*Program and Project Management for the Acquisition of*

Capital Assets". Other key activities funded by this subprogram include assessments of the physical condition of the complex to aid in the prioritization of deferred maintenance reduction and facility consolidation efforts; procurement support of small business contracts; and planning for the repair and renewal of cross-complex roofing projects.

FIRP Construction **45,633** **61,520** **69,999**

FIRP Construction funds selected utility line item construction projects across the weapons complex to further reduce the deferred maintenance backlog, and satisfy a critical need for improvement to NNSA sites utilities infrastructure. These projects are expected to result in increased efficiencies because it is typically more cost effective to replace, rather than maintain, aging utilities. The projects typically include: electrical power distribution, central steam systems and distribution, central chilled water facilities and distribution, water supply systems, sanitary waste disposal systems, and natural gas distribution systems. FIRP Construction also funds the Project Engineering and Design (PED) of utility line item construction projects. Initial planning and conceptual design activities for proposed FIRP utility line item construction projects (i.e., Other Project Costs) are funded from the Infrastructure Planning subprogram. These construction projects meet the criteria for funding within the FIRP program and are managed in accordance with current Department of Energy and NNSA orders and policies, including DOE Order 413.3A, "*Program and Project Management for the Acquisition of Capital Assets*". All of the FIRP line item construction projects are rated as "Green" by the DOE Office of Engineering and Construction Management (OECM).

- **08-D-602, Potable Water System Upgrades, Y-12** **0** **22,070** **27,666**

  The Potable Water System Upgrades project supports the Y-12 National Security Complex Missions by making needed repairs and upgrades (i.e., water distribution with two new tank installations, fire hydrants, backflow prevention, and repair/replacement of cast iron piping) to ensure future reliability of the potable water distribution system and meet regulatory requirements. Potable water is a "mission-essential" utility that supports the operation and protection of every facility and process at Y-12. Without this project, Y-12 will experience an ever-increasing risk of system failure, which can have serious impacts on the plant mission and the health and safety of the workers and the public. The project will: 1) correct system deficiencies within the existing potable water distribution system, 2) make operational modifications to provide Y-12 control and monitoring of water entering the Y-12 distribution system to ensure adequate water flow and pressure to support current and future operational needs, and 3) provide enhanced cross connection control between the potable water system and non-potable water systems. Completion of the PWSU Project will eliminate approximately $25,000,000 in deferred maintenance costs associated with the water distribution system at Y-12. FY 2009 funding will be utilized to award and perform construction subcontractor work.

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009

- **08-D-601, Replace Mercury Highway, NTS** **0** **7,651** **11,700**

  The objective of this project is to rehabilitate and improve approximately 15.6 miles of the Mercury Highway, which is the primary access highway for any activity at the Nevada Test Site (NTS), including sub-critical experiments and future missions. The project will provide for replacement of the existing 40-year-old pavement with a renewed base and asphalt concrete surface. All personnel, heavy equipment, and supplies entering or exiting the forward areas at NTS depend on this route in direct support of the test and waste management areas. The pavement surface has severely deteriorated because of age, ground motion from underground testing, and heavy truck traffic. This project will be a design-bid-build acquisition. Design activities will be performed by the NTS management and operating contractor (M&O). Construction services will be accomplished by an outside sub-contractor. The construction contract will be administered by the NTS M&O. The M&O will monitor the construction work in progress to ensure compliance with the design drawings and specifications to ensure that required field tests are conducted and meet acceptance criteria, and to ensure that all proposed field changes are reviewed and approved by the Design Authority. The Federal Project Director will oversee the M&O contractor, for the construction oversight of this project. FY 2009 funding will be utilized to award and perform construction subcontractor work. The Mercury Highway project will reduce the deferred maintenance backlog by $17,000,000.

- **07-D-253, TA-I Heating Systems Modernization, SNL** **14,500** **12,751** **15,755**

  The objective of Sandia's Technical Area – I (TA-I) Heating Systems Modernization (HSM) project is to prevent further degradation of the 50-year old, mission essential, TA-I heating utility by upgrading to a reliable, cost effective, safe and environmentally friendly heating system that mitigates risks and extends the useful life of this infrastructure to the year 2035. New building heating systems will be designed and constructed for approximately 50 buildings of various sizes, situated throughout Technical Area I and adjacent areas. The natural gas distribution utility will be modified to deliver natural gas to each building in a reliable and safe manner. The existing steam to hot water conversion equipment will be removed and, in many cases, the new boiler(s) and piping will be installed in the same space. In other locations, new stand-alone facilities may be required due to the lack of space in the building. This project will be a design-bid-build acquisition. The M&O contractor will provide the direct project management, direct construction management and administer the design and construction contracts. Design services are being provided by an experienced small business qualified engineering firm on a firm, fixed price contract. The design services contract was established based on best value to the government, considering qualifications and price. Construction services will be accomplished by multiple small business firm fixed price contracts awarded on the basis of competitive bids to pre-qualified contractors. PED funding was provided under 05-D-160 for Architect-Engineering services to develop and complete preliminary and final (Title I and II) design of this project. The HSM project reduces the deferred maintenance backlog by $37,420,000. Recent changes in market conditions combined with increasing cost to perform current acquisition strategy have resulted in an increase to the TPC to $61,305,000. Execution of a baseline change proposal on November 26, 2007, documented this change.

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009

- **06-D-603, Steam Plant Life Extension (SPLE) Project, Y-12** **17,811** **14,733** **10,878**

  Funding for the Steam Plant Life Extension (SPLE) project at the Y-12 National Security Complex provides for the replacement of the existing steam service system to ensure the reliability and affordability of this "mission essential" utility service in support of NNSA and other DOE missions at the Y-12 National Security Complex (NSC). The end-of-life for the existing steam plant is currently projected to be year 2010. Project costs at Title II Design for the life extension of the existing coal fired steam plant were estimated to exceed the original baseline of $61.5M by $27M. A re-assessment of alternatives for supplying steam to the Y-12 NSC was performed in FY 2007. The assessment determined that a new gas fired package boiler plant would be an effective alternative to extending the life of the current steam plant. This skid mounted package boiler steam plant will be a long term solution, scalable to the Y-12 NSC existing and future energy requirements. On February 28, 2007, NNSA-HQ approved a Baseline Change Proposal (BCP) that authorized the SPLE project to proceed with development of the scope, cost, and schedule for the gas fired package boiler alternative. Critical Decision 2/3 for this new alternative was approved in September 2007. Overall project direction and responsibility resides with NNSA; however, the day-to-day management of project activities has been assigned to the Y-12 Management and Operating (M&O) contractor, BWXT. The M&O will be responsible for management of all design activities for the new package boiler steam plant system. The SPLE project reduces the deferred maintenance backlog by $27,100,000. The TPC is $61,170,000.

- **06-D-602, Gas Main and Distribution System Upgrade (GMDSU), PX** **3,145** **1,863** **0**

  Funding for this project provides for the construction of the Gas Main & Distribution System Upgrade (GMDSU) at the Pantex Plant. The cost for the GMDSU project was increased by $1,900,000 due to small business bid proposals exceeding the initial government estimate in FY 2006. This Project will replace the existing Government-owned gas main and distribution system comprised of approximately 8.4 miles of carbon steel pipe offsite, approximately 5.7 miles of carbon steel pipe onsite, and approximately 4.4 miles of high density polyethylene pipe onsite ranging in diameters from ½" to 12". The GMDSU project will reduce the deferred maintenance backlog by $3,100,000. The TPC is $10,817,000.

- **06-D-601, Electrical Distribution System Upgrade (EDSU), PX** **6,429** **2,452** **4,000**

  Funding for this project provides for the construction of the Electrical Distribution System Upgrade (EDSU) at the Pantex Plant. The EDSU project will address three areas of the electrical distribution system that are of questionable reliability due to aging, and/or unavailability of spare parts, which have been prioritized by safety and mission criteria: 1) Ground Fault and Surge Arrester Upgrade, 2) Facility Standby Diesel Generators Upgrade, and 3) the Overhead Electrical Power Line Replacement. PED funding was provided under 05-D-160 for Architect Engineering services to develop and complete preliminary and final (Title I and II) design of the EDSU. The Project Engineering & Design (PED) funds have been adjusted based on a change in the acquisition strategy for construction of this project. Per the new acquisition strategy, the construction contract will be solicited, awarded, and managed by the Management and Operating

(M&O) contractor instead of a federally managed small business procurement executed through the NNSA Service Center. This action requires a $322,000 adjustment to PED and a $50,000 increase to OPC funding. The PED adjustment is noted on Data Sheet 05-D-160-3. This acquisition strategy change requires the TPC to increase to 19,925,000. The EDSU project reduces the deferred maintenance backlog by $2,970,000.

- **06-D-160, FIRP Project Engineering and Design (PED) Project** **2,700** **0** **0**

  This FIRP PED project provided for Architect-Engineering (A-E) services (Title I and Title II) for two utility construction projects that began in FY 2006 (i.e., High Pressure Fire Loop, Zone 12, at Pantex Plant, and Potable Water System Upgrade at Y-12 National Security Complex), allowing designated projects to proceed from conceptual design into preliminary design (Title I) and definitive design (Title II).

- **05-D-160, FIRP Project Engineering and Design (PED) Project** **1,048** **0** **0**

  This FIRP PED project provides for Architect-Engineering (A-E) services (Title I and Title II) for several utility construction projects that began in FY 2005 (i.e., TA I Heating System Modernization at Sandia National Laboratories, Steam Plant Life Extension (SPLE) Project at Y-12 National Security Complex, and Electrical Distribution System Upgrade and Gas Main and Distribution System Upgrade at Pantex Plant) allowing designated projects to proceed from conceptual design into preliminary design (Title I) and definitive design (Title II). The design effort is sufficient to ensure project feasibility, define scope, provide detailed estimates of construction costs based on the approved design and working drawings and specifications, and provide construction schedules, including procurements.

Total, Facilities and Infrastructure Recapitalization Program	**169,383**	**179,991**	**169,549**

Explanation of Funding Changes

	FY 2009 vs. FY 2008 ($000)
Recapitalization	
The increase supports the DM buydown performance target of $900 million by FY 2013. FIRP Recapitalization funding remains essential to continued progress in restoring the condition of mission essential facilities and infrastructure across the nuclear weapons complex to an acceptable condition.	+821
Facility Disposition	
This decrease is due to planned early achievement of FY 2009 cumulative performance goal of 3,000,000 gross square feet in FY 2008.	-25,000
Infrastructure Planning	
The increase is in alignment with the level of Planning required to support the continuation of credible, up-front planning and baselining of planned FY 2010 Recapitalization projects. These planning activities will ensure the effective and efficient expenditure of program funds. Since projects are planned one year prior to execution, the budget request must support the FY 2010 Recapitalization funding requirement, which increases by $77.4M in FY 2010.	+5,258
Construction	
The increase supports completion of all utility line item construction projects on schedule.	+8,479
Total Funding Change, Facilities and Infrastructure Recapitalization Program	**-10,442**

Capital Operating Expenses and Construction Summary

Capital Operating Expenses[a]

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
General Plant Projects	81,888	84,344	86,874
Captial Equipment	6,196	6,382	6,574
Total, Capital Equipment	**88,084**	**90,726**	**93,448**

Outyear Capital Operating Expenses

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
General Plant Projects	89,480	92,164	94,928	97,681
Captial Equipment	6,772	6,976	7,186	7,394
Total, Capital Equipment	**96,252**	**99,140**	**102,114**	**105,075**

Construction Projects[b] [c]

(dollars in thousands)

Major Item of Equipment	Total Estimated Cost (TEC)	Prior Year Appro-priations	FY 2007	FY 2008	FY 2009	Unappro-priated Balance
08-D-601, Mercury Highway, NTS	19,500	0	0	7,651	11,700	0
08-D-602, Potable Water System, Y-12	49,736	0	0	22,070	27,666	0
07-D-253, TA-I Heating Systems Modernization, SNL	53,030	0	14,500	12,751	15,755	10,024
06-D-160, Facilities and Infrastructure Recapitalization Program Project and Engineering and Design, VL	6,767	4,067	2,700	0	0	0
06-D-601, Electrical Distribution System Upgrade, PX	16,841	3,960	6,429	2,452	4,000	0
06-D-602, Gas Main and Distribution System Upgrade, PX	8,708	3,664	3,145	1,863	0	0
06-D-603, Steam Plant Life Extension Project, Y-12	44,144	722	17,811	14,733	10,878	0
05-D-160, Facilities and Infrastructure Recapitalization Program, Project Engineering and Design, VL	20,215	19,167	1,048	0	0	0
Total, Construction			**45,633**	**61,520**	**69,999**	

[a] Since funds are appropriated for Operations and Maintenance, which includes operating expenses, capital equipment and general plant projects, we no longer budget separately for capital equipment and general plant projects. FY 2008 and FY 2009 funding shown reflects estimates based on actual FY 2007 obligations.

[b] The TEC estimate is for design only for the PED projects included in 06-D-160 and 05-D-160.

[c] These represent construction estimates. Design TEC estimates are reported in the appropriate PED project.

Outyear Construction Projects

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
07-D-253, TA-I Heating Systems Modernization, SNL	9,963	0	0	0
Total, Construction	**9,963**	**0**	**0**	**0**

08-D-602, Potable Water Upgrades (PWSU) Project, Y-12 National Security Complex, Oak Ridge, Tennessee Project Data Sheet (PDS) is for Construction

1. Significant Changes

The most recent DOE O 413.3A approved Critical Decision (CD) is CD-3, which was granted on 6/27/2007 with a Total Project Cost (TPC) of $62,558,000. The TPC in Section 5 reflects the reduced appropriation and the associated rescission in FY 2008.

A Federal Project Director with certification level III has been assigned to this project.

This PDS is an update of the FY 2008 PDS.

No Significant Changes.

2. Design, Construction, and D&D Schedule

(fiscal quarter or date)

	CD-0	CD-1 (Design Start)	(Design/PED Complete)	CD-2	CD-3 (Construction Start)	CD-4 (Construction Complete)	D&D Start	D&D Complete
FY 2006	08/20/2004	1QFY2006	3QFY2007	N/A	2QFY2007	2QFY2010	N/A	N/A
FY 2007	08/20/2004	1QFY2006	3QFY2007	N/A	1QFY2008	4QFY2010	N/A	N/A
FY 2008	08/20/2004	01/23/2006	02/2008	07/2006	06/2007	09/2010	N/A	N/A
FY 2009	08/20/2004	01/23/2006	12/2007	12/1/2006	06/27/2007	09/2010	N/A	N/A

CD-0 – Approve Mission Need
CD-1 – Approve Alternative Selection and Cost Range
Design/PED Complete – Design completion by the Subcontractor for the Tanks.
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 2006	N/A	N/A	N/A	N/A	N/A	N/A	$28-45K
FY 2007	5,800	42,700	48,500	5,000	N/A	5,000	53,500
FY 2008	6,767	50,166	56,933	5,625	N/A	5,625	62,558
FY 2009	6,767	50,166	56,933	5,625	N/A	5,625	62,558

4. Project Description, Justification, and Scope

Project Description
The Potable Water System Upgrades (PWSU) project will support the Y-12 National Security Complex (NSC) Missions by making needed repairs and upgrades to ensure future reliability of the potable water distribution system and meet regulatory requirements.

Potable water is a "mission-essential" utility that supports the operation and protection of every facility and process at Y-12. Without this project, Y-12 will experience an ever-increasing risk of system failure, which can have serious impacts on the plant mission and the health and safety of the workers and the public.

This project directly supports the Y-12 mission including the Stockpile Stewardship Program and supports the recommendation of the December 2001 Nuclear Posture Review to revitalize the defense infrastructure. The project will increase system reliability, enhance worker health and safety, and provide Y-12 control and monitoring of water supplies while reducing the deferred maintenance backlog by an estimated $25,000,000.

Justification
The Y-12 National Security Complex supports the National Nuclear Security Administration (NNSA) Defense Programs Stockpile Stewardship Program (SSP) and Stockpile Life Extension Program (SLEP) by performing missions vital to NNSA. For Y-12 to continue to meet its mission, the existing water distribution system must be upgraded to a condition that will provide a reliable, cost-effective source of water to the Y-12 NSC. Without the PWSU Project, the reliability of the existing water system will continue to degrade, and at some point, major maintenance actions will be required to continue service. To continue to operate the water system in the current condition is not considered a viable option as it would increase the vulnerability of losing water service to critical facilities, which in turn could result in loss of mission capability at Y-12.

Scope
The project will include: 1) correction of system deficiencies within the existing potable water distribution system, 2) upgrades to increase water pressure while providing Y-12 control and monitoring of water entering the Y-12 distribution system to ensure adequate water flow and pressure to support current and future operational needs, and 3) provision of enhanced cross connection control between the potable water system and non-potable water systems which does not currently exist.

First, correction of system deficiencies will include inspection and selective repair or replacement of distribution mains, replacement of potable and firewater building supply lines, and replacement of obsolete fire hydrants.

Second, the PWSU project will supply water from a new pumping station to two new tanks located north of Bear Creek Road. These two tanks will feed the plant distribution system via new supply lines. This will allow Y-12 to maintain increased and stable water pressure in the event of a water main break in Oak Ridge.

Finally, National, State, and Local laws require backflow prevention and cross connection control

between potable and non-potable water sources. All process uses at Y-12 are required to have an approved backflow prevention device (BFPD) installed. Site design standards also require that all new or modified automatic fire suppression systems be supplied with approved BFPDs. This project will install BFPDs on existing fire suppression systems which contain additives.

Completion of the PWSU Project will eliminate approximately $25,000,000 in deferred maintenance costs associated with the water distribution system at Y-12. As part of that amount, a $6,500,000 reduction in the deferred maintenance backlog has been realized as a result of the pipe evaluation program.

FY 2009 funding will be utilized to complete construction subcontractor work and execute project closeout.

The project is being conducted in accordance with the project management requirements in DOE Order 413.3A and DOE Manual 413.3-1, Program and Project Management for the Acquisition of Capital Assets, and all appropriate project management requirements have been met.

The project has received approval of Critical Decision 0 (CD-0), Approval of Mission Need in August 2004, CD-1 in January 2006, CD-2 in December 2006, and CD-3 in June 2007.

Compliance with Project Management Order

- Critical Decision – 0: Approve Mission Need – 08/20/2004
- Critical Decision – 1: Approve Preliminary Baseline – 01/23/2006
- Critical Decision – 2: Approve Performance Baseline – 12/1/2006
- External Independent Review Final Report – 6/16/2006
- Critical Decision – 3: Approve Start of Construction – 6/27/2007
- Critical Decision – 4: Approve Start of Operations – 4Q FY 2010
- Project Closeout: 1Q FY 2011

5. Financial Schedule

(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED			
FY 2006	4,067	4,067	1,654
FY 2007	2,700	2,700	3,233
FY 2008	0	0	1,880
Total, PED (06-D-160-04)	6,767	6,767	6,767
Construction			
FY 2008	22,070[a]	22,070	20,123
FY 2009	27,666	27,666	13,800
FY 2010			15,543

[a] Original FY 2008 appropriation was $22,269,000. This was reduced by $198,849 as a result of a mandatory rescission in the FY 2008 Consolidated Appropriations Act (P.L. 110-161).

	(dollars in thousands)		
	Appropriations	Obligations	Costs
FY 2011			270
Total, Construction	49,736	49,736	49,736
TEC			
FY 2006	4,067	4,067	1,654
FY 2007	2,700	2,700	3,233
FY 2008	22,070	22,070	22,003
FY 2009	27,666	27,666	13,800
FY 2010	0	0	15,543
FY 2011	0	0	270
Total, TEC	56,503	56,503	56,503
Other Project Cost (OPC)			
OPC except D&D			
FY 2004	500	500	500
FY 2005	2,500	2,500	1,500
FY 2006	525	525	1,525
FY 2007	400	400	216
FY 2008	400	400	410
FY 2009	600	600	665
FY 2010	700	700	809
FY 2011	0	0	0
Total, OPC except D&D	5,625	5,625	5,625
D&D			
FY	N/A	N/A	N/A
Total, D&D	N/A	N/A	N/A
OPC			
FY 2004	500	500	500
FY 2005	2,500	2,500	1,500
FY 2006	525	525	1,525
FY 2007	400	400	216
FY 2008	400	400	410
FY 2009	600	600	665
FY 2010	700	700	809
FY 2011	0	0	0
Total, OPC	5,625	5,625	5,625
Total Project Cost (TPC)			
FY 2004	500	500	500
FY 2005	2,500	2,500	1,500
FY 2006	4,592	4,592	3,179
FY 2007	3,100	3,100	3,449
FY 2008	22,470	22,470	22,413
FY 2009	28,266	28,266	14,465
FY 2010	700	700	16,352
FY 2011	0	0	270
Total, TPC	62,128	62,128	62,128

6. Details of Project Cost Estimate

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED)			
Design	6,551	5,963	5,963
Contingency	216	804	804
Total, PED	6,767	6,767	6,767
Construction			
Site Preparation	N/A	N/A	N/A
Equipment	N/A	N/A	N/A
Other Construction	40,137	39,998	39,998
Contingency	9,599	10,168	10,168
Total, Construction	49,736	50,166	50,166
Total, TEC	56,503	56,933	56,933
Contingency, TEC	9,815	10,972	10,972
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	2,500	2,500	2,500
Conceptual Design	2,384	2,384	2,384
Start-Up	220	179	179
NNSA Direct Costs (EIR)	125	125	125
Contingency	396	437	437
Total, OPC except D&D	5,625	5,625	5,625
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	5,625	5,625	5,625
Contingency, OPC	396	437	437
Total, TPC	62,128	62,558	62,558
Total, Contingency	10,211	11,409	11,409

7. Schedule of Project Costs

For schedule of project costs, see Section 5, “Financial Schedule.”

8. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	4Q 2010
Expected Useful Life (number of years)	30
Expected Future Start of D&D of this capital asset (fiscal quarter)	N/A

(Related Funding requirements)

(dollars in thousands)

	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	602	602	18,060	18,060
Maintenance	422	422	12,660	12,660
Total, Operations & Maintenance	1,024	1,024	30,720	30,720

9. Required D&D Information

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

Name(s) and site location(s) of existing facility(s) to be replaced: N/A

10. Acquisition Approach

The Management and Operating (M&O) Contractor will accomplish portions of the design and construction using subcontracts. Acquisition strategies that will be used for subcontracts include various project delivery systems such as design-bid-build and design build. Various construction contracting methods including competitive bidding and self-performance along with best value to the government will be considered.

08-D-601, Mercury Highway, Nevada Test Site
Project Data Sheet (PDS) is for Construction

1. Significant Changes

The most recent DOE O 413.3A approved Critical Decision (CD) is CD-1 approved September 26, 2007.

A Federal Project Director with certification level II has been assigned to this project.

This PDS is an update of the FY 2008 PDS. Significant Changes are as follows;

- The Preliminary Total Project Cost (TPC) Range has been revised from $15,500,000-$18,700,000 to $17,300,000-$19,900,000 and the Total Estimated Cost (TEC) Range has been revised from $15,050,000-$18,250,000 to $16,900,000 - $19,500,000 in response to the June 2007 Independent Project Review (IPR).
- The project scope has been revised to add 0.6 miles for a total of 15.6 miles of reconstructed roadway per the recommendation of the CD-1 Independent Project Review team. This additional 0.6 miles of roadway reconstruction work will take the project to the U1a entrance.
- An additional 3.7 miles of roadway will be included as an alternate bid item per the recommendation of the CD-1 IPR team.
- The estimate for OPC has been revised downward from $450,000 to $400,000.
- Preliminary schedule CD-4 milestone date has been revised from 4QFY2009 to 1QFY2010.
- The acquisition approach for this project has changed from federal direct small business to being managed by the Nevada Test Site Managing & Operating contractor. It has also been clarified that this is a design-bid-build not a design/build procurement.

2. Design, Construction, and D&D Schedule

(fiscal quarter or date)

	CD-0	CD-1 (Design Start)	(Design/PED Complete)	CD-2	CD-3	CD-4 (Construction Complete)	D&D Start	D&D Complete
FY 2008	07/07/2006	1QFY 2008	N/A	2Q FY 2009	2Q FY 2009	1Q FY 2010	N/A	N/A
FY 2009	07/07/2006	09/26/2007	N/A	2Q FY 2009	2Q FY 2009	1Q FY 2010	N/A	N/A

Compliance with Project Management Order

CD-0 – Approve Mission Need – July 7, 2006
CD-1 – Approve Alternative Selection and Cost Range – September 26, 2007
CD-2/3 – Approve Performance Baseline and Approve Start of Construction – Planned 2QFY2009
CD-4 – Approve Start of Operations or Project Closeout – Planned 1QFY2010
D&D Start – Start of Demolition & Decontamination (D&D) work – Not Applicable
D&D Complete – Completion of D&D work – Not Applicable

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 2006	N/A	15,050-18,250	15,050-18,250	450	N/A	450	15,500-18,700
FY 2007	N/A	15,050-18,250	15,050-18,250	450	N/A	450	15,500-18,700
FY 2008	N/A	15,050-18,250	15,050-18,250	450	N/A	450	15,500-18,700
FY 2009	N/A	16,900-19,500	16,900-19,500	400	N/A	400	17,300-19,900

Project funds will be used prior to validation of the project performance baseline and CD-2/3 approval in order to complete and repackage the drawings and otherwise prepare and evaluate the RFP for construction.

4. Project Description, Justification, and Scope

The project will provide for the rebuilding and restoration of approximately 15.6 miles of the Mercury Highway at the Nevada Test Site (NTS).

Justification
The NTS is a major national asset and serves important needs of the National Nuclear Security Administration (NNSA) and other Federal Departments.

Major NNSA missions at the NTS include Test Readiness, Directed Stockpile Work, Campaign 1, Campaign 2, and Campaign 4, as well as missions from the Department of Defense and Homeland Security. In addition, there are missions at the NTS associated with the storage of radiologically contaminated hazardous wastes.

Mercury Highway is the primary access highway for any activity at the NTS, including subcritical experiments and future missions. This all-weather, paved, asphaltic-concrete road has been in service for over 40 years. All personnel, heavy equipment, and supplies entering and/or exiting the NTS depend upon this access route. The pavement surface has severely deteriorated because of age, ground motion from underground nuclear events, and heavy truck traffic. Trucks frequently carry loads that far exceed normal highway limits, i.e., H-20 highway wheel-loading.

Mercury Highway has been identified as a safety issue regarding the transport of special nuclear material and high explosives. The protection of workers and the environment by addressing the issue *before* accidents can occur is consistent with the Department of Energy Secretary's direction notwithstanding a cost/benefit analysis. It is not considered good stewardship at the NTS to wait until problems occur (based upon "user complaints or accident statistics") before developing a project, especially considering the time required to get a line item project approved and executed.

In addition to meeting the Facilities and Infrastructure Recapitalization Program (FIRP) goals of buying down deferred maintenance, the execution of this project will also meet the mission need for NTS

programs. The following is a listing, with a brief explanation of function, of some of the more important programs and/or facilities that depend on Mercury Highway as their primary access route.

1. The Device Assembly Facility (Area 6). This is primary location of all nuclear explosive operations at NTS. This area also supports the relocated Criticality Experiments Facility (CEF).

2. U1a/U1h Complex (Area 1). Utilized for dynamic subcritical experiments involving special nuclear materials and hydrodynamics.

3. The Control Point (CP) Complex (Area 6). Command center for all forward area testing. Also houses fire fighting and security centers.

4. The Area 6 Construction Facilities. Heavy-duty maintenance and equipment repair facility, and a decontamination facility. It also includes the Atlas Machine facility.

5. High Explosives Facilities (Area 4). The Big Explosives Experimental Facility (BEEF) is an aboveground high-explosives test bed.

6. An Explosive Ordnance Disposal Site (Area 11). This is a Resource Conservation and Recovery Act permitted treatment unit.

7. The Area 3 Radioactive Waste Management Site (Area 3). Bulk low-level waste is disposed of in selected subsidence craters.

8. Industrial Complex (Area 1). Maintenance and storage area for large-hole drilling equipment. Complex also includes a concrete batch plant and storage areas for bulk construction materials.

9. Area 12. This area contains tunnels supporting programs involving the detonation of conventional or prototype explosives and munitions.

10. Test Readiness (Areas 6, 2, 3, 12, 19, and 20) to maintain the critical technologies, staff skills, and infrastructure at NTS to enable resumption of nuclear testing.

11. Unusual Missions by others (some classified) are scattered west and north of Mercury Highway such as X-Tunnel DEMIL, Dipole Hail, Counter Terrorism, and Exercises at multiple sites.

Scope

This project will rehabilitate and improve approximately 15.6 miles of the Mercury Highway. This will bring the reconstructed area to the UIa/U1h Complex which is a logical end point. The reconstruction of an additional 3.7 miles of road north of U1a to complete improvements to the BEEF facility will be included as an additive alternate in the project. The base project will realize approximately $17,000,000 (FY 2003 dollars) of deferred maintenance buy-down, which ties into the FY 2003 Baseline.
The FY 2009 funding will be used to complete physical construction.

The project will be conducted in accordance with the project management requirements in DOE Order 413.3A and DOE Manual 413.3-1, Program and Project Management for the Acquisition of Capital Assets.

5. Financial Schedule

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
Design			
FY 2008	600	600	400
FY 2009	0	0	200
Total, Design	600	600	600
Construction			
FY 2008	7,051[a]	7,051	0
FY 2009	11,700	11,700	18,601
FY 2010	0	0	150
Total, Construction	18,751	18,751	18,751
TEC			
FY 2008	7,651	7,651	400
FY 2009	11,700	11,700	18,801
FY 2010	0	0	150
Total, TEC	19,351	19,351	19,351
Other Project Cost (OPC)			
OPC except D&D			
FY 2006	300	300	83
FY 2007	100	100	317
Total, OPC except D&D	400	400	400
D&D			
FY N/A	N/A	N/A	N/A
Total, D&D	N/A	N/A	N/A
OPC			
FY 2006	300	300	83
FY 2007	100	100	317
Total, OPC	400	400	400
Total Project Cost (TPC)			
FY 2006	300	300	83
FY 2007	100	100	317
FY 2008	7,651	7,651	400
FY 2009	11,700	11,700	18,801
FY 2010	0	0	150
Total, TPC	19,751	19,751	19,751

[a] Original FY 2008 appropriation was $7,720,000. This was reduced by $68,935 as a result of a mandatory rescission in the FY 2008 Consolidated Appropriations Act (P.L. 110-161).

6. Details of Project Cost Estimate

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate[a]	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Repackage Drawings	50	N/A	TBD
Prepare & Evaluate RFP	130	N/A	TBD
Project & Design Management	300	N/A	TBD
Contingency	120	N/A	TBD
Total, Design	600	N/A	TBD
Construction			
Site Preparation	N/A	N/A	TBD
Equipment	N/A	N/A	TBD
Other Construction	16,865	12,750	TBD
Contingency	1,886	3,050	TBD
Total, Construction	18,751	15,800	TBD
Total, TEC	19,351	15,800	TBD
Contingency, TEC	2,006	3,050	TBD
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning			
Conceptual Design	400	410	
Start-Up			
Contingency	0	40	
Total, OPC except D&D	400	450	
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	400	450	TBD
Contingency, OPC	0	40	TBD
Total, TPC	19,751	16,250	TBD
Total, Contingency	2,006	3,090	TBD

7. Schedule of Project Costs

For schedule of project costs, see Section 5, “Financial Schedule.”

[a] Previous Total Estimate is from FY 2008 PDS.

8. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	1Q FY 2010
Expected Useful Life (number of years)	30
Expected Future Start of D&D of this capital asset (fiscal quarter)	N/A

(Related Funding requirements)

(dollars in thousands)

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

9. Required D&D Information

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

10. Acquisition Approach

This project will be a design-bid-build acquisition. Nearly all design work was done by the site Managing and Operating Contractor as part of a previous project. Using FY 2008 capital construction funds, the design and other documents will be packaged by the Managing & Operating Contractor into a Request for Proposal to be sent out to road building contractors. A Performance Baseline will be established based on the government estimate and an analysis of bid proposals received. Upon receipt of proposals the project team will submit the required documents for CD-2 and 3 approval. Upon CD-2 and 3 approvals, the Managing & Operating Contractor will award a subcontract for construction based on the best proposal received. The Managing & Operating Contractor will monitor the construction work to confirm compliance with design drawings and specifications, ensure required field tests are conducted per acceptance criteria, and verify all proposed field changes are reviewed and approved by the Design Authority. The Federal Project Director will oversee the Managing & Operating Contractor, for the construction oversight of this project.

07-D-253, TA-1 Heating Systems Modernization
Sandia National Laboratories, New Mexico
Project Data Sheet (PDS) is for Construction

1. Significant Changes

The most recent DOE O 413.3A approved Critical Decision (CD) is CD-3A, Approve Start of Construction for FY 2007 work, which was approved on 3/13/2007 with a Total Project Cost (TPC) of $58,571,000.

Recent changes in market conditions combined with increasing cost to perform current acquisition strategy have resulted in a new TPC of $61,730,000. A baseline change proposal was executed during the first quarter of FY 2008 to document this change.

Removed "Steam Plant Turndown" scope of work from the project and moved $25,246 to Construction Contingency.

A Federal Project Director with certification level III has been assigned to this project.

This PDS is an update of the FY 2008 PDS.

2. Design, Construction, and D&D Schedule

(fiscal quarter or date)

	CD-0	CD-1 (Design Start)	(Design/PED Complete)	CD-2	CD-3 (Construction Start	CD-4 (Construction Complete)	D&D Start	D&D Complete
FY2006	12/03/03	03/09/05	3QFY2006	1QFY2006	2QFY2007	2QFY2011	1QFY2010	1QFY2011
FY2007			6/21/06	11/17/05	2QFY2007	2QFY2011	1QFY2010	1QFY2011
FY2008					2QFY2007	2QFY2011	1QFY2010	1QFY2011
FY2009					2QFY2008	2QFY2011	1QFY2010	1QFY2011

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 (Start Construction for FY07 Packages)	CD-3B (Start Construction for FY08 Packages)
FY2006	2QFY2007	
FY2007	2QFY2007	
FY2008	2QFY2007	
FY2009	3/13/2007	2QFY2008

CD-3A – Start of Construction for FY 2007 procurement packages
CD-3B – Start of Construction for FY 2008 procurement packages

3. Baseline and Validation Status

(dollars in thousands)

	TEC, PED	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D[a]	OPC, Total	TPC
FY06	5,976	49,524	55,500	3,178	6,159	3,178	58,678
FY07	5,869	49,524	55,393[b]	3,178	6,159	3,178	58,571
FY08	5,869	49,524	55,393	3,178	6,159	3,178	58,571
FY09	4,848[c]	53,704	58,552	3,178	6,159	3,178	61,730

4. Project Description, Justification, and Scope

Project Description

New building heating systems will be designed and constructed for approximately 50 buildings of various sizes, situated throughout Technical Area I and adjacent areas. The natural gas distribution utility will be modified to deliver natural gas to each building in a reliable and safe manner. The existing steam to hot water conversion equipment will be removed and, in many cases, the new boiler(s) and piping will be installed in the same space. In other locations, new stand-alone facilities may be required because of the lack of space in the building.

The central steam plant will be decommissioned, abated (asbestos, lead paint, etc.), and demolished. The tanks and piping will be removed and made available for reapplication or salvage. Finally, the steam pits that contain asbestos materials will be abated and abandoned in place. All steam and condensate piping will be abandoned in place.

Project Justification

The objective of Sandia's Technical Area – I (TA-I) Heating Systems Modernization (HSM) project is to prevent further degradation of the 50-year old, mission essential, TA-I heating utility by upgrading to a reliable, cost effective, safe and environmentally friendly heating system that mitigates risks and

[a] D&D costs are included in the Total Estimated Cost (TEC).

[b] The TEC and TPC reflect rescissions to PED funds (05-D-160-010) included in the Department of Defense Appropriations Acts of 2005 and 2006.

[c] The TEC and TPC reflect PED reduction in BCP 07-03 and Construction contingency increase in proposed BCP 08-01.

extends the useful life of this infrastructure to the year 2035. The project will eliminate the current deferred maintenance associated with the central steam plant and the steam/condensate distribution system, as well as the steam to hot water conversion equipment in the affected buildings. The environmental risk associated with operation of the central steam plant and the buried, leaking steam/condensate distribution system will be substantially mitigated as well.

Project Scope

The Sandia National Laboratories Albuquerque facilities include five technical areas and several remote sites. These facilities include a total of 10,400 employees, contractors, and resident visitors. Technical Area – I (TA-I) houses 50% of this workforce in 3.6 million sq. ft. of buildings over a 320-acre site. The HSM project will upgrade the heating systems that serve approximately 50 buildings and 3.0 million sq. ft. throughout TA-I. The natural gas distribution utility will be modified to deliver natural gas to each building in a reliable and safe manner. The existing steam to hot water conversion equipment will be removed and, in many cases, the new boiler(s) and piping will be installed in the same space. In other locations, new stand-alone facilities may be required because of the lack of space in the building.

The central steam plant will be decommissioned, abated (asbestos, lead paint, etc.), and demolished. The fuel oil system that serves as a second energy source for the central steam plant will have the inventory reduced either through salvage or through burning, and the remainder pumped out for removal. The tanks and piping will be removed and made available for reapplication or salvage. All steam and condensate piping will be abandoned in place.

The project will:

- Provide sufficient capacity to serve the building requirements, including space heating, domestic water heating, humidification, and process loads.
- Be compatible with the existing and planned building systems and serve the range of operating conditions required in the buildings.
- Provide systems to serve for the foreseeable future (25 years), with sufficient flexibility to support changing requirements.
- Address multiple reliability needs based on current and planned building use.
- Meet or exceed requirements of applicable codes and standards to assure a safe environment for maintenance and operations personnel as well as building occupants.
- Comply with applicable environmental regulations.

The FY 2009 funding ($15,755,000) will be used to convert the final buildings remaining after the FY 2007 and FY 2008 conversions. These buildings are in the northwest portion of Technical Area I and are primarily older buildings.

The anticipated deferred maintenance reduction associated with this project is $37,420,000.

The project is being conducted in accordance with the project management requirements in DOE O 413.3A and DOE M 413.3-1, Program and Project Management for the Acquisition of Capital Assets, and all appropriate project management requirements have been met.

5. Financial Schedule

(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED			
FY05	2,976	2,976	1,896
FY06	2,571[a]	1,872	2,703
FY07	0	0	249
FY08	(699)[b]	0	0
FY09	0	0	0
Total, PED (05-D-160-01)	4,848	4,848	4,848
Construction			
FY07	14,500	14,500	12,847
FY08	12,751[c]	12,751	13,545
FY09	15,755	15,755	12,597
FY10	9,963	9,963	9,733
FY11	0	0	4,247
Total, Construction	52,969	52,969	52,969
TEC			
FY05	2,976	2,976	1,896
FY06	2,571	1,872	2,703
FY07	14,500	14,500	13,096
FY08	12,052	12,751	13,545
FY09	15,755	15,755	12,597
FY10	9,963	9,963	9,733
FY11	0	0	4,247
Total, TEC	57,817	57,817	57,817
Other Project Cost (OPC)			
OPC except D&D			
FY03	450	450	176
FY04	1,000	1,000	654
FY05	100	100	415
FY06	85	85	48
FY07	500	500	222
FY08	500	500	551
FY09	500	500	630
FY10	43	43	162
FY11	0	0	320
Total, OPC except D&D	3,178	3,178	3,178
D&D (included in TEC)	6,159	6,159	6,159
OPC (See above)			

[a] Original FY 2006 appropriation was $2,893,000. $322,000 was realigned within PDS 05-D-160 from subproject 05-D-160-01 to 05-D-160-02 Electrical Distribution Systems Upgrade Project.

[b] $699,000 will be utilized as a use of prior year balances offset to Weapons Activities in FY 2008.

[c] Original FY 2008 appropriation was $12,866,000. This was reduced by $114,886 as a result of a mandatory rescission in the FY 2008 Consolidated Appropriations Act (P.L. 110-161).

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Total Project Cost (TPC)			
FY03	450	450	176
FY04	1,000	1,000	654
FY05	3,076	3,076	2,311
FY06	2,656	1,957	2,751
FY07	15,000	15,000	13,318
FY08	12,552	13,251	14,096
FY09	16,255	16,255	13,227
FY10	10,006	10,006	9,895
FY11	0	0	4,567
Total, TPC	60,995	60,995	60,995

6. Details of Project Cost Estimate

	(dollars in thousands)		
	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED)			
Design	4,848	4,848	4,807
Contingency	0	1,021	1,169
Total, PED	4,848	5,869	5,976
Construction			
Site Preparation	39,033	31,805	31,297
Equipment	2,458	3,047	3,159
Other Construction	7,840	7,946	8,156
Contingency	3,638	6,726	6,912
Total, Construction	52,969	49,524	49,524
Total, TEC	57,817	55,393	55,500
Contingency, TEC	3,638	7,747	8,081
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	176	176	176
Conceptual Design	905	905	905
Start-Up	1,885	1,938	1,895
Contingency	212	159	202
Total, OPC except D&D	3,178	3,178	3,178
D&D (included in TEC)			
Total, OPC	3,178	3,178	3,178
Contingency, OPC	212	159	202
Total, TPC	60,995	58,571	58,678
Total, Contingency	3,850	7,906	8,283

7. Schedule of Project Costs

For schedule of project costs, see Section 5, "Financial Schedule."

8. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	2QFY11*
Expected Useful Life (number of years)	30
Expected Future Start of D&D of this capital asset (fiscal quarter)	1QFY10

*Beneficial Occupancy will occur throughout the construction period as buildings are completed. Date shown is CD-4.

(Related Funding requirements)

(dollars in thousands)

	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	NC	1,659	NC	36,389
Maintenance	NC	450	NC	8,596
Total, Operations & Maintenance	NC	2,109	NC	44,985

9. Required D&D Information

Area	Square Feet
Area of new construction	2,100
Area of existing facility(s) being replaced	18,307
Area of additional D&D space to meet the "one-for-one" requirement	NA

Name(s) and site location(s) of existing facility(s) to be replaced: SNLA, Bldg 605

10. Acquisition Approach

This project will be a design-bid-build acquisition. The Management and Operating contractor will provide the direct project management, direct construction management and administer the design and construction contracts. Design services are being provided by an experienced, small business qualified engineering firm on a firm, fixed price basis. The design services contract was established based on best value to the government, considering qualifications and price. Construction services will be accomplished by multiple, small business, firm fixed price contracts awarded on the basis of competitive bids to pre-qualified contractors.

06-D-603, Steam Plant Life Extension (SPLE) Project
Y-12 National Security Complex, Oak Ridge, Tennessee
Project Data Sheet (PDS) is for Construction

1. Significant Changes

The SPLE project received CD-2/3 in November 2005 to achieve performance baseline approval for the life extension of the existing steam plant. Because the cost of the project increased by $27,000,000 at Title II Design, the project re-evaluated alternatives and determined that a baseline change would be required to revise the scope of the project to bring costs within the previously approved baseline range. Baseline Change Proposal (BCP) 12-07-07 was approved on February 28, 2007 to allow re-approval of CD-1, which changed the scope, schedule, and reduced cost of the project and a preliminary cost range was established while achieving mission requirements.

The most recent DOE O 413.3A approved Critical Decision (CD) is CD-2/3. CD-2/3 was approved on September 24, 2007, with a total project cost of $61,457,000.

A Federal Project Director with certification Level III has been assigned to this project.

This PDS is an update of the FY 2008 PDS.

Project costs at Title II Design for the life extension of the existing coal fired steam plant were estimated to exceed the baseline of $61,500,000 by $27,000,000. A re-assessment of alternatives for supplying steam to the Y-12 National Security Complex (NSC) was performed including: 1) proceed with the full scope of life extension of existing steam plant estimated at $89,000,000, 2) reduce the work scope for the life extension of the existing steam plant to stay within the original baseline, 3) terminate the line item and proceed with a series of General Plant Projects (GPPs) to extend the life of the existing steam plant, or 4) change the method of accomplishment for supplying steam to the Y-12 Complex from life extension of the existing plant to installation of a new gas fired package boiler plant. It was determined that a new gas fired package boiler plant would be an effective alternative to extending the life of the current steam plant. The skid mounted package boiler steam plant would be a long term solution, scalable to the Y-12 Complex's existing and future energy requirements. On February 28, 2007, NNSA-HQ approved a BCP that authorized the SPLE project to proceed with development of the scope, cost, and schedule for the gas fired package boiler alternative and reissue a CD-2/3 for this new alternative. CD-2/3 was approved on September 24, 2007.

2. Design, Construction, and D&D Schedule

(fiscal quarter or date)

	CD-0	CD-1 (Design Start)	(Design/PED Complete)	CD-2	CD-3 (Construction Start	CD-4 (Construction Complete)	D&D Start	D&D Complete
FY2006	11/13/2003	10/19/2004	4Q FY 2006	1Q FY 2006	3Q FY 2007	1Q FY 2010	N/A	N/A
FY2007	11/13/2003	10/19/2004	3Q FY 2008	3Q FY 2007	3Q FY 2007	1Q FY 2010	N/A	N/A
FY2008	11/13/2003	10/19/2004	3Q FY 2008	1Q FY 2006	3Q FY 2007	1Q FY 2010	N/A	N/A
FY2009	11/13/2003	2/28/2007	4Q FY 2008	9/24/2007	9/24/2007	2Q FY 2010	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
FY2006			44,867	5,363	N/A	5,363	50,230
FY2007	11,268	44,831	56,099	5,358	N/A	5,358	61,457
FY2008	11,268	44,831	56,099	5,358	N/A	5,358	61,457
FY2009	11,668	44,431	56,099	5,358	N/A	5,358	61,457

4. Project Description, Justification, and Scope

Project Description
The objective of the Steam Plant Life Extension (SPLE) Project is to refurbish the existing steam service to ensure the reliability and affordability of this "mission essential" utility service in support of NNSA and other DOE missions at the Y-12 National Security Complex. The end-of-life for the existing steam plant is currently projected to be nominally year 2010.

This project directly supports the recommendation of the December 2001 Nuclear Posture Review to revitalize the defense infrastructure to increase confidence in the deployed forces, eliminate unneeded weapons, and mitigate the risks of technological surprise. It directly contributes to the DOE Strategic Theme 2, Nuclear Security: Ensuring America's Nuclear Security. It also supports achievement of DOE Goal 2.1, Nuclear Deterrent: Transform the Nation's nuclear weapons stockpile and supporting infrastructure to be more responsive to the threats of the 21st Century.

In FY 2010, the project will complete construction of the new gas fired package boiler steam plant. Startup and testing of the new steam plant will be completed during this period.

Justification
The existing steam plant has been operating continuously since its construction in 1954. A service life extension upgrade completed in the mid-1980s extended the life of three of the four boilers (boilers 1, 2, and 4) and supporting auxiliaries to about 2010 (boiler 3 was not upgraded). The steam plant has undergone no other significant modifications or upgrades.

In its current condition, the steam plant is approaching the end of its useful life. An inspection in FY 2003 found boiler 4 to be in good condition. Boilers 1 and 2 have a history similar to that of boiler 4 and are also judged to be in reasonable condition. Boiler 3 has been placed in safe shutdown and is planned to remain out of service due to reduced steam production requirements and significant costs for restoring it to a safe and reliable operating condition. Some components of the auxiliary equipment, including the coal-handling system, feedwater system, forced-draft system, induced-draft system, ash-handling systems, electrical systems, and the plant instrumentation and control systems, are antiquated and in

various states of deterioration. These components are deemed to be unreliable, technologically obsolete, and inefficient. Spare parts for many systems are not readily available.

For Y-12 to continue to meet its mission, the existing steam-generating capability must be replaced or restored to a condition that will provide a reliable, cost-effective source of steam to the Y-12 National Security Complex.

If the SPLE Project is not completed during 2010, failure of the existing steam service may occur, and major restoration actions will be required to restore service. Failure of steam service would potentially result in loss of mission capability at Y-12.

As noted in the "Significant Changes" section, several new approaches were evaluated for continuing to meet the steam needs of the Y-12 Complex.

Scope

A new gas fired package boiler plant with fuel oil backup capabilities will be designed and constructed using the services of a design/build subcontractor. This new plant will replace the existing coal fired steam plant.

Completion of this project will eliminate approximately $27,000,000 in deferred maintenance costs associated with the steam plant facility at Y-12.

FY 2009 funding will be utilized to complete the fixed price construction work along with equipment tie-ins, testing, and checkout.

Compliance with Project Management Order

- Critical Decision – 0: Approve Mission Need – November 13, 2003
- Critical Decision – 1: Approve Preliminary Baseline Range – October 19, 2004
- External Independent Review Final Report – November 16, 2005
- Critical Decision – 2/3A: Approve Performance Baseline and Long-Lead Procurement – November 22, 2005
- Critical Decision – 1 Package Boiler Option: Approve Preliminary Baseline Range – February 28, 2007.
- Re-Issue Critical Decision – 2/3: Approve Performance Baseline and Start of Construction for SPLE sub-project Package Boiler Plant– September 24, 2007
- Critical Decision – 4: Approve Start of Operations – 4Q FY 2010
- Project Close-out: 4Q FY 2010

The project is being conducted in accordance with the project management requirements in DOE O 413.3A and DOE M 413.3-1, Program and Project Management for the Acquisition of Capital Assets, and all appropriate project management requirements have been met.

5. Financial Schedule

(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED			
FY2005	2,976	2,976	2,583
FY2006	7,644	7,644	6,825
FY2007	1,048	1,048	1,547
FY2008	0	0	713
Total, PED (05-D-160-02)	11,668	11,668	11,668
Construction			
FY2006	722	722	0
FY2007	17,811	17,811	419
FY2008	14,733[a]	14,733	12,783
FY2009	10,878	10,878	23,621
FY2010	0	0	7,321
Total, Construction	44,144	44,144	44,144
TEC			
FY2005	2,976	2,976	2,583
FY2006	8,366	8,366	6,825
FY2007	18,859	18,859	1,966
FY2008	14,733	14,733	13,496
FY2009	10,878	10,878	23,621
FY2010	0	0	7,321
Total, TEC	55,812	55,812	55,812
Other Project Cost (OPC)			
OPC except D&D			
FY2004	1,100	1,050	1,066
FY2005	1,200	964	964
FY2006	317	603	587
FY2007	1,078	1,078	688
FY2008	1,045	1,045	293
FY2009	600	600	332
FY2010	18	18	1,428
Total, OPC except D&D	5,358	5,358	5,358
D&D			
FY	N/A	N/A	N/A
Total, D&D	N/A	N/A	N/A

[a] Original FY 2008 appropriation was $14,866,000. This was reduced by $132,744 as a result of a mandatory rescission in the FY 2008 Consolidated Appropriations Act (P.L. 110-161).

	(dollars in thousands)		
	Appropriations	Obligations	Costs
OPC			
FY2004	1,100	1,050	1,066
FY2005	1,200	964	964
FY2006	317	603	587
FY2007	1,078	1,078	688
FY2008	1,045	1,045	293
FY2009	600	600	332
FY2010	18	18	1,428
Total, OPC	5,358	5,358	5,358
Total Project Cost (TPC)			
FY2004	1,100	1,050	1,066
FY2005	4,176	3,940	3,547
FY2006	8,683	8,969	7,412
FY2007	19,937	19,937	2,654
FY2008	15,778	15,778	13,789
FY2009	11,478	11,478	23,953
FY2010	18	18	8,749
Total, TPC	61,170	61,170	61,170

6. Details of Project Cost Estimate

	(dollars in thousands)		
	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED)			
Design	11,622	10,760	10,760
Contingency	46	508	508
Total, PED	11,668	11,268	11,268
Construction			
Site Preparation	0	0	0
Equipment	16,000	4,800	4,800
Other Construction	18,132	31,038	31,038
Contingency	10,012	8,993	8,993
Total, Construction	44,144	44,831	44,831
Total, TEC	55,812	56,099	56,099
Contingency, TEC	10,058	8,993	8,993
Other Project Cost (OPC)			

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
OPC except D&D			
Conceptual Planning	1,066	1,066	1,066
Conceptual Design			
External Independent Review	0	125	125
Start-Up	3,158	3,952	3,952
Contingency	1,134	215	215
Total, OPC except D&D	5,358	5,358	5,358
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	5,358	5,358	5,358
Contingency, OPC	1,134	215	215
Total, TPC	61,170	61,457	61,457
Total, Contingency	11,192	9,208	9,208

7. Schedule of Project Costs

For schedule of project costs, see Section 5, “Financial Schedule.”

8. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	4Q FY 2010
Expected Useful Life (number of years)	30
Expected Future Start of D&D of this capital asset (fiscal quarter)	N/A

(Related Funding requirements)

(dollars in thousands)

	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	3,800	3,800	57,000	57,000
Maintenance	3,300	3,300	49,500	49,500
Total, Operations & Maintenance	7,100	7,100	106,500	106,500

9. Required D&D Information

Area	Square Feet
Area of new construction	~ 19,000 sq ft
Area of existing facility(s) being replaced	~ 50,000 sq ft
Area of additional D&D space to meet the "one-for-one" requirement	0 sq ft.

Name(s) and site location(s) of existing facility(s) to be replaced:
Steam Plant 9401-3.

10. Acquisition Approach

Overall project direction and responsibility for this project resides with the NNSA. NNSA has assigned day-to-day management of project activities to the Y-12 management and operating (M&O) contractor, BWXT Y-12, including design, procurement, construction, and commissioning.

The M&O will be responsible for the management of all design activities. The new package boiler steam plant preliminary design (Title I) will be performed by BWXT Y-12. Engineering with final design (Title II), and Title III/construction support will be provided by a fixed price design/build subcontractor. BWXT Y-12 Engineering will perform Title I, II and III for utility tie-ins.

Under the design/build approach, the subcontractor will procure all equipment, construction materials and commodities to support the approved design. The M&O will perform construction oversight of the design/build subcontractor.

The M&O will be responsible for the management of all construction, installation, and demolition. To the extent practical, construction will be performed using a subcontract that is awarded based on fixed-price competitive bidding. When allowed by labor standards, M&O maintenance forces will provide tie-ins and other support to the construction subcontractor. The M&O direct hire forces may be required for specific construction activities.

The M&O will perform all transition to operations activities including the preparation of operating and maintenance procedures, training of the M&O staff, startup testing of facilities, transition, and all readiness assessments. Subcontractors and vendors may be used to provide task-based support for these activities.

06-D-601, Electrical Distribution System Upgrade
Pantex Plant, Amarillo, Texas
Project Data Sheet (PDS) is for Construction

1. Significant Changes

The most recent DOE O 413.3A approved Critical Decision (CD) is CD-3, Approve Start of Construction, approved on September 13, 2007.

Latest approved Baseline Change was on July 11, 2007 with a Total Project Cost (TPC) of $19,973,000. This Baseline Change adjusted the project schedule for CD-3 to September 13, 2007 and CD-4 to 1QFY2010.

A Federal Project Director with certification level III has been assigned to this project.

This PDS is an update of the FY2008 PDS. Significant Changes are:

- The Project Engineering & Design (PED) funds have been adjusted based on a change in the acquisition strategy for construction. Per the new acquisition strategy, the construction contract will be solicited, awarded, and managed by the M&O contractor instead of federally managed small business executed through the NNSA Service Center. This action requires a $322,000 adjustment to PED and a $50,000 increase to OPC funding.
- The Electrical Distribution System Upgrade (EDSU) CD-4 Milestone date has changed from 4QFY2009 to the 1QFY2010.

2. Design, Construction, and D&D Schedule

(fiscal quarter or date)

	CD-0	CD-1 (Design Start)	(Design/PED Complete)	CD-2	CD-3 (Construction Start)	CD-4 (Construction Complete)	D&D Start	D&D Complete
FY 2006	10/29/03	9/13/04	4QFY2006	12/22/05	4QFY2006	3QFY2008	N/A	N/A
FY 2007	10/29/03	9/13/04	4QFY2006	12/22/05	4QFY2006	4QFY2008	N/A	N/A
FY 2008	10/29/03	9/13/04	4QFY2006	12/22/05	4QFY2007	4QFY2009	N/A	N/A
FY 2009	10/29/03	9/13/04	1QFY2008	12/22/05	9/13/07	1QFY2010	N/A	N/A

Compliance with Project Management Order

CD-0 – Approve Mission Need – October 2003
CD-1 – Approve Alternative Selection and Cost Range – September 2004
CD-2 – Approve Performance Baseline – December 2005
External Independent Review Final Report – August 2005
Independent Cost Estimate – December 2006
CD-3 – Approve Start of Construction – September 13, 2007
CD-4 – Approve Start of Operations or Project Closeout – 1QFY2010
D&D Start – Start of Demolition & Decontamination (D&D) work – Not Applicable
D&D Complete – Completion of D&D work – Not Applicable

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 2004	1,600	8,100	9,700	1,000	0	1,000	10,700
FY 2005[a]	1,587	8,100	9,687	1,000	0	1,000	10,687
FY 2006[b]	1,587	8,060	9,647	1,000	0	1,000	10,647
FY 2007	1,587	10,389	11,976	1,125	0	1,125	13,101
FY 2008	1,587	16,889	18,476	1,125	0	1,125	19,601
FY 2009	1,909	16,889	18,798	1,175	0	1,175	19,973

4. Project Description, Justification, and Scope

The Electrical Distribution System Upgrade project has been identified as a high priority project in the Pantex Plant Ten Year Comprehensive Site Plan. A key element of the site infrastructure is the electrical power distribution system. This project addresses areas of the electrical distribution system that are of questionable reliability due to code noncompliance, aging equipment, and unavailability of replacement parts. Specifically the areas are as follows:

- Generator / UPS / Panelboard / HVAC Replacement: A short circuit/coordination study of the Pantex Plant's 12470, 480, and 208-volt distribution systems completed in 1994/1995 identified substations and equipment that had ground fault/coordination deficiencies in violation of the National Electrical Code. These codes were adopted subsequent to Pantex electrical distribution equipment installation and require substations and distribution equipment to be protected from ground faults and line surges. The project design and construction will bring Pantex distribution equipment into compliance with the National Electrical Code. Facility generators and Uninterruptible Power Supplies (UPS) will be replaced that have operations and maintenance problems due to their age, obsolescence and difficulty in obtaining parts as the equipment ages. HVAC unit associated with the UPS must also be replaced, in order to keep UPS batteries below required operating temperature. Facilities utilizing these generators and UPS have been deemed critical or mission essential, to Pantex Plant operations.

- Overhead Electrical Power Line Replacement: The existing overhead primary pole and underground secondary lines are 30 to 50 years old. Lines are deteriorating to the point that a major fault or weather incident could destroy lines affecting critical facilities, systems and equipment, and potentially cause a major outage to the Pantex plant.

The deferred maintenance reduction associated with this project is $2,970,000 (FY 2003 baseline).

The project is being conducted in accordance with the project management requirements in DOE O 413.3A and DOE M 413.3-1, Program and Project Management for the Acquisition of Capital Assets, and all appropriate project management requirements have been met.

[a] The TEC was reduced to $9,687,000 due to the FY2005 rescission of 0.8 percent included in the Consolidated Appropriations Act, 2005 (P.L. 108-447).

[b] The TEC was reduced to $9,647,000 due to the FY2006 rescission of 1.0 percent included in the Consolidated Appropriations Act, 2006 (P.L. 109-148).

5. Financial Schedule

(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED			
FY 2005	1,587[a]	1,587	900
FY 2006	0	0	400
FY 2007	322[b]	322	500
FY 2008	0	0	109
Total, PED (05-D-160-03)	1,909	1,909	1,909
Construction			
FY 2006	3,960[c]	3,960	0
FY 2007	6,429	6,429	0
FY 2008	2,452[d]	2,452	10,000
FY 2009	4,000	4,000	6,841
FY 2010	0	0	0
Total, Construction	16,841	16,841	16,841
TEC			
FY 2005	1,587	1,587	900
FY 2006	3,960	3,960	400
FY 2007	6,751	6,751	500
FY 2008	2,452	2,452	10,109
FY 2009	4,000	4,000	6,841
FY 2010	0	0	0
Total, TEC	18,750	18,750	18,750
Other Project Cost (OPC)			
OPC except D&D			
FY 2004	717	717	552
FY 2005	83	83	224
FY 2006	100	225	259
FY 2007	275	150	140
FY 2008	0	0	0
Total, OPC except D&D	1,175	1,175	1,175
D&D			
FY	0	0	0
Total, D&D	0	0	0

[a] The FY 2005 appropriated amount of $1,600,000 was reduced by $13,000 to $1,587,000 by a rescission (P.L. 108-447).

[b] Reflects reallocation of $322,000 from Heating Systems Modernization to Electrical Distribution System Upgrade within 05-D-160, PED.

[c] The FY 2006 appropriated amount of $4,000,000 was reduced by $40,000 to $3,960,000 by a rescission (P.L. 109-148).

[d] Original FY 2008 appropriation was $2,474,000. This was reduced by $22,091 as a result of a mandatory rescission in the FY 2008 Consolidated Appropriations Act (P.L. 110-161).

	(dollars in thousands)		
	Appropriations	Obligations	Costs
OPC			
FY 2004	717	717	552
FY 2005	83	83	224
FY 2006	100	100	259
FY 2007	275	275	140
FY 2008	0	0	0
Total, OPC	1,175	1,175	1,175
Total Project Cost (TPC)			
FY 2004	717	717	552
FY 2005	1,670	1,670	1,124
FY 2006	4,060	4,060	659
FY 2007	7,026	7,026	640
FY 2008	2,452	2,452	10,109
FY 2009	4,000	4,000	6,841
FY 2010			
Total, TPC	19,925	19,925	19,925

6. Details of Project Cost Estimate

	(dollars in thousands)		
	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED)			
Design	1,899	1,587	1,587
Contingency	10	0	0
Total, PED	1,909	1,587	1,587
Construction			
Site Preparation	0	0	
Equipment	0	0	
Other Construction	14,303	14,303	8,803
Contingency	2,538	2,586	1586
Total, Construction	16,841	16,889	10,389
Total, TEC	18,750	18,476	11,976
Contingency, TEC	2,548	2,586	1,586
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	750	700	700
External Independent Review	125	125	125
Conceptual Design			
Start-Up	100	100	100
Contingency	200	200	200
Total, OPC except D&D	1,175	1,125	1,125

	(dollars in thousands)		
	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
D&D			
D&D	0	0	0
Contingency	0	0	0
Total, D&D	0	0	0
Total, OPC	1,175	1,325	1,325
Contingency, OPC	200	200	200
Total, TPC	19,925	19,601	13,101
Total, Contingency	2,748	2,786	1,786

7. Schedule of Project Costs

For schedule of project costs, see Section 5, "Financial Schedule."

8. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	1QFY2010
Expected Useful Life (number of years)	25
Expected Future Start of D&D of this capital asset (fiscal quarter)	2035

(Related Funding requirements)

	(dollars in thousands)			
	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	560	560	19,629	14,000
Maintenance	200	200	7,010	5,000
Total, Operations & Maintenance	760	760	19,000	19,000

9. Required D&D Information

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

Name(s) and site location(s) of existing facility(s) to be replaced: N/A

10. Acquisition Approach

This project will be a design-bid-build acquisition. The design services (Title I, II, and III will be accomplished by an outside A-E firm and the contract will be administered by the Management and Operating (M&O) Contractor (BWXT Pantex, LLC). An outside construction contractor, on the basis of competitive bids, will perform the construction services for this project. The construction contract will

be administered and awarded by the Management and Operating (M&O) Contractor (BWXT Pantex, LLC). Best value practices will be used for design and construction services.

Environmental Projects and Operations

Funding Schedule by Activity

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
Environmental Projects and Operations			
Long-Term Stewardship	0	8,592	40,587
Total, Environmental Projects and Operations	**0**	**8,592**	**40,587**

Outyear Funding Schedule

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
Environmental Projects and Operations				
Long-Term Stewardship	37,288	39,026	37,468	36,040
Total, Environmental Projects and Operations	**37,288**	**39,026**	**37,468**	**36,040**

Description

The Environmental Projects and Operations Program (EPO) activities continue to reduce risks to human health and the environment at National Nuclear Security Administration (NNSA) sites and adjacent areas through two mechanisms: 1) by operating and maintaining environmental cleanup systems installed by the Office of Environmental Management (EM) 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 as part of Long-Term Stewardship (LTS) that assures compliance with federal, state, and local requirements. The mission of the NNSA's EPO Management Team is to provide effective oversight of these activities and ensure integration of a responsible environmental stewardship program with the NNSA's stockpile stewardship and national security efforts.

Beginning in FY 2007, NNSA was to assume responsibility for funding and management of Long-Term Stewardship at NNSA sites that have a continuing mission and current operations. The EPO program supports LTS activities such as groundwater treatment; environmental monitoring of surface water and ground water, soils, and landfill remedies; and reporting and liaison requirements for various states. Funding was requested to assume these LTS activities in both the FY 2007 and FY 2008 Congressional Budget Requests. The FY 2007 Continuing Resolution (P.L. 110-005) did not accommodate the functional transfer from EM to NNSA; therefore, LTS activities were funded by EM, but managed by NNSA. The FY 2008 Consolidated Appropriation Act (P.L. 110-161) provides funds for this functional transfer to NNSA's EPO Program. In FY 2009, LTS activities will continue at the Kansas City Plant, Lawrence Livermore National Laboratory Main Site, and Sandia National Laboratories to meet post-completion regulatory cleanup requirements, and the LTS program will begin at LLNL Site 300 and the Pantex Plant.

The NNSA, working in concert with other Federal agencies, states, and affected stakeholders, executes its LTS activities in a cost-effective, compliant and safe manner consistent with end states that support the nuclear weapons complex mission. The NNSA's business strategy for accomplishing these LTS responsibilities have been integrated into the NNSA's business model and Planning, Programming, Budgeting, and Evaluation (PPBE) process. The NNSA EPO Program has adopted a set of management practices similar to those of the NNSA's Facilities and Infrastructure Recapitalization Program. Although the majority of LTS activities are regulatory driven, specific work elements have been identified and the Program has prioritized actions to reduce risk and ensure the successful accomplishment of the LTS program; to ensure continued consistency between remediation end states

and site uses, to ensure critical stakeholder interaction; and to implement a budget structure that integrates clarity of financial accountability with program performance.

The EPO program's LTS activities support GPRA Unit Goal 2.1.38.00 by being compliant with federal, state and local regulatory requirements to ensure LTS activities are properly conducted and that environmental compliance at NNSA sites is being maintained and managed in support of the overall goals of the ongoing programs within the Weapons Activities appropriation. The program goal is to continue to reduce risks to human health and the environment at NNSA Sites and adjacent areas, by operating and maintaining environmental cleanup systems installed by EM; and performing long-term environmental monitoring activities and analyses in a cost-effective manner that assures compliance with federal, state, and local requirements and integrates a responsible environmental stewardship program with the NNSA's Stockpile Stewardship and National Security efforts.

Under NNSA, this Program is continuing the operation of installed remediation systems and other actions necessary to accelerate environmental risk reduction as appropriate during the LTS period; thereby, maintaining the progress already made in the cleanup of the environmental legacy at NNSA Sites in accordance with applicable environmental laws and regulations, existing regulatory agreements, and in consultation with affected stakeholders and tribal governments. The successful execution of these LTS activities has a direct impact on the success of the NNSA's Stockpile Stewardship Program maintaining environmentally safe and effective operations at NNSA Sites.

Major FY 2007 Achievements

FY 2007 funding of $18,754,000 included reprogrammed funds of $1,543,000 provided by the Office of Environmental Management to meet new regulatory requirements at Sandia National Laboratories in Albuquerque.

- The LTS program was implemented at three NNSA sites Kansas City Plant (KCP), Lawrence Livermore National Laboratory (LLNL) Main Site and Sandia National Laboratories (SNL) to operate and maintain long-term environmental cleanup systems.
- Submitted documents to meet regulatory compliance - Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Five-year Review documents, Explanation of Significant Differences to the Record of Decision, monitoring reports, close-out reports, and post-closure reporting required under Resource Conservation and Recovery Part B Permits.

Major Outyear Priorities and Assumptions

The current outyear funding requirements for EPO total $149,822,000, which is sufficient to meet the LTS requirements for all sites that will have completed environmental cleanup (in FY 2006 and FY 2008) and to maintain compliance. There is a 79 percent increase in the FY 2009 funding request due to the addition of two NNSA sites (Pantex and LLNL Site 300) requiring LTS funding subsequent to the completion of the legacy environmental cleanup projects by EM. This outyear funding profile allows EPO to meet its LTS regulatory commitments for conducting the necessary Operating and Maintenance functions and ensuring that installed remedies remain protective of human health and the environment. These outyear funding estimates reflect the comprehensive regulatory requirements associated with those identified in the FY 2009 request. However, there are always uncertainties involved in any regulatory inspection or with regulatory agreements and approvals. NNSA will re-

evaluate these outyear requirements during the FY 2010 through FY 2014 Planning and Programming process based on compliance needs and additional LTS regulatory commitments.

Annual Performance Results and Targets

(R = Results; T = Targets)

Performance Indicators	FY 2005 Results	FY 2006 Results	FY 2007 Results	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Endpoint Target
Strategic Goal 2.1 (Nuclear Deterrent) GPRA Unit Program Goal 2.1.38.00, Environmental Projects and Operations										
Annual percentage of environmental monitoring and remediation deliverables that are required by regulatory agreements to be conducted at NNSA sites that are executed on schedule and in compliance with all acceptance criteria (Annual Output)	N/A	N/A	N/A	T: 95%	T: 95%	T: 95%	T: 95%	T: 95%	T: 95%	Annually, submit on schedule and receive regulator approval of at least 95% of all environmental monitoring and remediation deliverables that are required at NNSA sites by regulatory agreements.
Cumulative cost savings totaling 10% over five years for the NNSA Long Term Stewardship program demonstrated by comparison of the actual annual costs of performing the Stewardship activities at a site as compared to the budgeted annual costs of performing these same activities using Earned Value Management (EVM) principles with a target savings of 2% per year (Efficiency)	N/A	N/A	N/A	T: 2%	T: 2%	T: 2%	T:2%	T: 2%	T: 2%	Over a five year period (FY 2008-FY 2013) achieve a cumulative 10% cost savings when applying this measure.

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
Long-Term Stewardship	**0**	**8,592**	**40,587**

The NNSA is responsible for the formulation and execution of the LTS budget when the Office of Environmental Management (EM) mission is completed at the NNSA sites. The EPO Program include LTS activities such as ground water treatment, environmental monitoring of surface water and ground water, continued cleanup remedies associated with soils and landfills, reporting and liaison activities required by various states and regulatory agencies, and surveillance/monitoring of contaminated decommissioned buildings that have not been demolished upon completion of the EM mission at the site. The LTS activities initiated in FY 2007 will be funded by NNSA in FY 2009 at the Kansas City Plant (KCP), Lawrence Livermore National Laboratory (LLNL) Main Site, and Sandia National Laboratories (SNL) sites where environmental cleanup activities were completed by the Office of Environmental Management in FY 2006. In addition, the LTS activities will start at LLNL Site 300 and the Pantex Plant in FY 2009.

- **KCP LTS** **0** **1,000** **2,800**

  The LTS activities at KCP cover all activities required to continue to protect human health and the environment and are based on the remediation work completed through FY 2006. The cleanup activities at the KCP are regulated by a Resource Conservation and Recovery Act (RCRA) Post Closure Permit issued by the Missouri Department of Natural Resources. In FY 2009, LTS activities continue to cover project management and the administration of environmental restoration project activities, in addition to the operation and maintenance of a treatment and monitoring system. The KCP's RCRA Post Closure Permit requires monitoring of both ground and surface water, and the maintenance and upkeep of a comprehensive ground water monitoring system consisting of over 190 individual wells. The purpose is to ensure that ground water contaminant plumes derived from historical plant operations are contained, and do not impact ground water and surface waters adjacent to the KCP. This Permit requires the operation of a ground water treatment system to capture and treat ground water contaminated with volatile organic compounds (VOCs) and polychlorinated biphenyls (PCBs). Ten interceptor wells, a ground water seepage collection system to prevent ground water migration into a National Pollutant Discharge Elimination System (NPDES) permitted outfall, and 18 building footing tile drains are used to contain contaminated ground water. Storm sewers will be maintained to keep contamination from past release sites from entering the system and reaching nearby waterways. The Permit also requires institutional controls and maintenance of three RCRA landfill caps. Also included in this request are funds to pay a portion of cost associated with KCP's responsibility as a potentially responsible party in a superfund settlement and cost to support the Agreement In Principle with the State of Missouri.

(dollars in thousands)		
FY 2007	FY 2008	FY 2009

- **LLNL LTS** **0** **6,092** **22,274**

  Past operations at the LLNL Main Site, which involved the handling and storage of hazardous materials, resulted in the release and subsequent migration of contaminants into the soil and ground water. The major contaminants are VOCs, primarily trichloroethylene. The LLNL-Main Site environmental restoration project was completed in FY 2006. The significant increase in funding in FY 2009 is due to adding LLNL Site 300 to the LTS Program**.** Like with LLNL Main Site, past site operations have resulted in the release of contaminants into the soil and groundwater with the primary contaminants being VOC's, High Explosives, Perchlorate, Nitrate, Tritium and Uranium. EM plans to complete environmental cleanup at Site 300 at the end of FY 2008. The LTS Program is designed to continue activities associated with remedial actions EM put into place to remediate contamination from past operations; control contaminated ground water migration; and effectively remediate soil and ground water where contaminants exceed regulatory limits to protect human health, the environment, and beneficial uses of natural resources.

  In FY 2009, the LTS activities consist of maintenance of engineered and institutional controls which includes the equipment, materials, labor, and all other activities (i.e., inspections, safety upgrades, and parts replacement) required to operate and maintain 57 treatment facilities at both LLNL sites and the drainage diversion system at the Pit 7 Complex at Site 300. This also includes activities to annually re-evaluate remediation progress in mitigating risk and associated institutional controls (i.e., land and building use restrictions) to prevent exposure. The LTS program at LLNL also provides for re-evaluating controls and strategies by testing and implementing technologies for accelerating source area cleanup which includes well drilling, mechanical fracturing performance evaluation, chemical oxidation performance evaluation, bioremediation, performance evaluation, hot air injection, and source area cleanup modeling. Compliance oversight at the two LLNL sites includes activities associated with collection, management and analysis of data and a number of document deliverables (2 annual, 1 semi-annual, and four quarterly reports; 2 Five-Year Reviews; a Revised Site 300 Compliance Monitoring Plan/Contingency Plan for Site 300; and the Draft Proposed Plan for the Site 300 Building 812 Complex). Community liaison and stakeholder support activities for FY 2009 includes a scope of activities specified in the Project Management work plan focused on maintaining regulatory and community acceptance of the LLNL LTS Project at Main Site and Site 300.

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
▪ **Pantex Site**	**0**	**0**	**8,262**

The Pantex Plant legacy environmental cleanup program has historically consisted of the decontamination and decommissioning project expected to be completed in FY 2007 and an environmental restoration project scheduled for completion by the Office of Environmental Management in FY 2008. Long-Term Stewardship (LTS) activities, which include long-term surveillance and maintenance and stewardship activities, will be undertaken by NNSA EPO beginning in FY 2009, and will continue as long as necessary to ensure protection of public health and the environment. Many active corrective measures will be in place after the transition and they must be monitored and maintained. These LTS activities support commitments made in the Compliance Plan that is issued by the regulatory agencies which establish the environmental reporting requirements for the Pantex Plant in relation to the legacy environmental cleanup effort. Reporting on the performance of corrective measures and monitoring of the aquifers is required routinely throughout the year. The pump and treat systems are a significant corrective measure with many extraction wells to maintain. In addition, to pump and treat activities, the perched and Ogallala aquifer monitoring wells required by the Compliance Plan, also require maintenance. Specific remedies identified in the Corrective Measures Study/Feasibility Study such as: Operations & Maintenance (O&M) of the In Situ Bioremediation and the Irrigation System/Retention Ponds for Playa 1 will continue to meet regulatory requirements and stakeholder approval. A review of the Compliance Plan is required every 5 years to assess the effectiveness of the installed remedies. Public meetings will remain an integral part of the environmental program under LTS. The Agreement In Principle (AIP) will continue to be funded through the first two years of LTS.

▪ **SNL LTS**	**0**	**1,500**	**7,251**

In FY 2009, the SNL LTS includes all activities necessary to protect human health and the environment during operation of installed cleanup systems at legacy release sites where contamination remains. This project focuses on maintenance of remedies at 265 Environmental Restoration release sites and three groundwater sites at SNL/New Mexico (NM) and ground water monitoring at SNL/California (CA) beginning in FY 2007. In addition to routine ground water, vadose zone, and landfill cover monitoring, SNL LTS activities include: management to implement LTS, site and environmental monitoring, institutional controls, information management, and public participation and outreach. The additional funding requested in FY 2009 for Sandia is driven by regulatory required monitoring of remedies at several engineered units, which includes maintaining the frequency of groundwater monitoring and reporting on a quarterly basis versus reporting less frequently on an annual basis as proposed to regulators but not yet approved. Another new requirement is a more robust program for well abandonment and replacement, affecting the required methods to abandon wells and the associated closure certification review process. There is also an increase in Other LTS Activities for developing and maintaining critical data bases and Geographical Information Systems associated with the operation and maintenance of engineered controls needed to generate reports required by the regulators. Agreements in Principal previously funded by EM in support of community and regulatory involvement are also included in this request.

Total, Environmental Projects and Operations	**0**	**8,592**	**40,587**

Explanation of Funding Changes

	FY 2009 vs. FY 2008 ($000)
Long-Term Response Actions/Long-Term Stewardship	
▪ **KCP LTS**	
The increase is necessary to maintain compliance with regulatory requirements and to pay a portion of cost associated with KCP's responsibility as a Potentially Responsible Party in a superfund settlement.	+1,800
▪ **LLNL LTS**	
This increase is necessary to maintain compliance with regulatory requirements and the addition of the LLNL Site 300 as a new site to the LTS program beginning in FY 2009.	+16,182
▪ **Pantex LTS**	
This increase reflects the addition of Pantex as a new site to the LTS program beginning in FY 2009 to maintain compliance with recently negotiated regulatory requirements.	+8,262
▪ **SNL LTS**	
This increase at SNL is necessary to maintain compliance with regulatory requirements and meet the additional regulatory requirements imposed by the New Mexico Environment Department in FY 2007.	+5,751
Total Funding Change, Environmental Projects and Operations	**+31,995**

Capital Operating Expenses and Construction Summary

Capital Operating Expenses

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
General Plant Projects	0	0	0
Captial Equipment	0	0	0
Total, Capital Equipment	**0**	**0**	**0**

Outyear Capital Operating Expenses

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
General Plant Projects	0	0	0	0
Captial Equipment	0	0	0	0
Total, Capital Equipment	**0**	**0**	**0**	**0**

Transformation Disposition

Funding Schedule by Activity

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
Transformation Disposition			
Facility & Infrastructure Disposition	0	0	77,391
Total, Transformation Disposition	**0**	**0**	**77,391**

Outyear and Over Target Funding Schedule

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
Transformation Disposition				
Facility & Infrastructure Disposition	89,457	88,589	88,008	87,863
Total, Transformation Disposition	**89,457**	**88,589**	**88,008**	**87,863**

Description

The Transformation Disposition (TD) Program mission is to eliminate excess facilities through demolition, transfer, or sale in support of NNSA's Strategic Goal to eliminate excess real property and ensure the vitality of the nuclear weapons complex into the future. This mission directly supports and aligns with both NNSA's Complex Transformation and the Department of Energy's Nuclear Deterrent by eliminating excess facilities from the portfolio, thereby enabling reduction to the NNSA Complex footprint. Currently, the preferred alternative that has been developed as a result of Complex Transformation will be used for planning purposes assuming that a Record of Decision is promulgated in 2008. Additionally, the TD Program mission supports NNSA new construction projects through "banking" excess square footage that will be used to offset the square footage added through new construction. The TD Program reduces the number of NNSA's excess facilities and infrastructure consistent with the President's Management Agenda (PMA), Federal Real Property Council (FRPC), the DOE Three-Year Rolling Timeline (TYRT) and the Department's real property objectives. The PMA stresses the need within the federal government for real property asset managers to accurately determine, classify, and eliminate those properties that are unneeded.

The objective of this program is to develop and apply an integrated and prioritized inventory of excess facilities and infrastructure projects focusing on disposition of gross square feet (gsf) by funding the minor decontamination, dismantlement, removal and disposal of excess facilities. The TD program objective aligns with both the DOE and NNSA Strategic Plans. Firstly, the DOE Strategic Plan goal 2.1, "Nuclear Deterrent" establishes the strategic goal of a "modernized, cost-effective complex" through "reducing the number of sites, and facilities within sites…" Secondly, the DOE Strategic Plan goal 5.3, "Infrastructure" references, "The Department's real property portfolio as composed primarily of large complexes of diverse facilities of critical importance to the DOE mission, such as reactors, accelerators, and Cold War-era buildings that should be retired." The suggested strategy for mitigation per the DOE Strategic Plan is to "invest in the infrastructure to reduce overall facility square footage and improve energy efficiency and sustainability." The NNSA Strategic Plan goals 1.1 and 1.2 regarding facilities and infrastructure require corporate facilities management processes that assess facilities needs on an ongoing basis and responds with appropriate capital investment and excess real property elimination. The NNSA owns over 35 million gsf of footprint and is recommending reducing this footprint to less than 26 million gsf as part of the plan for transformation of the complex. The TD Program's performance goal will directly support this NNSA Complex Transformation goal with the disposition of

5 million gsf of footprint between FY 2009 and FY 2017 as production and research centers are consolidated, updated, and refurbished and older or redundant facilities are removed from the Weapons Activities portfolio.

During the period FY 2002 – FY 2008, NNSA demolished 3,000,000 gsf through an aggressive, cost-effective approach to facility disposition managed by the Facilities and Infrastructure Recapitalization Program (FIRP). Establishment of the TD Program is adopted using a set of management practices, processes, and valuable lessons learned from the FIRP facility disposition subprogram. The TD Program will fund projects in accordance with established criteria and priorities that target excess facilities in support of transformation of the complex, including those facilities which are not currently the responsibility of the Office of Environmental Management (EM). A portion of the funding that is requested will prepare excess process contaminated facilities for transfer to EM as an unfunded liability. Similar to FIRP, there is a planning component to the TD Program that funds planning activities in the fiscal year prior to disposition of the facility. The primary objective of planning funds is to ensure that projects are adequately planned (characterized and designed) in advance of the budget year for project start and execution. This provides for sound management, timely use of disposition funds, and effective project execution, using a graded approach to meet the requirements of DOE Order 413.3A, "*Program and Project Management for the Acquisition of Capital Assets*". Projects selected to be funded will be required to identify surveillance and maintenance savings and/or deferred maintenance cost avoidance benefits across the complex, as a result of F&I excess elimination. The TD Program works in partnership with Readiness in Technical Base and Facilities (RTBF) and their Institutional Site Support subprogram and FIRP subprograms to ensure that NNSA excess facilities and infrastructure are appropriately disposed of (sold, transferred, or demolished) in order to focus resources on support of the Stockpile Stewardship Program mission, and transformation of the complex.

The Transformation Disposition Program will make unique contributions to GPRA Unit Program Goal 2.1.59.00 by reducing the number of facilities owned and maintained by the NNSA resulting in savings in operations, maintenance, security and all other infrastructure- and indirect- related costs. Retiring the Cold War-era F&I will also allow the NNSA to better maintain facilities that house NNSA mission-enduring activities by redirecting available facilities funding to mission critical assets.

Benefit is realized through the disposition of excess, obsolete, or underutilized facilities, transferring ownership of no longer needed facilities, and demolishing facilities that can not be transferred or used effectively by supporting: (1) Complex Transformation preferred alternative footprint reduction; (2) enabling the consolidation and new construction goals of the preferred alternative by providing equal amounts of demolished gross square footage, which allows the NNSA to comply with the offset requirement with "banked" square footage to support transformation of the complex; and (3) decreasing surveillance and maintenance costs.

The Transformation Disposition (TD) Program builds on the Facilities and Infrastructure Recapitalization Program's lauded facility disposition subprogram, which benefits from knowledgeable NNSA staff versed in proven processes. The work performed in this Program will readily respond to changing missions, priorities and decisions affecting the nuclear weapons complex through implementation of its integrated, prioritized project list (IPPL) that targets the worst facilities and infrastructure deficiencies first. The TD Program will fund minor decontamination, dismantlement, removal and disposal of excess facilities that have been deactivated. The TD Program will also fund pre-transition planning activities required prior to transfer of process-contaminated facilities to the Office of Environmental Management and non-process contaminated facilities to other non-NNSA

Programs. The TD Program will fund planning activities for next-year disposition projects. The TD Program's project planning and execution follow a graded approach per the requirements of DOE Order 413.3A, "*Program and Project Management for the Acquisition of Capital Assets*".

Strategic and annual performance goals including ambitious targets and timeframes have been established for disposition of excess facilities during the period FY 2009 through FY 2017. The TD Program will effectively execute the Program and report the corresponding planned and actual performance results in the Congressional Budget Request, Program Assessment Rating Tool (PART) self-assessment and during the NNSA Administrator's Program Reviews. The TD Program partners, NNSA site managers, and M&O contractors will be essential to the achievement of the TD Program's annual performance goals. The success of the TD Program will be based on adopting FIRP processes including attributes like strong central management of the program; independent and objective oversight; and building on existing partnerships

Major FY 2007 Achievements
The new TD Program is proposed for FY 2009.

Major Outyear Priorities and Assumptions
The TD Program is established to reduce the NNSA's large inventory of excess facilities and infrastructure consistent with the FY 2008 Ten-Year Site Plans, outyear funding levels, and the Preferred Alternative for Complex Transformation for the period FY 2009-FY 2017. The program's goal includes elimination of 5,000,000 gross square feet (gsf) of excess facilities. The outyear resource projections for the TD Program total $720,000,000 (FY 2010-2017). The TD Program basis is linked to both the preferred alternative and the routine excess facility disposition that is required under DOE Order 430.1B, Real Property Asset Management as well as the inherent facility stewardship activities that require ongoing disposition of excess facilities. The corporate tools that will be used to plan and disposition this real property include, but are not limited to, the TYSPs and the facility utilization status (excess, demolished, sold, transferred, etc.) recorded in the Facilities Information Management System (FIMS).

Assumptions:

- The ability of the TD Program to meet the performance goal is dependent on receipt of full funding during the FYNSP and out-years. Annual funding below the budget request will result in TD Program scope adjustments commensurate with appropriate resources.
- A portion of the TD Program's strategic goal to eliminate 5 million square feet is dependent on NNSA reaching a negotiated agreement for the transfer of process contaminated facilities to EM.
- The Preferred Alternative ROD is issued in late FY 2008 and the disposition milestones for excess Weapon Activities Account facilities are maintained in support of Complex Transformation.
- Non-contaminated and process-contaminated excess facilities listed in the FY 2008 TYSP have provided the basis for initial TD Program scoping; the incorporation of the Preferred Alternative and Complex Transformation data will support validation of the TD Program goals.

The TD Program's implementation of its Integrated Prioritized Project List (IPPL) will enable the program to prioritize and fund outyear excess facility disposition projects that support NNSA's objectives consistent with the Stockpile Stewardship Program mission and transformation of the complex preferred alternative.

Annual Performance Results and Targets

Performance Indicators	FY 2005 Results	FY 2006 Results	FY 2007 Results	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Endpoint Target
Strategic Goal 2.1 (Infrastructure) GPRA Unit Program Goal 2.1.59.00, Transformation Disposition Program										
Footprint Reduction: Annual gross square feet (gsf) of NNSA excess facilities space funded for elimination; and cumulative percentage of FY 2009-FY 2017 total goal of five million gsf eliminated (Long-term Output)	R: N/A	R: N/A	R: N/A	R: N/A	T: 430,000 (8.6%)	T: 500,000 (18.6%)	T: 500,000 (28.6%)	T: 500,000 (38.6%)	T: 500,000 (48.6%)	By 2017, eliminate five million gsf of excess facility space.

Detailed Justification

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
Transformation Disposition	**0**	**0**	**77,391**

Transformation Disposition will provide funds to accomplish the disposition of excess facilities through demolition, sale, or transfer. This goal will be achieved through minor decontamination, dismantlement, removal, disposal, and deactivation of excess facilities. This includes facilities that are excess to current and future NNSA mission requirements, including those process contaminated structures that meet transition plan requirements and eligible for transfer to the Office of Environmental Management. The program has established a performance goal to reduce the NNSA footprint by five million gross square feet by FY 2017. Annual targets that are in place provide aggressive F&I disposition performance measures to achieve the strategic goal. Transformation Disposition activities will result in reduced Environment, Safety and Health (ES&H) costs and concerns, safeguards and security requirements, operations and maintenance costs, support the necessary footprint reduction of the complex, and improve management of the NNSA facilities portfolio.

Transformation Disposition will provide an economical approach to meeting the direction of the DOE and NNSA Strategic Plans and Congressional direction of a one-for-one offset for new construction. Transformation Disposition will evaluate disposition costs to ensure that the unit costs (i.e., dollars per square foot) compare favorably with industry norms for the disposition of similar facilities.

Total, Transformation Disposition Program	**0**	**0**	**77,391**

Explanation of Funding Changes

	FY 2009 vs. FY 2008 ($000)
Transformation Disposition	
Transformation Disposition will provide funds to accomplish the minor decontamination, dismantlement, removal, and disposal of excess facilities that have been deactivated. This includes facilities that are excess to current and future NNSA mission requirements, including those process contaminated structures eligible for transfer to the Office of Environmental Management. The program has established a performance goal to reduce the NNSA footprint by five million gross square feet by FY 2017. Annual targets provide aggressive F&I retirement performance measures to achieve the strategic goal. Transformation Disposition activities will result in reduced Environment, Safety and Health (ES&H) costs and concerns, safeguards and security requirements, operations and maintenance costs, and support transformation of the complex to a smaller footprint and improve management of the NNSA facilities portfolio. Transformation Disposition will provide an economical approach to meeting the direction of the DOE and NNSA Strategic Plans and Congressional direction of a one-for-one offset for new construction and supports overall NNSA footprint reduction efforts. Transformation Disposition will evaluate disposition costs to insure that the unit costs (i.e., dollars per square foot) compare favorably with industry norms for the disposition of similar facilities.	+77,391
Total Funding Change, Transformation Disposition Program	**+77,391**

Capital Operating Expenses and Construction Summary

Capital Operating Expenses[a]

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
General Plant Projects	0	0	0
Captial Equipment	0	0	0
Total, Capital Equipment	**0**	**0**	**0**

Outyear Capital Operating Expenses

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
General Plant Projects	0	0	0	0
Captial Equipment	0	0	0	0
Total, Capital Equipment	**0**	**0**	**0**	**0**

[a] Since funds are appropriated for Operations and Maintenance, which includes operating expenses, capital equipment and general plant projects, NNSA no longer budgets separately for capital equipment and general plant projects.

Safeguards and Security

Funding Schedule by Activity

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
Safeguards and Security (S&S)			
Defense Nuclear Security (Homeland Security)			
Operations and Maintenance	656,653	728,123	690,217
Construction	0	71,110	47,111
Subtotal, Defense Nuclear Security	**656,653**	**799,233**	**737,328**
Offset for S&S Work for Others	(33,000)	(34,000)	0
Total, Defense Nuclear Security with Offset	**623,653**	**765,233**	**737,328**
Cyber Security (Homeland Security)	**104,505**	**100,287**	**122,511**
Total, Safeguards and Security with Offset	**728,158**	**865,520**	**859,839**

Outyear Funding Schedule

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
Safeguards and Security (S&S)				
Defense Nuclear Security (Homeland Security)				
Operations and Maintenance	763,285	786,469	793,856	814,928
Construction	55,000	31,340	0	0
Subtotal, Defense Nuclear Security	**818,285**	**817,809**	**793,856**	**814,928**
Offset for S&S Work for Others	0	0	0	0
Total, Defense Nuclear Security with Offset	**818,285**	**817,809**	**793,856**	**814,928**
Cyber Security (Homeland Security)	**113,690**	**120,874**	**130,121**	**140,621**
Total, Safeguards and Security with Offset	**931,975**	**938,683**	**923,977**	**955,549**

Mission

The FY 2009-2013 budget request proposes to separate the Safeguards and Security GPRA unit which is comprised of two subprograms with separate funding controls (Defense Nuclear Security, managed by NNSA Associate Administrator for Defense Nuclear Security, and Cyber Security, managed by the NNSA Chief Information Officer), by establishing a separate GPRA unit for each subprogram. The separate GPRA units are being proposed to distinguish Defense Nuclear Security and associated funding from the Cyber Security efforts and to align with the current NNSA organizational structure.

Defense Nuclear Security

Funding Schedule by Activity

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
Defense Nuclear Security			
Operations and Maintenance (Homeland Security)			
Protective Forces	400,020	439,106	418,694
Physical Security Systems	62,802	120,873	77,245
Transportation	486	1,007	420
Information Security	27,182	21,072	25,880
Personnel Security	31,617	29,460	31,263
Materials Control and Accountability	32,146	23,978	35,929
Program Management	94,400	82,627	72,071
Technology Deployment, Physical Security	8,000	10,000	9,431
Design Basis Threat (DBT)	0	0	19,284
Total, Operations and Maintenance (Homeland Security)	**656,653**	**728,123**	**690,217**
Construction (Homeland Security)	0	71,110	47,111
Subtotal, Defense Nuclear Security	**656,653**	**799,233**	**737,328**
Offset for S&S Work for Others	-33,000	-34,000	0
Total, Defense Nuclear Security with Offset	**623,653**	**765,233**	**737,328**

Outyear Funding Schedule

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
Defense Nuclear Security				
Operations and Maintenance (Homeland Security)				
Protective Forces	446,835	455,117	463,871	474,953
Physical Security Systems	94,000	107,089	114,041	122,780
Transportation	442	437	427	1,320
Information Security	26,794	30,702	32,750	31,483
Personnel Security	32,926	33,645	34,247	35,467
Materials Control and Accountability	40,761	42,335	41,297	41,250
Program Management	89,026	82,824	90,063	95,176
Technology Deployment, Physical Security	9,534	9,065	8,539	12,499
Design Basis Threat (DBT)	22,967	25,255	8,621	0
Total, Operations and Maintenance (Homeland Security)	**763,285**	**786,469**	**793,856**	**814,928**
Construction (Homeland Security)	55,000	31,340	0	0
Subtotal, Defense Nuclear Security	**818,285**	**817,809**	**793,856**	**814,928**
Offset for S&S Work for Others	0	0	0	0
Total, Defense Nuclear Security with Offset	**818,285**	**817,809**	**793,856**	**814,928**

Description

This program will provide protection for National Nuclear Security Administration (NNSA) personnel, facilities, nuclear weapons, and information from a full spectrum of threats, most notably from terrorism, which has become of paramount concern post the September 11, 2001, attacks in the Homeland.

Physical Security 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. The Physical Security program will: continue to improve security to counter known and projected adversary threat capabilities; manage a focused program to identify and deploy improved physical security systems and equipment; work to improve the integration between personnel (protective forces) and technology capabilities; and address protective force overtime rates. Other initiatives include reducing security overhead costs and addressing life cycle equipment issues. The technology deployment endeavor will work with DOE laboratories and parallel Government efforts to deploy technologies that demonstrate promise to improve effectiveness and minimize cost growth.

During FY 2009, the DNS Program will focus on eliminating or mitigating identified vulnerabilities across the weapons complex. Measures will include additional protective force training, acquiring updated weapons and support equipment, improving physical barrier systems and standoff distances, and reducing the number of locations with "targets of interest." Physical security systems will be upgraded and deployed to enhance detection and assessment, add delay and denial capabilities, and to improve perimeter defenses at several key sites.

NNSA's activities will focus on full integration of security requirements and ensure we build security in and not have to add it on after the fact. We will focus on consolidation of Special Nuclear Material (SNM) holdings, utilization of enhanced technologies and minimization of ongoing and costly protective force personnel costs.

The FY 2009-2013 budget request proposes to separate the Safeguards and Security GPRA unit which is comprised of two subprograms with separate funding controls (Defense Nuclear Security, managed by NNSA Associate Administrator for Defense Nuclear Security, and Cyber Security, managed by the NNSA Chief Information Officer), by establishing a separate GPRA unit for each subprogram. The separate GPRA units are being proposed to distinguish Defense Nuclear Security and associated funding from the Cyber Security efforts and to align with the current NNSA organizational structure.

In FY 2009, all funding associated with safeguards and security charges for reimbursable work will be direct funded by the program offices. There is no longer an offset in the program appropriations or the Departmental Administration account.

The Defense Nuclear Security program is a Homeland Security related activity.

Beginning in FY 2009, External Independent Reviews (EIRs) of line item construction projects will be funded within the Office of Management (MA) to ensure appropriate EIR scope definition as well as to maintain the "external" and "independent" nature of EIR audits on program project performance baselines.

The Defense Nuclear Security Program makes unique contributions to Strategic Goal 02.1.57.00 by protecting DOE interests from theft, diversion, sabotage, espionage, unauthorized access, compromise, and other hostile acts which may cause unacceptable adverse impacts on national security, program continuity, the health and safety of employees, the public or the environment. Physical Security constitutes the largest funding allocation of the NNSA security effort and includes (1) Protective Forces – a site's front-line protection, consisting primarily of armed uniformed officers; (2) Physical Security Systems – provides intrusion detection and assessment barriers, access controls, tamper protection monitoring, and performance testing and maintenance of security systems; (3) Transportation – security for intra-site transfers of special nuclear material (including safe havens), weapons, and other classified material that is not funded through NNSA's Secure Transportation Asset; (4) Information Security – provides protection for the classification and declassification of information, critical infrastructure, technical surveillance countermeasures (TSCM), and operations security; (5) Personnel Security – encompasses 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 material or nuclear weapons; and (6) Materials Control and Accountability (MC&A) – provides for the control and accountability of special nuclear material. Defense Nuclear Security also includes the following construction projects: 05-D-170-01, Project Engineering and Design (PED), Nuclear Materials Safeguards and Security Upgrades (NMSSUP), Phase II, LANL and 08-D-701, Line Item, NMSSUP, Phase II, and 05-D-170-02, PED, Security Improvements Project, Y-12.

Program Assessment Rating Tool (PART)

The Department implemented a tool to evaluate selected programs. The PART was developed by the Office of Management and Budget (OMB) to provide a standardized way to assess the effectiveness of the Federal Government's portfolio of programs. The structured framework of the PART provides a means through which programs can assess their activities differently than through traditional reviews.

The current focus is to establish outcome- and output-oriented goals, the successful completion of which will lead to benefits to the public, such as increased national security and energy security, and improved environmental conditions. DOE has incorporated feedback from the OMB into the FY 2009 Budget Request, and the Department will take the necessary steps to continue to improve performance.

The OMB re-assessed the Safeguards and Security Program in FY 2006, using the PART. The results of the OMB review are reflected in the FY 2008 Budget Request. The OMB gave the Safeguards and Security (S&S) program scores of 60 percent on the Program Purpose and Design Section, 88 percent on the Strategic Planning Section, 100 percent on the Program Management Section, and 73 percent on the Program Results and Accountability Section. The OMB rated the S&S program 77 percent, its second highest category of "Moderately Effective." This represents a significant improvement over the FY 2004 OMB PART assessment of the program, which resulted in a rating of 59 percent or "Adequate." Per OMB's recommendations in FY 2004, the S&S program has improved the meaningfulness and measurability of its performance measures. The OMB was satisfied with both the program's new measures and the progress the program has made in achieving results against these new measures.

The FY 2006 OMB PART resulted in additional OMB recommendations, which the program is aggressively working to implement. They are (1) improve program design and resource allocation to make sure that post-September 11, 2001, threats are addressed as cost-effectively as possible; (2) improve contractors commitment to achieving program goals and targets; and (3) demonstrate improved efficiencies. The program is addressing these recommendations by measuring the progress in

implementing post-September 11, 2001, security upgrades that meet the 2005 Design Basis Threat; and is introducing new performance measures in the FY 2009 budget, in support of complex transformation.

Major FY 2007 Achievements

Vulnerability Assessment Peer Review Process: Defense Nuclear Security has led a year-long effort to improve the quality and consistency of the site-level vulnerability assessments. These assessments, and the resulting security strategies, provide the foundation for the physical protection of NNSA sites. Defense Nuclear Security's efforts have focused on improving the rigor and formality of the analysis process at each site, working with the sites to identify better and more cost effective security upgrades, and employing risk management in the development of the site security strategy.

2005 Design Basis Threat (DBT) Policy implementation planning: Defense Nuclear Security has made significant strides in "projectizing" the implementation activities to achieve NNSA compliance with the 2005 DBT policy. Using the lessons learned from the recently completed 2003 DBT policy, Defense Nuclear Security has adopted a project oriented approach that provides for the comprehensive management of all activities covered in the site implementation plans - including detailed cost, scope, and schedule data for each site. This effort will ensure that full compliance is achieved on schedule, and within funding targets.

Elite Forces Implementation: Defense Nuclear Security is working with the sites to identify best practices that can be applied to the site efforts to train, equip, and deploy the elite protective forces needed to protect our Category I special nuclear material and nuclear weapons sites. The Elite Force concept represents a radical change in the security strategy employed at NNSA sites - with a marked shift from defensive posture to an offensive strategy that takes the fight to the adversary. This shift will place greater emphasis on tactical training, team and individual training, and the use of heavy weapons and advanced armament.

Building security into new facilities: Defense Nuclear Security has been working to ensure that sound security principles, and inherently secure design approaches, are used in the construction of new NNSA nuclear facilities. This effort, which includes the publication of a comprehensive security design manual and the use of in-depth facility construction reviews, will significantly improve the security for new facilities while reducing the costs of securing these facilities.

Program Management: Defense Nuclear Security has made significant gains in improving the corporate management of the field security program. Budget requests from the sites are now tied to clear and understandable requirements, with greater detail and fidelity in the resource costs for sustaining the field security program, including funding and staffing needs. The budget review and validation approach has been improved, with additional emphasis given to validation of site security activities and assessment of the budget requests against efficiency and effectiveness measures. Funding needs are now tied to clear program outputs and extraneous costs and activities are being removed from the program. Budget execution is being managed through quarterly functional reporting and change control mechanisms have been incorporated into all site security operations.

Major Outyear Priorities and Assumptions

The outyear projections for Defense Nuclear Security total $3,244,878,000 for FY 2010 through FY 2013. The trend through the five-year period is level, reflecting the program’s focus on sustaining the NNSA sites 2003 Design Basis Threat baseline operations and implementing the 2005 Design Basis

Threat Policy upgrades at Pantex, Lawrence Livermore National Laboratory, Los Alamos National Laboratory, Nevada Test Site, and Y-12.

Improving the efficiency of the NNSA security operation, Defense Nuclear Security will continue its efforts to reduce the costs of protective forces across NNSA. Significant progress has been made, with over $1.8 billion in costs avoidances realized (over a 10-year period) through the use of security technology to achieve compliance with the 2003 DBT Policy. Defense Nuclear Security will redouble efforts to ensure physical improvements and technology enhancements are employed in the place of staffed security positions. Additionally, greater emphasis will also be placed on using risk acceptance methodologies to understand the relative value of additional security increases and defer investments in areas where the risk of adverse security outcomes are at acceptable levels.

Defense Nuclear Security will pursue Baseline Funding Evaluations to ensure efficient use of budgets and staffs. Using the Protective Force Comparability Study as a model, Defense Nuclear Security will review other topical areas to ensure field operations are right-sized to support security and programmatic needs.

Defense Nuclear Security will partner with Defense Programs in the complex transformation process, to ensure seamless integration with operations and the security mission.

Through a rigorous selection process, Defense Nuclear Security, in partnership with DOE and other government agencies, will pursue technology applications that improve the effectiveness of the security system while promoting the overall efficiency of our security operation.

Ongoing activities will maintain strong control and accountability of special nuclear material, increase experience and knowledge base of scarce highly-specialized technical resources, and expand efforts to implement a risk management-based approach to materials control and accountability.

The Defense Nuclear Security program is introducing new Performance Measures in the FY 2009 budget, in support of complex transformation. DNS is in the process of developing credible targets in support of the Modernization/Infrastructure Recapitalization performance measures. DNS initiated a series of site budget baseline reviews in FY 2007, and will complete a baseline review at each NNSA site during FY 2008. Pending results from the baseline reviews, the targets will be modified in the FY 2010 budget request to reflect the validated baselines

Annual Performance Results and Targets

(R = Results; T = Targets)

Performance Indicators	FY 2005 Results	FY 2006 Results	FY 2007 Results	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Endpoint Target
Strategic Goal 2.1 (Nuclear Deterrent) GPRA Unit Program Goal 2.1.57.00, Defense Nuclear Security										
Cumulative percentage of Physical Security reviews conducted by the Office of Independent Oversight and Performance Assurance (OIO) and annual security surveys conducted by Federal Site Offices at National Nuclear Security Administration sites that resulted in the rating of "Effective" (based on reviews conducted in the past 12 months). (Long-term Output)	R: 72% T: 65%	R: 64% T: 70%	R: 79% T: 75%	T: 80%	T: 85%	T: 85%	T: 85%	T: 85%	T: 85%	By FY 2009, achieve and maintain an effective rating on 85% of Physical Security reviews.
Average calendar days for NNSA Service Center to adjudicate 80% of Q Security Clearances for federal and contractor employees in the NNSA complex, other than Headquarters (does not include days for Office of Personnel Management or the Federal Bureau of Investigation to conduct background checks) (Efficiency Measure) [a]	R: 100 T: 85	R: 97 T: 110	R: 105 T: 110	T: 65	N/A	N/A	N/A	N/A	N/A	By FY 2008, reduce average number of days for Service Center to adjudicate 80% of Q Security Clearances to 65 days; 20 days is OPM Standard for FY 2009 (Baseline is 110 days in FY 2005).
Cumulative percentage of progress, measured in milestones completed, towards implementation of all Design Basis Threat (DBT) Policy at NNSA sites. (Long-term Output)	N/A	N/A	N/A	T: 100%	T: 100%	T: 50%	T: 75%	T: 100%	N/A	By FY 2009, 100 % of milestones completed for Nevada Test Site. By FY 2010, 50 % of milestones completed for Los Alamos and Y-12. By FY 2011, 75 % of milestones completed for Los Alamos and Y-12. By FY 2012, 100% of milestones completed for Los Alamos and Y-12.
Cumulative percentage of completion of progress towards modernization and infrastructure recapitalization goals. (Long-term Output)	N/A	N/A	N/A	N/A	T: 10%	T: 20%	T: 30%	T: 40%	T:50%	By FY 2013 reduce the security maintenance backlog by 50%
Cumulative percentage of completion of progress towards modernizing DNS security systems. (Long-term Output)	N/A	N/A	N/A	N/A	T: 25%	T: 50%	T:75%	T:100%	N/A	By FY 2012, complete modernization of access control, alarm, and monitoring systems.

[a] This measure is targeted for removal in FY 2009 as it does not provide an overarching measure of progress towards any DNS program strategic goal. A new more definitive efficiency measure will be developed to replace this measure.

Performance Indicators	FY 2005 Results	FY 2006 Results	FY 2007 Results	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Endpoint Target
Cumulative percentage of completion towards modernizing the National Nuclear Security Administration's protective forces IAW Tactical Response Force (TRF), as known as "Elite Forces" requirements. (Long-term Output)	N/A	N/A	N/A	N/A	T: 20%	T: 40%	T: 60%	T: 80%	T: 100%	By FY 2013 complete TRF implementation
Standardize the procurement process and security equipment, such as vehicles, weapons, and ammunition, across the National Nuclear Security Administration Defense Nuclear Security complex by 2010. (Annual Output)	N/A	N/A	N/A	N/A	T: 50%	T: 100%	N/A	N/A	N/A	By FY 2010 implement a standard procurement process for obtaining security equipment, such as vehicles, weapons, and ammunition across the DNS complex.

Detailed Justification

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
Physical Security	**656,653**	**728,123**	**690,217**
▪ **Protective Forces**	**400,020**	**439,106**	**418,694**

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, trained and practiced in various defensive tactics and procedures to protect site interests. The ongoing support will allow sites to maintain additional forces hired to meet the 2003 DBT at all sites and the 2005 DBT at the Pantex Plant. In addition to providing daily site protection, these forces function as first responders, train to manage chemical and biological events, and provide special contingency response capabilities. Funding needs are determined by Site Safeguards and Security Plans (SSSPs) supported by Vulnerability Assessments, and protection strategies designed to ensure adequate protective force staffing levels, equipment, facilities, training, management and administrative support.

▪ **Physical Security Systems**	**62,802**	**120,873**	**77,245**

Physical Security Systems provide intrusion detection and assessment capabilities, access controls, and performance testing and maintenance of security systems according to the approved site performance testing plan. Work will focus on life cycle replacement of assessment, detection and other security systems and equipment and implement new technologies to maximize cost effectiveness as we fully integrate security capital asset requirements into the NNSA site ten-year planning process.

▪ **Transportation**	**486**	**1,007**	**420**

Includes all security-related transportation for intra-site transfers of special nuclear material (including safe havens), weapons, and other classified material that is not funded in the Secure Transportation Asset account (STA).

▪ **Information Security**	**27,182**	**21,072**	**25,880**

Information Security provides protection for the classification and declassification of information, critical infrastructure, technical surveillance countermeasures (TSCM), and operations security. Through periodic reviews of classified and sensitive information, Information Security ensures proper document marking, storage and protection of information.

▪ **Personnel Security**	**31,617**	**29,460**	**31,263**

Personnel Security encompasses the processes for security clearance determinations to ensure that individuals are eligible for access to classified information or matter, and/or access to, or control over, special nuclear material or nuclear weapons. Although these security clearance processes are performed by NNSA, the Office of Health, Safety and Security manages the budget for the costs of the investigations conducted by the Federal Bureau of Investigation and the Office of Personnel Management. In addition to the Access Authorization (security clearance) Program, the Human Reliability Program, Control of Classified Visits, and Security Awareness Programs are a part of the overall Personnel Security Program budget.

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
▪ **Materials Control and Accountability**	**32,146**	**23,978**	**35,929**

Materials Control and Accountability (MC&A) provides for the control and accountability of special nuclear material and other accountable nuclear materials through measurements, quality assurance, accounting, containment, surveillance, and physical inventory. MC&A is complementary to physical protection requirements and functions as a primary deterrent against unauthorized use or diversion of special nuclear material. MC&A is also responsible for tracking movements of accountable nuclear materials between sites and reporting those movements to a national level tracking system.

▪ **Program Management**	**94,400**	**82,627**	**72,071**

Program Management provides direction, oversight and administration, planning, training, and development for security programs. Activities include the assessment of security implementation efforts through the review of updated security plans, and performance testing, review of vulnerability assessments, and revised threat and vulnerability analysis. To formalize the process, a detailed Program Management Plan, including annual performance goals and development of annual performance baselines for each site's security program, is in place.

▪ **Technology Deployment, Physical Security**	**8,000**	**10,000**	**9,431**

This effort will identify and facilitate the deployment of security technology to address both short and long-term solutions to specific physical security and MC&A needs at NNSA sites. The technology deployment effort will focus on promising, emerging technologies that will provide operational efficiencies for the NNSA security program.

Design Basis Threat (DBT)	**0**	**0**	**19,284**

Design Basis Threat (DBT) funding provides for implementation of the 2005 DBT in accordance with approved implementation plans for the Nevada Test Site and Y-12. The funding is used for upgrades associated with implementation of the 2005 DBT through the hiring and training of additional Protective Force officers, the deployment of new weapons and ammunition, and through Physical Security Upgrades. In FY 2008, activities required for implementation of the 2005 DBT requirements were included in Protective Forces, Physical Security Systems, and Program Management.

Construction	**0**	**71,110**	**47,111**

The Construction program includes the cost of new and ongoing line-item construction projects that support the safeguards and security mission within the nuclear weapons complex. Funding provided in FY 2006 sustained ongoing projects under 05-D-170, Project Engineering and Design, to continue design in FY 2007 for two subprojects: Nuclear Materials Safeguards and Security Upgrades (NMSSUP), Phase II to upgrade and replace the existing physical security system at the Los Alamos National Laboratory; and the Y-12 Security Improvements Project (SIP). Funding provided in FY 2008 included $48,550,000 for the NMSSUP Phase II project, $7,847,000 for design of the Y-12 SIP project and $14,713,000 for the Material Security and Consolidation Project, INL, transferred to NNSA. FY 2009 line item funding of $46,000,000 is requested for the NMSSUP Phase II project and $1,111,000 is requested to complete design of the Y-12 SIP project.

Total, Defense Nuclear Security	**656,653**	**799,233**	**737,328**

Explanation of Funding Changes

	FY 2009 vs. FY 2008 ($000)
Defense Nuclear Security (Physical Security)	
▪ **Protective Forces**	
This decrease partially results from a budget structure change associated with budgeting for the 2005 DBT requirements. In FY 2008, activities required for implementation of the 2005 DBT requirements were included in Protective Forces, Physical Security Systems, and Program Management. These requirements are reflected on a separate DBT line in FY 2009. Funding requested for Protective Forces provides for specialized training and sustains protective forces hired in FY 2006 in support of the 2003 DBT. Also supports Advanced Technology weapons including Remotely Operated Weapons Systems (ROWS) upgrades.	-20,412
▪ **Physical Security Systems**	
The decrease is a partial result of the significant adjustments in the FY 2008 security budget baseline and the budget structure change associated with budgeting for 2005 DBT requirements. The FY 2008 appropriation contained an increase for one-time costs needed for physical security systems upgrades and maintenance. The FY 2009 funding level reflects normalized growth.	-43,628
▪ **Transportation**	
Continues to support the movement and consolidation of special nuclear material inventories pending implementation of DBT enhancements at facilities.	-587
▪ **Information Security**	
The increase reflects implementation of a more formalized information protection program, including enhanced procedures for documentation, and centralized storage of classified and sensitive information.	+4,808
▪ **Personnel Security**	
The increase reflects the need to reduce adjudication timeliness as directed by national policy mandates and to eliminate the current 2,000 case backlog.	+1,803
▪ **Materials Control and Accountability (MC&A)**	
The increase reflects programmatic efforts in support of materials consolidation, and revised processes and procedures for process and item monitoring for more timely and accurate tracking of accountable nuclear material.	+11,951

	FY 2009 vs. FY 2008 ($000)
▪ **Program Management**	
This decrease partially results from a budget structure change associated with budgeting for the 2005 DBT requirements. In FY 2008, activities required for implementation of the 2005 DBT requirements were included in Protective Forces, Physical Security Systems, and Program Management. These requirements are reflected on a separate DBT line in FY 2009.	-10,556
▪ **Technology Deployment, Physical Security**	
Provides for continued deployment of technology to address specific physical security and MC&A needs at NNSA sites.	-569
Design Basis Threat (DBT)	
Provides for continued implementation of the 2005 Design Basis Threat at NNSA sites in accordance with approved implementation plans.	+19,284
Construction	
Supports Line Item funding for 08-D-701, the NMSSUP Phase II project ($46,000,000) and project engineering and design for 05-D-170-02, Security Improvements Project, Y-12, ($1,111,000).	-23,999
Total, Defense Nuclear Security	**-61,905**

Capital Operating Expenses and Construction Summary[a]

Capital Operating Expenses

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
General Plant Projects	49,550	51,036	52,567
Captial Equipment	6,125	6,308	6,498
Total, Capital Equipment	**55,675**	**57,344**	**59,065**

Outyear Capital Operating Expenses

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
General Plant Projects	54,144	55,768	57,441	59,164
Captial Equipment	6,893	7,100	7,313	7,532
Total, Capital Equipment	**61,037**	**62,868**	**64,754**	**66,696**

Construction Projects

(dollars in thousands)

	Total Estimated Cost (TEC)	Prior Year Appro-priations	FY 2007	FY 2008	FY 2009	Unappro-priated Balance
05-D-170, Project Engineering and Design (PED), VL	53,548	44,590	0	7,847	1,111	0
08-D-701, NMSSUP II, LANL	213,809	0	0	48,550	46,000	0
08-D-702, Material Security and Consolidation Project, INL				14,713		
Total, Construction			**0**	**71,110**	**47,111**	**0**

Outyear Construction Projects

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
08-D-701, NMSSUP II, LANL	49,000	27,165	0	0
10-D-170, PIDAS Upgrade and Enhancements, Pantex	6,000	4,175	0	0
Future Years Construction	0	0	0	0
Total, Construction	**55,000**	**31,340**	**0**	**0**

[a] Since funds are appropriated for Operations and Maintenance, which includes operating expenses, capital equipment and general plant projects, we no longer budget separately for capital equipment and general plant projects. Funding shown reflects estimates based on actual FY 2007 obligations.

08-D-701, Nuclear Materials Safeguards and Security Upgrades Project (NMSSUP) Phase II, Los Alamos National Laboratory (LANL), Los Alamos, New Mexico
Project Data Sheet is for Construction

1. Significant Changes

The most recent DOE O 413.3A approved Critical Decision (CD) is CD-1, Approve Alternative Selection and Cost Range that was approved on May 30, 2006, with a Total Project Cost (TPC) range of $224,000,000 to $240,000,000.[a]

A Federal Project Director with certification level III has been assigned to this project.

The following changes have been made to this CPDS since last submission in FY 2008.

1) The Critical Decision 2 date has slipped to the 2nd Qtr FY 2008 and the project physical construction start date of 2nd Qtr FY 2008 was slipped to 4th Qtr FY 2008, as a result of: a) a change in acquisition strategy from Design-Build to Design-Bid-Build; and b) project design changes to the perimeter configuration.

2) The proposed cost range for the NMSSUP Phase II has increased from $224,000,000-$240,000,000 to $224,000,000- $300,000,000. The increase in the cost range was validated by an Office of Engineering and construction Management External Independent Review team and is based upon a more complete design, increased material costs, and a change to the perimeter configuration. The proposed change in the perimeter configuration is an attempt to retain flexibility for future plans, pending final decisions by the Administrator. The projects baseline will be set at CD-2 and approved by the NNSA Acquisition Executive in the second quarter of FY 2008.

2. Design, Construction, and D&D Schedule

(fiscal quarter or date)

	CD-0	CD-1 (Design Start)	(Design/PED Complete)	CD-2	CD-3 (Construction Start)	CD-4 (Construction Complete)	D&D Start	D&D Complete
FY 2008	4QFY2002	2QFY2007	1QFY2008	1QFY2008	2QFY2008	3QFY2012	N/A	N/A
FY 2009	4QFY2003	1QFY2007	1QFY2008	2QFY2008	4QFY2008	4QFY2011		

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] Based upon the 90 percent engineering design, the estimated cost for construction has increased. The project is approaching the Critical Decision 2, Establish Performance Baseline, and it is expected that a Total Project Cost greater than $240,000,000 will be presented for approval.

3. Baseline and Validation Status

(dollars in thousands)

	TEC, PED	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2008			214,755	25,245	N/A		240,000
FY 2009	43,094	170,715	213,809	25,245	N/A	25,245	239,054[a]

4. Project Description, Justification, and Scope

Project Description

The project is being conducted in accordance with the project management requirements in DOE O 413.3A and DOE M 413.3-1, Program and Project Management for the Acquisition of Capital Assets, and all appropriate project management requirements have been met.

The Nuclear Materials Safeguards and Security Upgrades Project (NMSSUP) Phase II will support the viability of stockpile management and other current missions carried out in Technical Area (TA)-55 at the Los Alamos National Laboratory (LANL) by providing an effective, robust physical security system to address the 2005 Design Basis Threats (DBT), protection strategies, and security requirements.

The LANL nuclear missions, as they currently exist and as they are planned in the future, require a reliable safeguards and security system to assure the protection and control of special nuclear materials (SNM), classified matter, and NNSA property. The nuclear materials operation at TA-55 involves the ability to securely store, move, process, and track nuclear materials that are attractive to the adversaries both in terms of the quantity of materials and the forms. The NMSSUP Phase II project plays a key role in the support of this mission by replacing or improving the aging exterior physical security systems and installing enhanced systems to support a new protection strategy for the TA-55 site.

The primary components of the project include, at a minimum:

- Technical Area Isolation Zone (TAIZ)
- Perimeter Intrusion Detection, Assessment, and Delay System (PIDADS)
- East Vehicle and Pedestrian Entry Control Facility (ECF)
- West Vehicle Access (WVA)
- Airborne Mitigation System (AMS)
- Utility Infrastructure (to support the items above)

[a] Based upon the 90 percent engineering design, the estimated cost for construction has increased. The project is approaching the Critical Decision 2, Establish Performance Baseline, and a Total Project Cost greater than $240,000,000 will be presented for approval. The FY 2008 appropriated funding was reduced based on the rescission of 0.91 percent ($71,000) and use of prior year balances from construction projects ($82,000) in accordance with the FY 2008 Consolidated Appropriations Act, (P.L. 110-161).

5. Financial Schedule

(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED			
FY 2005	10,000	10,000	0
FY 2006	33,094	33,094	770
FY 2007	0	0	27,114
FY 2008	0	0	15,210
Total, PED	43,094	43,094	43,094
Construction			
FY 2008	48,550	48,550	41,597
FY 2009[a]	46,000	46,000	47,813
FY 2010[a]	49,000	49,000	50,917
FY 2011[a]	27,165	27,165	28,291
FY 2012	0	0	2,097
Total, Construction	170,715	170,715	170,715
TEC			
FY 2005	10,000	10,000	0
FY 2006	33,094	33,094	770
FY 2007	0	0	27,114
FY 2008	48,550	48,550	56,807
FY 2009	46,000	46,000	47,813
FY 2010	49,000	49,000	50,917
FY 2011	27,165	27,165	28,291
FY 2012	0	0	2,097
Total, TEC	213,809	213,809	213,809

[a] Additional funding will likely be required in these years due to acceleration of the work planned to meet the 2005 DBT by 2011. NNSA may ultimately request to reprogram between PED, construction, and OPCs within the $240.000.000 TPC.

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Other Project Cost (OPC)			
OPC except D&D			
Prior years cost	9,530	9,530	9,357
FY 2006	6,095	6,095	5,855
FY 2007	1,191	1,191	370
FY 2008	2,386	2,386	2,386
FY 2009	1,785	1,785	1,785
FY 2010	1,866	1,866	1,866
FY 2011	658	658	1,892
FY 2012	1,734	1,734	1,734
Total, OPC except D&D	25,245	25,245	25,245
D&D			
FY			
Total, D&D			
OPC			
FY			
Total, OPC			
Total Project Cost (TPC)			
Prior years cost	9,530	9,530	9,357
FY 2005	10,000	10,000	0
FY 2006	39,189	39,189	6,625
FY 2007	1,191	1,191	27,484
FY 2008	50,936	50,936	59,193
FY 2009	47,785	47,785	49,598
FY 2010	50,866	50,866	52,783
FY 2011	27,823	27,823	30,183
FY 2012	1,734	1,734	3,831
Total, TPC	239,054	239,054	239,054

6. Details of Project Cost Estimate

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED)			
Design	28,473	29,454	
Contingency	14,621	5,974	
Total, PED	43,094	35,428	
Construction			
Site Preparation	43,257	38,049	
Equipment	39,777	48,629	
Other Construction	77,486	62,778	
Contingency	10,195	29,871	
Total, Construction	170,715	179,327	
Total, TEC	213,809	214,755	
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	11,925	11,925	
Conceptual Design	3,700	3,700	
Start-Up	7,464	7,464	
Contingency	2,156	2,156	
Total, OPC except D&D	25,245	25,245	
D&D			
D&D	0	0	
Contingency	0	0	
Total, D&D	0	0	
Total, OPC	25,245	25,245	
Total, TPC	239,054	240,000	

7. Schedule of Project Costs

For schedule of project costs, see Section 5, “Financial Schedule.”

8. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	4QFY2011
Expected Useful Life (number of years)	50
Expected Future Start of D&D of this capital asset (fiscal quarter)	4QFY2062

(Related Funding requirements)

(dollars in thousands)

	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations		42,962		2,148,100
Maintenance		1,510		75,500
Total, Operations & Maintenance		44,472		2,223,600

9. Required D&D Information

The limited D&D is considered incidental to construction and has been included in the construction costs.

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

Name(s) and site location(s) of existing facility(s) to be replaced: N/A

10. Acquisition Approach

NNSA has assigned management and execution of this project to LANL. LANL had pursued a Design-Build strategy for project execution; however the bidding environment was not conducive to this approach. In order to assure best value to the government, LANL adopted a traditional design-bid-build strategy. Major contracts will be a firm-fixed price. Interfaces between the contractor(s) and other entities at LANL will be managed by a dedicated project team and minimized to facilitate clear lines of responsibilities and contractual obligations. The contracts will be incrementally funded by annual appropriations.

05-D-170, Project Engineering and Design (PED) – S&S, Various Locations
Project Data Sheet is for PED (multiple projects)

1. Significant Changes

This PDS is an update of the FY 2008 PDS.

05-01: Nuclear Materials Safeguards and Security Upgrades (NMSSUP) Phase II, LANL
The most recent DOE O 413.3A approved Critical Decision (CD) is CD-1 that was approved on May 25, 2005, with a preliminary cost range of $224,000,000 to $240,000,000. Currently, the NMSSUP project is approaching Critical Decision (CD) 2, Establish Performance Baseline, and it is expected that a Total Project Cost greater than $240,000,000 will be presented for approval.

A Federal Project Director has been assigned to this project with certification level III.

05-02, Security Improvements Project, Y-12
The most recent DOE O 413.3A approved Critical Decision (CD) is CD-1 that was approved on October 11, 2007, with a revised cost range of $62,700,000 to $95,600,000.

A Federal Project Director has been assigned to this project with certification level III.

2. Design, Construction, and D&D Schedule

(fiscal quarter or date)

	CD-0	CD-1 (Design Start)	(Design/PED Complete)	CD-2	CD-3 (Construction Start)	CD-4 (Construction Complete)	D&D Start	D&D Complete
FY 2005		2QFY2005	1QFY2007	TBD	2QFY2007	1QFY2012	N/A	N/A
FY 2006		3QFY2005	1QFY2007	TBD	2QFY2007	2QFY2011	N/A	N/A
FY 2007[a]		3QFY2006	4QFY2008	TBD	2QFY2008	3QFY2012	N/A	N/A
FY 2008		3QFY2006	2QFY2009	1QFY2008	2QFY2008	2QFY2014	N/A	N/A
FY 2009[a]		3QFY2006	2QFY2009	2QFY2008	4QFY2008	2QFY2014	N/A	N/A

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

[a] FY 2009 schedule presented reflects the NMSSUP Phase II project Preliminary Design start and the SIP Physical Construction completion. Specific critical decision milestones for the two "various locations" projects are presented on subsequent pages.

3. Baseline and Validation Status

(dollars in thousands)

TEC, PED	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC

* Note: Preliminary estimates for each subproject are presented separately below.

05-01: Nuclear Materials Safeguards and Security Upgrades (NMSSUP) Phase II, LANL

Preliminary project cost estimate is $224,000,000 to $240,000,000.

05-02: Security Improvements Project, Y-12

Preliminary project cost estimate is $62,700,000 to $95,600,000.

4. Project Description, Justification, and Scope

Project Description
This project provides for Architect-Engineering (A-E) services (Title I and Title II) for Defense Nuclear Security construction projects, allowing designated projects to proceed from conceptual design into preliminary design (Title I) and definitive design (Title II). The design effort will be sufficient to assure project feasibility, define the scope, provide detailed estimates of construction costs based on the approved design and working drawings and specifications, and provide construction schedules, including procurements. The designs will be extensive enough to establish performance baselines and to support construction or long-lead procurements in the fiscal year in which line item construction funding is requested and appropriated.

Conceptual design studies are prepared for each project using Operations and Maintenance funds prior to receiving design funding under a PED line item. These conceptual design studies define the scope of the project and produce a cost estimate and schedule.

The PED design projects are described below. While not anticipated, some changes may occur due to continuing conceptual design studies or developments occurring after submission of this data sheet. These changes will be reflected in subsequent years. Preliminary estimates for the cost of Title I and II design and engineering efforts for each subproject are provided, as well as very preliminary estimates of the Total Estimated Cost (including physical construction) of each subproject. The final Total Estimated Cost and Total Project Cost for each project described below will be validated and the Performance Baseline will be established at Critical Decision 2 following completion of preliminary design.

The project is being conducted in accordance with the project management requirements in DOE O 413.3A and DOE M 413.3-1, Program and Project Management for the Acquisition of Capital Assets, and all appropriate project management requirements have been met.

FY 2005 Design Projects

05-01: Nuclear Materials Safeguards and Security Upgrades (NMSSUP) Phase II, LANL

Fiscal Quarter				Total Estimated Cost (Design Only ($000)	Preliminary Full Total Estimated Cost Projection ($000)
A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
3Q FY 2006	1Q FY 2008	4Q FY 2008	3Q FY 2012	43,094[a]	125,000 - 240,000[b]

Fiscal Year	Appropriations	Obligations	Costs
2005	10,000	10,000	0
2006	33,094[a]	33,094	770
2007	0	0	27,114
2008	0	0	15,210

This subproject provides for design of the proposed Nuclear Materials Safeguards and Security Upgrades Project (NMSSUP) Phase II. The objective of the NMSSUP Phase II is to upgrade and replace the existing exterior perimeter, physical security intrusion, detection, assessment, and delay systems at the LANL. The upgrades and replacement are required in order to address the 2005 Design Basis Threat and Secretary of Energy mandated denial protection for the Laboratory's key nuclear facilities that house and process Category I quantities of Special Nuclear Materials. It is also the proposed site for consolidation of the nuclear missions for the laboratory, including the Chemistry and Metallurgy Research Replacement Project.

The NMSSUP Phase II project includes the upgrade or replacement of the existing exterior detection, delay, access control, and security equipment for TA-55. These systems will be integrated with the Argus security control system that has been installed under NMSSUP Phase I.

The project is being conducted in accordance with the project management requirements in DOE O 413.3A and DOE M 413.3-1, Program and Project Management for the Acquisition of Capital Assets, and all appropriate project management requirements have been met.

[a] The FY 2006 appropriated funding for this subproject of $35,000,000 was reduced by $410,000 by a rescission of one percent in accordance with the DOD Appropriations Act, 2006, P.L. 109-148. In addition, $1,496,000 was realigned to 05-02, Security Improvements Project, Y-12, for FY 2006.

[b] Currently, the NMSSUP project is approaching Critical Decision (CD) 2, Establish Performance Baseline, a Total Project Cost greater than $240,000,000 based upon the engineering design will be presented for approval.

05-02, Security Improvements Project, Y-12

Fiscal Quarter				Total Estimated Cost (Design Only ($000)	Preliminary Full Total Estimated Cost Projection ($000)
A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
1Q FY 2008	2Q FY 2009	2Q FY 2010	1Q FY 2014	$10,454	$62,700 – 95,600

Fiscal Year	Appropriations	Obligations	Costs
2005	0 [a]	0	0
2006	1,496[b]	0	0
2007	0	0	0
2008	7,847[c]	7,602	6,014
2009	1,111	2,528	3,952
2010	0	324	488

This subproject provides for preliminary and final (Title I and Title II) design for the proposed Security Improvements Project at the Y-12 National Security Complex (NSC).

The SIP scope will be reduced to a subset of that previously planned. The scope will be limited to:

- Install Argus Host System in existing CAS/SAS,
- Implement Argus for HEUMF,
- Connect balance of plant using gateways
- Argus access control limited to only HEUMF.

In addition, the project scope will procure and install the Training and Update System (TAUS) to take advantage of common maintenance and support provided for Argus implementation.

The project is being conducted in accordance with the project management requirements in DOE O 413.3A and DOE M 413.3-1, Program and Project Management for the Acquisition of Capital Assets, and all appropriate project management requirements have been met.

[a] The FY 2005 appropriated funding for this subproject of $7,000,000 was reduced by $134,000 by a rescission of 0.8 percent included in the Consolidated Appropriations Act, 2005 (P.L. 108-447). The FY 2008 Consolidated Appropriations Act (P.L. 110-161) funding adjustment included the use of prior year construction balances ($-6,866,000).

[b] The FY 2006 appropriated funding of $35,000,000 was reduced by $410,000 based on a rescission of 1 percent in accordance with the Department of Defense Appropriations Act, 2006, P.L. 109-148. In addition, $1,496,000 of obligational authority was reallocated within 05-D-170, to 05-02, Security Improvements Project, Y-12. The FY 2008 Consolidated Appropriations Act (P.L. 110-161) funding adjustment included the use of prior year construction balances ($-6,000,000)

[c] The FY 2008 appropriated funding was reduced based on the rescission of 0.91 percent ($71,000) and use of prior year balances from construction projects ($82,000) in accordance with the FY 2008 Consolidated Appropriations Act, (P.L. 110-161).

5. Financial Schedule

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED			
FY 2005	10,000	10,000	0
FY 2006	34,590	33,094	770
FY 2007	0	0	27,114
FY 2008	7,847	7,602	21,224
FY 2009	1,111	2,528	3,952
FY 2010	0	324	488
Total, PED	53,548	53,548	53,548
Construction			
FY	N/A	N/A	N/A
Total, Construction			
TEC			
FY	N/A	N/A	N/A
FY	N/A	N/A	N/A
FY	N/A	N/A	N/A
Total, TEC	53,548	53,548	53,548
Other Project Cost (OPC)			
OPC except D&D			
FY	N/A	N/A	N/A
FY	N/A	N/A	N/A
Total, OPC except D&D	N/A	N/A	N/A
D&D			
FY	N/A	N/A	N/A
Total, D&D	N/A	N/A	N/A
OPC			
FY	N/A	N/A	N/A
FY	N/A	N/A	N/A
Total, OPC	N/A	N/A	N/A
Total Project Cost (TPC)			
FY	N/A	N/A	N/A
FY	N/A	N/A	N/A
FY	N/A	N/A	N/A
Total, TPC	N/A	N/A	N/A

6. Details of Project Cost Estimate

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED)			
Design	53,548	53,701	
Contingency	0	0	
Total, PED	53,548	53,701	
Construction			
Site Preparation	0	0	
Equipment	0	0	
Other Construction	0	0	
Contingency	0	0	
Total, Construction	0	0	
Total, TEC	53,548	53,701	
Contingency, TEC	0	0	
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	0	0	
Conceptual Design	0	0	
Start-Up	0	0	
Contingency	0	0	
Total, OPC except D&D	0	0	
D&D			
D&D	0	0	
Contingency	0	0	
Total, D&D	0	0	
Total, OPC	0	0	
Contingency, OPC	0	0	
Total, TPC	53,548	53,701	
Total, Contingency	0	0	

7. Schedule of Project Costs

For schedule of project costs, see Section 5, “Financial Schedule.”

8. Related Operations and Maintenance Funding Requirements

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

(Related Funding requirements)

(dollars in thousands)

	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations		0		0
Maintenance		0		0
Total, Operations & Maintenance		0		0

9. Required D&D Information

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

Name(s) and site location(s) of existing facility(s) to be replaced: N/A

10. Acquisition Approach

Design or design build services will be obtained through competitive and/or negotiated contracts. M&O contractor staff may be utilized in areas involving security, production, and proliferation, etc. concerns.

Cyber Security

Funding Schedule by Activity

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
Cyber Security (Homeland Security)			
Infrastructure Program	60,945	66,777	87,326
Enterprise Secure Computing	24,560	19,500	33,175
Technology Application Development	2,000	2,010	2,010
Classified Diskless Workstation Operations	17,000	12,000	0
Total, Cyber Security (Homeland Security)	104,505	100,287	122,511

Outyear Funding Schedule

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
Cyber Security (Homeland Security)				
Infrastructure Program	90,150	96,314	99,521	104,971
Enterprise Secure Computing	21,500	22,500	28,500	33,500
Technology Application Development	2,040	2,060	2,100	2,150
Classified Diskless Workstation Operations	0	0	0	0
Total, Cyber Security (Homeland Security)	113,690	120,874	130,121	140,621

Description

The National Nuclear Security Administration (NNSA) Cyber Security Program provides the requisite guidance needed to ensure that sufficient information technology and information management security safeguards are implemented throughout the NNSA complex. This Cyber Security Program describes the program's compliance with the Department of Energy's (DOE) Defense-in-Depth Cyber Security strategy and the NNSA Information Management Strategic Plan.

The vision of the NNSA Cyber Security Program is to transform the NNSA security posture by making strategic investments in people, operations, and technology. The mission of the NNSA cyber security program is to ensure that sufficient information technology and information management security safeguards are implemented throughout the NNSA complex to adequately protect the NNSA information assets.

The FY 2009-2013 budget request proposes to separate the Safeguards and Security GPRA unit which is comprised of two subprograms with separate funding controls (Defense Nuclear Security, managed by NNSA Associate Administrator for Defense Nuclear Security, and Cyber Security, managed by the NNSA Chief Information Officer), by establishing a separate GPRA unit for each subprogram. The separate GPRA units are being proposed to distinguish Defense Nuclear Security and associated funding from the Cyber Security efforts and to align with the current NNSA organizational structure.

The Cyber Security Program is a Homeland Security related activity with goals, objectives, milestones, and expected outcomes to ensure NNSA information and information assets are protected.

The Cyber Security Program makes contributions to Strategic Goal 2.1.58.00. NNSA continues to maintain its Cyber Security defenses against cyber threats that are increasing in number, complexity, and sophistication while supporting the application of advanced information technologies to the NNSA

national security and other missions. NNSA sites continue to improve the scope and quality of cyber security programs through implementation of NNSA cyber security guidance and by addressing the increasing number of requirements issued by OMB.

The NNSA Cyber Security program implements a flexible, comprehensive, and risk-based cyber security program that (a) adequately protects the NNSA information and information assets; (b) is predicated on Executive Orders; national standards; laws and regulations; and Departmental (where appropriate) and NNSA orders, manuals, directives, and guidance; and (c) results in a policy-driven cyber security architecture; aligned with the NNSA enterprise architecture; a programmatic framework and methodology that is based on current policies and procedures; and a management approach that integrates all of the components of a comprehensive cyber security program; ensures alignment of the program with the NNSA and Departmental strategic plans and relevant plans of the Offices of the CIO; and supports the NNSA mission.

As part of the revitalization, NNSA senior officials scrutinized its governance methodologies, compliance and business models, and daily operations of cyber security professionals and determined that profound, strategic changes were warranted in an effort to be an industry leader in protecting national security information. Further, NNSA began the initial implementation of a *site assessment visit* process that requires a team of cyber security professionals to visit NNSA sites and evaluate the site's compliance with the site-specific Cyber Security Program Plan, or CSPP, in both their documentation and implementation of controls. During these assessment visits, a plan of action and milestones is completed as required.

Program Assessment Rating Tool (PART)

The Department implemented a tool to evaluate selected programs. The PART was developed by the Office of Management and Budget (OMB) to provide a standardized way to assess the effectiveness of the Federal Government's portfolio of programs. The structured framework of the PART provides a means through which programs can assess their activities differently than through traditional reviews.

In the past, the Cyber Security Program was assessed as an integral element of the Safeguards and Security program; thus, providing it with an opportunity to be evaluated within the larger program to meet its PART requirements.

The current focus is to establish outcome- and output-oriented goals, the successful completion of which will lead to benefits to the public, such as increased national security and energy security, and improved environmental conditions. The Cyber Security program will participate in an OMB PART review during FY 2008, will incorporate feedback from the OMB into the FY 2010 Budget Request, and will take the necessary action to continue to improve performance.

Historically Black Colleges and Universities (HBCU) Support

A research and education partnership program with the HBCU's and the Massie Chairs of Excellence was initiated by the Congress through earmarks in the Office of the Administrator appropriation in FY 2005 and FY 2006. NNSA has established an effective program to target national security research opportunities for these institutions to increase their participation in national security-related research and to train and recruit HBCU graduates for employment within NNSA. The NNSA's goal is a stable work program funded at $10 million annually.

Major FY 2007 Achievements
During FY 2007 the NNSA Cyber Security Program worked to move more than two-thirds of the Department's classified computer workstations to a diskless architecture.

The Cyber Security Infrastructure Program provided for improvements in the areas of Defense-in-Depth Cyber Security Strategy and the NNSA Information Management Strategic Plan; and provided for current certification and accreditation packages improvements across the complex resulting in an official Authority to Operate, signed by the Designated Approval Authority.

In FY 2007, NNSA underwent a major revitalization of its cyber security program with policies published via a suite of documents: (1) The program baseline, or Program Cyber Security Plan (PCSP) (i.e., NNSA Policy NAP 14.1C); (2) NNSA Certification and Accreditation Process (i.e., NNSA Policy NAP 14.2C); and (3) Transmission of Secret Restricted Data on SIPRNET (i.e., NNSA Policy NAP 14.3B). In addition, NNSA has published the Risk Assessment Methodology and the NNSA Threat Statement to facilitate more of a "consistent" approach to quantifying threats and residual risks throughout the nuclear weapons complex.

Major Outyear Priorities and Assumptions
The outyear projections for Cyber Security total $505,306,000 for FY 2010 through FY 2013. The trend through the five-year period shows an escalated increase for cyber activities.

With the increased prioritization of cyber security within NNSA, the program is working to develop a more robust set of performance metrics to better align the budget requirements to anticipated and demonstrated NNSA Cyber Security Program performance outcomes.

To provide improved correlation between current NNSA cyber security program efforts and future revitalization plans, the Cyber Security Program will focus on a broad set of areas that link directly to its budget requirements, and then use specific areas to establish performance metrics and begin implementation in FY 2009.

The Cyber Security program will sustain the NNSA infrastructure and upgrade elements that will counter cyber threats from external and internal attacks using the latest available technologies.

Cyber security revitalization will continue to become increasingly critical to NNSA's ability to respond to highest priorities and to address current and future risks.

Certification and Accreditation (Classified and Unclassified) will allow NNSA to properly document risks and justification of associated operations for many systems at NNSA sites.

The Department's effort to convert its classified computer workstations to a diskless architecture will be complete by September 30, 2008, and no additional specific funding for this effort is required in FY 2009 and beyond. Ongoing maintenance and operations of the diskless classified workstations will remain with the Department's classified program offices.

The Enterprise Secure Network (ESN) will be fully operational by the 3rd Quarter of FY 2008. Further capability enhancements to the network necessary to meet emerging mission requirements will be funded within the outyear target.

Annual Performance Results and Targets

(R = Results; T = Targets)

Performance Indicators	FY 2005 Results	FY 2006 Results	FY 2007 Results	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Endpoint Target
Strategic Goal 2.1 (Nuclear Deterrent) GPRA Unit Program Goal 2.1.58.00, Cyber Security										
Annual average percentage of Cyber Security reviews conducted by the Office of Health, Safety, and Security (HSS) at NNSA sites that resulted in the rating of "effective" (based on the last HSS review at each site over 2 Cyber Security topical areas). (Long-term Outcome)	R: 57% T: 80%	R : 41% T: 57%	R : 57% T: 57%	T: 100%	T: 100%	T: 100%	T: 100%	T : 100%	T : 100%	Annually, achieve an effective rating of at least 100% of OA Cyber Security reviews.
Cumulative percentage of Cyber Security Site Assessment Visits (SAV) conducted by the Office of the Chief Information Officer (OCIO) Cyber Security Program Manager (CSPM) at NNSA sites that resulted in the rating of "effective". (Long-term Output)	N/A	N/A	N/A	T: 100%	T: 100%	T: 100%	T: 100%	T: 100%	T: 100%	Annually, achieve an effective rating of 100% of OCIO SAV.
Annual number of NNSA information assets reviewed for certification and accreditation. (Efficiency)	N/A	N/A	N/A	T: 30	T: 35	T: 40	T: 45	T: 55	T: 65	By FY 2013, increase the number of assets reviewed per year.

Detailed Justification

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
▪ **Infrastructure Program**	**60,945**	**66,777**	**87,326**

The infrastructure program supports the management, operational, administrative, and technical controls that are the primary means of protecting and defending NNSA information and information assets. The goals are to (1) Reduce the risk of loss, unauthorized disclosure, or unauthorized modification of information and information systems; (2) Develop an adaptable security policy and guidance framework that results in defense-in-depth based on emerging threats and mission need; (3) Increase cyber security protection of legacy systems; (4) Maintain and continuously improve the NNSA cyber security architecture; and (5) Drive the use of Information Assurance enabled products, where appropriate. The critical factor in ensuring adequate protection for all data and assets is the responsive development, updating and implementation of policies, procedures and guidelines to address the latest changes in technologies while defending against the latest threats and vulnerabilities. It is equally important to ensure that those policies, procedures and guidelines provide for sufficient flexibility to allow their adaptation to the diverse mission across NNSA. Cyber security policies, procedures, guidelines, and performance metrics define the requirements to effectively achieve completion of the NNSA cyber security mission.

▪ **Enterprise Secure Computing**	**24,560**	**19,500**	**33,175**

Enterprise Secure Computing provides enterprise level classified computing infrastructure for the NNSA complex. Focus of activities is on completing and bringing Phase I of the Enterprise Secure Network (ESN) online during the first half of FY 2008 and transitioning the effort to fully managed operations. Components of Phase I of the ESN will include: the ESN Test and Certification Laboratory for the security evaluation and testing of enterprise classified components in an isolated, non-production, controlled environment; two-factor strong authentication to ensure consistent and compliant authentication of classified network asset users across NNSA sites; and secure trusted "single sign-on" for weapons programs scientists and engineers to support the data and application access across NNSA sites as necessary to support the weapons program.

▪ **Technology Application Cyber Security**	**2,000**	**2,010**	**2,010**

Research and Technology Development will address both short and long-term solutions to specific cyber security needs at NNSA sites. The research and technology development efforts will focus on emerging technologies that will provide cost-effective improvements to the NNSA Cyber Security program. In FY 2009, additional specific technologies will be identified for further research and technology development in the areas of intrusion prevention and defense-in-depth capabilities.

▪ **Classified Diskless Workstation Operations**	**17,000**	**12,000**	**0**

Activities to transition the Department's classified workstation computing to diskless-at-the-workstation operations will be completed by September 30, 2008. FY 2008 funding will be allocated across the Department, at Federal and contractor facilities, to support extraordinary infrastructure and conversion activities that cannot be supported within currently planned program and site funding levels. No additional funding is requested in FY 2009 and the outyears for this activity.

Total, Cyber Security	**104,505**	**100,287**	**122,511**

Explanation of Funding Changes

	FY 2009 vs. FY 2008 ($000)
▪ **Cyber Security (Homeland Security)**	
Infrastructure Program: This increase supports infrastructure at NNSA landlord sites for the implementation of the Department's revitalization plan, unclassified system certification and accreditation processes (Continuous Asset Monitoring System, CAMS).	+20,549
Enterprise Security Computing: The increase supports full year operations of the Enterprise Secure Network, including required security improvements (+$4,675,000); development and implementation of an enterprise-wide need-to-know policy and application engine (+4,000,000); and development and implementation of data gateway to allow non-weapons classified data to be transmitted across the ESN (+5,000,000).	+13,675
Technology Application Development: No change.	0
Classified Diskless Workstation Operations: The Department's effort to complete the conversion of its classified workstations to a diskless architecture will be completed by September 30, 2008, and no additional funding for this effort is required in FY 2009.	-12,000
Total, Cyber Security	**+22,224**

Capital Operating Expenses and Construction Summary[a]

Capital Operating Expenses

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
General Plant Projects	9,674	9,965	10,264
Captial Equipment	388	400	411
Total, Capital Equipment	**10,062**	**10,365**	**10,675**

Outyear Capital Operating Expenses

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
General Plant Projects	10,572	10,889	11,215	11,551
Captial Equipment	423	436	449	462
Total, Capital Equipment	**10,995**	**11,325**	**11,664**	**12,013**

[a] Since funds are appropriated for Operations and Maintenance, which includes operating expenses, capital equipment and general plant projects, we no longer budget separately for capital equipment and general plant projects. Funding shown reflects estimates based on projected FY 2007 obligations.

Congressional Directed Projects

Funding by Subprogram

	FY 2007 *(non-add)*	FY 2008 with Rescission	FY 2009
Congressionally Directed Projects	[9,200]	47,232	0

Description

The FY 2008 Consolidated Appropriations Act (P.L. 110-161) included 14 congressionally directed projects within the Weapons Activities appropriation. Funding for these projects was appropriated as a separate funding line although specific projects may relate to ongoing work in a specific programmatic area. Prior year funding for a specific project will be noted in the table below as a non-additive column entry.

Detailed Justification

(dollars in thousands)

	FY 2007 *(non-add)*	FY 2008 with Rescission	FY 2009
Congressionally Directed Projects			
• Advanced Engineering Environment at Sandia Laboratory (CA, MA)		1,478	-
• Atomic Testing Musuem in Las Vegas, NV, for Operations and Maintenance (NV) Supports continued operation of the Atomic Testing History Institute, which produces historical information released to the public and related NGO organizations.	[500]	591	-
• Cimtrak Cyber Security (IN)		985	-
• Interagency Advanced Computing Research, Equipment and Facilities at Nextedge Technology Park (OH) Enables the construction of a classified work space at the Nextedge facility which Lexis-Nexis will install a classified computing system (including software) to support its intelligence and Homeland Security customers in determining activities valued to the nation.	[3,100]	3,940	-
• Kansas City Plant Multi-Disciplined Integrated Collaboration (MO)		985	-
• Laboratory for Advanced Laser-Target Interactions (OH) Provides funding to Ohio State University to expand its small-scale laser user facility.	[1,000]	1,970	-
• National Museum of Nuclear Science and History in Albuquerque, NM, for the Musuem Site (NM)		739	-
• Nevada Test Site for Operations and Infrastructure Improvements (NV)		17,730	-
• North Dakota State University (Fargo) to support computing Capability (ND)		7,880	-
• Northwest Indiana Computational Grid at Notre Dame and Purdue Calumet Universities (IN) Funding enables the building of the Northwest Indiana computational Grid network and provide Northwest Indiana with a high speed connection to ANL and several European research institutions including the CERN particle physics Laboratory.	[2,500]	5,910	-
• Secure Wireless Devices and Sensors (IN)		246	-

(dollars in thousands)

	FY 2007 *(non-add)*	FY 2008 with Rescission	FY 2009
• Technical Product Data Initiative (OH)		985	-
• University of Nevada-Las Vegas for In-Situ Nanomechanics (NV)		345	-
• University of Texas in Austin, Texas, to Complete the Construction of the Petawatt Laser (TX) Supports construction of the Petawatt Laser at University of Texas at Austin, which is near completion.	[2,100]	3,448	-
Total, Congressionally Directed Projects	**[9,200]**	**47,232**	**0**

Explanation of Funding Changes

	FY 2009 vs. FY 2008 ($000)
Congressionally Directed Projects	
Decrease results from no follow-on funding being requested for these projects.	-47,232
Total, Congressionally Directed Projects	**-47,232**

Defense Nuclear Nonproliferation

Defense Nuclear Nonproliferation

Table of Contents

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 atomic energy defense, defense nuclear nonproliferation activities, in carrying out the purposes of the Department of Energy Organization Act (42 U.S.C. 7101 et seq.), including the acquisition or condemnation of any real property or any facility or for plant or facility acquisition, construction, or expansion, [$1,673,275,000]*$1,247,048,000,* to remain available until expended[: *Provided,* That $50,000,000 of such funds shall be available until expended for the contribution of the United States to create a low-enriched uranium stockpile for an International Nuclear Fuel Bank supply of nuclear fuel for peaceful means under the International Atomic Energy Agency: *Provided further,* That $25,000,000 is authorized to be appropriated for Project 06-D-180 National Security Laboratory at the Pacific Northwest National Laboratory, Richland, Washington: *Provided further*, That of the funds made available under this heading in appropriations Acts for fiscal year 2007 and prior fiscal years for Project 99-D-143 Mixed Oxide (MOX) Fuel Fabrication Facility, Savannah River Site, South Carolina, $115,000,000 are rescinded: *Provided further*, That of the funds made available under this heading in appropriation Acts for fiscal year 2007 and prior fiscal years for Russian Surplus Fissile Materials Disposition, $57,000,000 are rescinded: *Provided further,* That of the funds made available in the first paragraph under the heading "Atomic Energy Defense Activities –Other Defense Activities" in chapter 2 of title I of division B of Public Law 105-277 and subsequently transferred by the Department of Energy to the Defense Nuclear Nonproliferation program , $150,000,000 are rescinded]. *(Energy and Water Development and Related Agencies Appropriations Act, 2008.)*

Explanation of Change

The FY 2009 Request decrease is largely due to the acceleration of Research and Development efforts and the completion of significant Materials Protection and Cooperation security upgrades in FY 2008. The budget for the Mixed Oxide Fuel Fabrication Facility, the Pit Disassembly and Conversion Facility, and the Waste Solidification Building is transferred to other accounts starting in FY 2008.

Defense Nuclear Nonproliferation

Funding Profile by Subprogram

(dollars in thousands)

	FY 2007 Current Appropriation	FY 2008 Original Appropriation	FY 2008 Adjustments	FY 2008 Current Appropriation	FY 2009 Request
Defense Nuclear Nonproliferation					
Nonproliferation and Verification Research and Development	265,197	390,752	-3,556	387,196	275,091
Nonproliferation and International Security	128,911	151,370	-1,377	149,993	140,467
International Nuclear Materials Protection and Cooperation	597,646	630,217	-5,735	624,482	429,694
Elimination of Weapons-Grade Plutonium Production	231,152	181,593	-1,653	179,940	141,299
Fissile Materials Disposition	470,062	66,843	-608	66,235	41,774
Global Threat Reduction Initiative	131,234	195,000	-1,775	193,225	219,641
International Nuclear Fuel Bank	0	50,000	-455	49,545	0
Congressional Directed Projects	0	7,500	-120	7,380	0
Subtotal, Defense Nuclear Nonproliferation	**1,824,202**	**1,673,275**	**-15,279**	**1,657,996**	**1,247,966**
Use of Prior Year Balances	0	0	0	0	-918
Total, Defense Nuclear Nonproliferation	**1,824,202**	**1,673,275**	**-15,279**	**1,657,996**	**1,247,048**
Rescission of Prior Year Balances	0	-322,000	0	-322,000	0
Total, Defense Nuclear Nonproliferation (OMB Scoring)	**1,824,202**	**1,351,275**	**-15,279**	**1,335,996**	**1,247,048**

NOTES: The FY 2007 Current Appropriation column includes additions for international contributions to the Elimination of Weapons-Grade Plutonium Production Program in the amount of $5,397,964; to the International Nuclear Materials Protection and Cooperation Program in the amount of $4,916,044 and to the Global Threat Reduction Initiative Program in the amount of $1,738,800. FY 2008 Adjustments reflect a rescission of $15,279,000 as cited in the FY 2008 Consolidated Appropriations Act (P.L. 110-161).

Public Law Authorization:

FY 2008 Consolidated Appropriations Act (P.L. 110-161)
National Nuclear Security Administration Act, (P.L. 106-65), as amended

Outyear Funding Profile by Subprogram

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
Defense Nuclear Nonproliferation				
Nonproliferation and Verification Research and Development	318,620	334,182	343,397	351,098
Nonproliferation and International Security	151,052	158,711	171,108	175,368
International Nuclear Materials Protection and Cooperation	400,511	394,626	395,225	404,064
Elimination of Weapons Grade Plutonium Production	24,507	0	0	0
Fissile Materials Disposition	37,691	27,985	28,435	26,000
Global Threat Reduction Initiative	150,299	161,074	173,172	177,452
Total, Defense Nuclear Nonproliferation	**1,082,680**	**1,076,578**	**1,111,337**	**1,133,982**

Major Outyear Priorities and Assumptions

The Defense Nuclear Nonproliferation budget for FY 2009-2013 supports the completion of the Elimination of Weapons Grade Plutonium Production Program in the Russian Federation by FY 2011. The decrease from FY 2009 funding is due to the ramp-down for completion of the Seversk Project which is partially offset by an increase in construction activities for the Zheleznogorsk Project. The scheduled completion of the latter project by FY 2011 will result in a significant decrease in the EWGPP line over the five year period. The budget also shows a decrease due to the completion of the Kazakhstan Spent Fuel work in CY 2010 under the Global Threat Reduction Initiative Program. In addition, funding in the International Nuclear Materials Protection and Cooperation program will decrease from current levels with the completion of work in Russia securing a total of 73 warhead sites and approximately 215 buildings containing weapons-usable nuclear material by the end of 2008. The program will install radiation detection equipment at approximately 450 border sites and in approximately 75 Megaports by the end of 2014. These decreases are offset by increases for work to continue significant advancement in the prevention and detection of illicit transfer of nuclear material through shipping ports and significant reduction of risk of terrorists acquiring radiological materials. Finally, the Office of Nonproliferation and International Security funding reflects the expansion of the Next Generation Safeguards Initiative launched in FY 2008, which will strengthen global safeguards institutions, in particular the International Atomic Energy Agency (IAEA), and revitalize the U.S. safeguards technology and human capital base.

DOE Nuclear Nonproliferation Activities

($ in Millions)

	FY 2007 Actual	FY 2008 Actual	FY 2009 Request	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
NNSA							
Defense Nuclear Nonproliferation	1,824.2	1,658.0	1,247.0	1,082.7	1,076.6	1,111.3	1,134.0
Pit Disassembly and Conversion	——[1]	68.7	119.0	243.1	323.1	317.4	319.9
Subtotal, NNSA	1,824.2	1,726.7	1,366.0	1,325.8	1,399.7	1,428.7	1,453.9
Nuclear Energy							
Mixed Oxide Fuel Fabrication Facility	——[1]	278.8[2]	487.0	450.7[3]	395.8[3]	482.2[3]	519.5[3]
Total, DOE Funding	**1,824.2**	**2,005.5**	**1,853.0**	**1,776.5**	**1,795.5**	**1,910.9**	**1,973.4**

[1] Funding included in NNSA/Defense Nuclear Nonproliferation.

[2] Does not include $115M in prior year balances moved with the Mixed Oxide Fuel Fabrication Facility in FY 2008.

[3]Out year amounts for the Mixed Oxide Fuel Fabrication Facility reflect the Total Project Cost estimates in the current Project Data Sheet.

The FY 2008 Consolidated Appropriations Act (P.L. 110-161), moved the funding for the MOX project from the NNSA Defense Nuclear Nonproliferation to DOE's Office of Nuclear Energy and funding for the PDCF/Waste Solidification Building projects to Defense Programs. These shifts do not change or diminish in any way the importance of these projects to the nation's nuclear nonproliferation efforts, and in total, the funding commitment to DOE's nonproliferation activities is $1.853 billion in FY 2009. The budget describes a shift in emphasis from work completed under the Bratislava agreement to additional Second Line of Defense sites, including Megaports, and continued expansion of nuclear and radiological material removal under the Global Threat Reduction Initiative.

Mission

The convergence of heightened terrorist activities and the ease of moving materials, technology and information across borders have made the potential for terrorism involving weapons of mass destruction (WMD) the most serious threat facing the Nation. Preventing WMD from falling into the hands of terrorists is the top national security priority of this Administration. The FY 2009 budget request for Defense Nuclear Nonproliferation reflects the need to protect the United States (U.S.) and its allies from this threat.

The Defense Nuclear Nonproliferation mission is to provide policy and technical leadership to limit or prevent the spread of materials, technology, and expertise relating to weapons of mass destruction; advance the technologies to detect the proliferation of weapons of mass destruction worldwide; and eliminate or secure inventories of surplus materials and infrastructure usable for nuclear weapons -- in short, to detect, secure, or dispose of dangerous nuclear material.

From FY 2005 to FY 2008, the cost of conducting External Independent Reviews (EIRs) for Capital Asset Projects greater than $5,000,000 within the Nonproliferation and Verification Research and Development, and Elimination of Weapons Grade Plutonium are funded within these programs. Examples of EIRs include conducting Performance Baseline EIRs prior to Critical Decision-2 (CD-2) to verify the accuracy of costs and schedule baseline estimates and conducting Construction/Execution Readiness EIRs, which are done for all Major System projects prior to CD-3. These funds, which are managed by the Office of Engineering and Construction Management, are exclusively used for EIRs

directly related to these projects funded within these programs. Beginning in FY 2009, the EIRs will be funded within the Office of Management to ensure appropriate EIR scope definition as well as to maintain the "external" and "independent" nature of EIR audits on Program project performance baselines.

Benefits

The Defense Nuclear Nonproliferation program supports the NNSA and DOE mission to protect our national security by preventing the spread of nuclear weapons and nuclear materials to terrorist organizations and rogue states. These efforts are implemented in part through the Global Partnership against the Spread of Weapons and Materials of Mass Destruction, formed at the G8 Kananaskis Summit in June 2002, and the Global Initiative to Combat Nuclear Terrorism, launched in Rabat Morocco in October 2006.

Funding for a proportional share of NNSA's annual assessment required to pay for Defense Contract Audit Agency activities is included in this appropriation. The amount estimated for Defense Nuclear Nonproliferation is $363,000 for FY 2008 and FY 2009, to be paid from program funding.

Strategic and GPRA Unit Program Goals

The Department's Strategic Plan identifies five Strategic Themes (one each for nuclear, energy, science, management, and environmental aspects of the mission) plus 16 Strategic Goals that tie to the Strategic Themes. The Defense Nuclear Nonproliferation appropriation supports the following goal:

Strategic Theme 2, Nuclear Security: Ensuring America's Nuclear Security.

Strategic Goal 2.2, Weapons of Mass Destruction: Prevent the acquisition of nuclear and radiological materials for use in weapons of mass destruction and other acts of terrorism. The Defense Nonproliferation program has 6 GPRA Unit Program Goals which contribute to Strategic Goal 2.2 in the "goal cascade".

Contribution to GPRA Unit Program Goal 2.2.39.00, Nonproliferation and Verification Research and Development

The Nonproliferation and Verification Research and Development program contributes to this goal by reducing the threat to national security posed by nuclear weapons proliferation/detonation or the illicit trafficking of nuclear materials through the long-term development of new and novel technology to detect illicit nuclear materials and programs.

Contribution to GPRA Unit Program Goal 2.2.40.00, Elimination of Weapons-Grade Plutonium Production

The Elimination of Weapons-Grade Plutonium Production Program contributes to Strategic Goal 2.2 by enabling the Russian Federation to cease permanently production of weapons-grade plutonium by replacing plutonium production nuclear reactors with fossil-fuel power plants to provide alternative sources of heat and electricity and allow for the shutdown of the reactors.

Contribution to GPRA Unit Program Goal 2.2.41.00, Nonproliferation and International Security

The Nonproliferation and International Security program contributes to this goal by preventing and countering Weapons of Mass Destruction (WMD) proliferation by providing policy and technical support to implement and monitor transparent WMD reductions; supporting international safeguards technology and human capital development; strengthening export controls systems in other countries;

transitioning WMD expertise and infrastructure to peaceful purposes; and improving international and multinational interdiction regimes.

Contribution to GPRA Unit Program Goal 2.2.42.00, International Nuclear Materials Protection and Cooperation

The International Nuclear Materials Protection and Cooperation program contributes to Strategic Goal 2.2 by working in Russia and other regions of concern to (1) secure and eliminate vulnerable nuclear weapons and weapons-usable material; and (2) install detection equipment at border crossings and Megaports to prevent and detect the illicit transfer of nuclear material.

Contribution to GPRA Unit Program Goal 2.2.43.00, Fissile Materials Disposition

The Fissile Materials Disposition program contributes to Strategic Goal 2.2 by eliminating surplus U.S. highly enriched uranium (HEU).

Contribution to GPRA Unit Program Goal 2.2.44.00, Global Threat Reduction Initiative

The Global Threat Reduction Initiative (GTRI) contributes to Strategic Goal 2.2 by reducing and protecting vulnerable nuclear and radiological materials located at civilian sites worldwide.

Funding by Strategic and GPRA Unit Program Goal

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
Strategic Goal 2.2, Defense Nuclear Nonproliferation			
GPRA Unit Program Goal 2.2.39.00			
Nonproliferation and Verification Research and Development	265,197	387,196	275,091
GPRA Unit Program Goal 2.2.40.00			
Elimination of Weapons Grade Plutonium Production	231,152	179,940	141,299
GPRA Unit Program Goal 2.2.41.00			
Nonproliferation and International Security	128,911	149,993	140,467
GPRA Unit Program Goal 2.2.42.00			
International Nuclear Materials Protection and Cooperation	597,646	624,482	429,694
GPRA Unit Program Goal 2.2.43.00			
Fissile Materials Disposition	470,062	66,235	41,774
GPRA Unit Program Goal 2.2.44.00			
Global Threat Reduction Initiative	131,234	193,225	219,641
Subtotal, Strategic Goal 2.2, Defense Nuclear Nonproliferation	**1,824,202**	**1,601,071**	**1,247,966**
International Fuel Bank Program	0	49,545	0
Congressionally Directed Projects	0	7,380	0
Use of Prior Year Balances	0	0	-918
Total, Strategic Goal 2.2, Defense Nuclear Nonproliferation	**1,824,202**	**1,657,996**	**1,247,048**

NOTES: The FY 2007 Current Appropriation column includes additions for international contributions to the Elimination of Weapons-Grade Plutonium Production Program in the amount of $5,397,964; to the International Nuclear Materials Protection and Cooperation Program in the amount of $4,916,044 and to the Global Threat Reduction Initiative Program in the amount of $1,738,800. FY 2008 Adjustments reflect a rescission of $15,279,000 as cited in the FY 2008 Consolidated Appropriations Act (P.L. 110-161).

Outyear Funding by Strategic and GPRA Unit Program Goal

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
Strategic Goal 2.2, Defense Nuclear Nonproliferation				
GPRA Unit Program Goal 2.2.39.00				
Nonproliferation and Verification Research and Development	318,620	334,182	343,397	351,098
GPRA Unit Program Goal 2.2.40.00				
Elimination of Weapons Grade Plutonium Production	24,507	0	0	0
GPRA Unit Program Goal 2.2.41.00				
Nonproliferation and International Security	151,052	158,711	171,108	175,368
GPRA Unit Program Goal 2.2.42.00				
International Nuclear Materials Protection and Cooperation	400,511	394,626	395,225	404,064
GPRA Unit Program Goal 2.2.43.00				
Fissile Materials Disposition	37,691	27,985	28,435	26,000
GPRA Unit Program Goal 2.2.44.00				
Global Threat Reduction Initiative	150,299	161,074	173,172	177,452
Total, Strategic Goal 2.2, Defense Nuclear Nonproliferation	**1,082,680**	**1,076,578**	**1,111,337**	**1,133,982**

Means and Strategies

The Defense Nuclear Nonproliferation program will use various means and strategies to achieve its program goals, including numerous collaborative activities with a variety of partners. However, various external factors may impact our ability to achieve these goals on schedule.

The Defense Nuclear Nonproliferation program goal is to detect, secure, and dispose of dangerous nuclear material. Our programs address the danger that hostile nations or terrorist groups may acquire weapons of mass destruction or weapons-usable material, dual-use production or technology, or WMD capabilities, by strengthening international safeguards and securing or eliminating vulnerable stockpiles of weapon-usable materials, technology, and expertise in Russia and other countries of concern.

The 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. We will fully exploit the world-class expertise of our National Laboratories to increase our design, testing, and fielding capabilities for safeguards, detection, and verification technologies.

The pace and nature of treaties and agreements, extremely poor economic conditions in many host countries, political and economic uncertainties in the former Soviet Union, and the unwillingness of threshold states to engage in negotiations can all have dramatic effects on the pace of program implementation and effectiveness.

The Department will implement the following strategies:

Interfaces, Partnerships and Working Relationships: NNSA partners with many U.S. agencies, international organizations, and non-governmental organizations to further our nonproliferation goals. All major policy issues are coordinated with the National Security Council, and we also work closely with the Departments of State, Defense, Homeland Security, Justice**,** Treasury, and Commerce. We

continually leverage our considerable nuclear nonproliferation research and development base within the National Laboratory complex to achieve program goals. In addition, NNSA coordinates with the Department of State and Nuclear Regulatory Commission on selected aspects of the fissile materials disposition program, and works with the IAEA to further international safeguards. The United States Enrichment Corporation (USEC), the Tennessee Valley Authority (TVA), BWX Technologies, and Nuclear Fuel Services have been or are involved in the surplus U.S. Highly Enriched Uranium (HEU) disposition program and USEC is also involved in the Russian HEU purchase agreement. The U.S. Industry Coalition is NNSA's partner in the Global Initiative for Proliferation Prevention. The U.S. Agency for International Development, the Nuclear Energy Agency, the Intelligence Community, and other agencies are also involved in some programs. Finally, we anticipate continued frequent collaborations with the Department of Homeland Security, including providing technical assistance and training for domestic interdiction and export control cases, as that department fulfills its role in the national security arena.

Securing Nuclear Weapons, Material and Expertise: For over a decade, the U.S. has been working cooperatively with the Russian Federation to enhance the security of facilities containing fissile material and nuclear weapons. The scope of these efforts has been expanded to protect weapons-usable material in countries outside the former Soviet Union as well. These programs fund critical activities such as installation of intrusion detection and alarm systems, and construction of fences around nuclear sites. Efforts to complete this work and to secure facilities against the possibility of theft or diversion have been accelerated. DOE has also established the Global Initiatives for Proliferation Prevention Program (GIPP), which is the only program in the U.S. Government that works to transition FSU WMD weapons scientists, engineers and related technical experts to commercial, non-weapons-related activities.

Security upgrades were completed for Russian Navy nuclear fuel and weapons storage at the end of FY 2006 and will be complete for Rosatom facilities by the end of 2008--both two years ahead of the original schedule. Security upgrades to the nuclear warhead storage sites of the Russian Strategic Rocket Forces will be complete by the end of 2007 and to the Russian Ministry of Defense's 12th Main Directorate nuclear warhead storage sites by the end of 2008.

Revitalizing International Safeguards: With the increasing number, size, and complexity of nuclear facilities deployed worldwide, the widespread entry into force of IAEA Additional Protocols, and the emergence of new proliferation threats from both state and sub-state terrorist actors, the current workload of the IAEA far exceeds its resources. At the same time, the current generation of safeguards technologies is becoming outdated and the safeguards "human capital" base is aging and shrinking. As nuclear energy continues to expand, opportunities for proliferation will multiply and the gap between IAEA needs and resources will grow wider.

In FY 2008, NNSA launched the Next Generation Safeguards Initiative focused on revitalizing the U.S. safeguards technology and human capital base to ensure that the IAEA has the authorities, capabilities, technologies, expertise, and resources it needs to meet current and future challenges. In particular, NNSA will seek to coordinate and implement a dedicated program focused on developing advanced safeguards approaches, technologies, and equipment that will cultivate a new generation of specialists with expertise in a broad range of safeguards-relevant disciplines.

Global Nuclear Energy Partnership: On February 6, 2006, Secretary Bodman announced a new, comprehensive strategy to promote the global expansion of nuclear energy. This strategy, the Global

Nuclear Energy Partnership (GNEP), will focus on developing new nuclear fuel cycle technologies that reduce waste and improve efficiency, enhancing safeguards and security to reduce proliferation risks, and developing international arrangements for reliable supply and management of nuclear fuel. While GNEP is a long-term vision for the future of international nuclear power, the Department has begun to re-orient its activities to promote GNEP goals. In FY 2008, NNSA used ongoing activities in the areas of safeguards technology development, international safeguards cooperation, and fuel supply arrangements to begin to support the policy aims embodied in GNEP.

Verifying Nuclear Programs in Countries of Proliferation Concern: The Nuclear Noncompliance Verification (NNV) program develops advanced technology applications to verify declared nuclear activities, detect undeclared nuclear materials and activities, and carry out dismantlement and verification of nuclear programs in countries of proliferation concern. The program also provided technical and operational support for U.S. Government policies and activities related to countries of proliferation concern. In FY 2009, the program will develop and deliver three new verification technologies or methods and will support continued U.S. and international efforts related to the dismantlement and verification of proliferant-state nuclear programs.

Countering Illicit Supplier Networks: DOE has a long history of providing the technical input to the interagency in the various interdiction activities conducted by the U.S. Government. However, in light of the escalation in these activities catalyzed by the uncovering of A. Q. Khan's clandestine nuclear supply network, and the continued efforts by North Korea and Iran to pursue WMD technologies, the Nonproliferation and International Security program has developed a comprehensive capability to extract *actionable* information dealing with proliferation networks, technology transfers and involvement of entities and persons of interest in proliferation and terrorism.

In addition, the program provides real-time technical and policy support for efforts by the U.S. Government in a timely manner to facilitate a wide range of counter proliferation and counterterrorism interdiction options. The backbone of this capability is comprised of various customized electronic database applications that exploit information and provide rapid, real-time technical support to the interagency on illicit transfers of proliferation-sensitive technology and commodities; technology assessments in the DOE complex and U.S. industry; updates on proliferation network off-shoots; support to the new IAEA role investigating proliferation networks; and evaluation of the impact of proliferation networks on global safeguards and export controls systems.

Pre-Screening Cargo Containers for Nuclear and Radiological Materials: The world's shipping network, with millions of cargo containers in various stages of transit, could conceal nuclear and radiological materials. However, the busiest seaports also provide the opportunity for law enforcement officials to pre-screen the bulk of the cargo in the world trade system. Under the Megaports Initiative, DOE cooperates with international partners to deploy and equip key ports with the technical means to detect and deter illicit trafficking in nuclear and other radioactive materials.

This effort supports the U.S. Department of Homeland Security's Container Security Initiative. The FY 2009 budget supports the completion of seven additional ports, which will increase to thirty, the number of ports participating in and equipped through the Megaports Initiative.

NNSA Support to Presidential Initiative for Radiation Detection Research and Development: Nonproliferation R&D's Detection Program continues to provide basic and applied research in advanced

materials for radiation detection sensors, special nuclear material movement, uranium enrichment detection, and plutonium reprocessing/production detection. This multi-use technology was designed to support the nonproliferation mission, but also supports fundamental research critical for Defense, Homeland Security and the Intelligence Community.

Eliminating Russian Plutonium Production: The Elimination of Weapons Grade Plutonium Production Program will result in the permanent shutdown of three nuclear reactors, which currently produce weapons-grade plutonium. These reactors, which are the last three reactors in Russia that produce plutonium for military purposes, also provide necessary heat and electricity to two "closed cities" in the nuclear weapons complex.

This budget provides the funding needed to shutdown the three reactors through; 1) refurbishment of an existing fossil-fuel (coal) power plant in Seversk by 2008; and 2) construction of a new fossil-fuel plant at Zheleznogorsk by 2011. This will eliminate the production of 1.2MT annually of weapons-grade plutonium. The program is of high effectiveness because plutonium that is never created does not have to be accounted for, does not need to be secured, and will never be available to be used by terrorists.

Disposing of Surplus U.S. and Russian Weapon-Grade Fissile Material: The Fissile Materials Disposition program disposes of inventories of surplus U.S. weapon-grade HEU and supports efforts to dispose of Russian surplus weapon-grade plutonium. The FY 2009 budget request supports continuing efforts to dispose of surplus U.S. HEU including the Reliable Fuel Supply Program, and supports other Fissile Materials Disposition program activities. Prior year balances will be used to support Russian implementation of its technically and financially credible program for disposition of weapon-grade plutonium based on the use of existing and planned Fast Reactors. These activities are of critical importance because they will ensure that surplus fissile materials in the U.S. and Russia are permanently disposed. A complementary fissile material reduction program, the HEU Transparency Program, continues to confirm the permanent elimination of HEU from the Russian weapons stockpile by monitoring the conversion of 30MT of HEU to LEU annually. The program has eliminated over 300MT of HEU from dismantled Russian nuclear weapons of the 500MT planned by the end of the HEU Purchase Agreement in 2013.

Joint Action Plan for Cooperation on Security Upgrades of Russian Facilities: An agreement on Nuclear Security Cooperation was reached between the Presidents of the United States (U.S.) and the Russian Federation during their February 2005 Bratislava Summit. This agreement includes for the first time a comprehensive joint action plan for the cooperation on security upgrades of Russian nuclear facilities at Rosatom and Ministry of Defense sites and cooperation in the areas of nuclear regulatory development, sustainability, secure transportation, Materials Protection Control and Accounting (MPC&A) expertise training and protective force equipment.

Preventing a Possible Terrorist Attack Using Civilian ***Nuclear or Radiological Materials:*** The GTRI mission is to reduce and protect vulnerable nuclear and radiological materials located at civilian sites worldwide. GTRI helps the Department achieve its Nuclear Security Goal 2.2 to prevent the acquisition of nuclear and radiological materials for use in weapons of mass destruction (WMD) and other acts of terrorism by: 1) converting research reactors from the use of WMD-usable highly enriched uranium (HEU) fuel to low enriched uranium (LEU); 2) removing or disposing of excess WMD-usable nuclear and radiological materials; and 3) protecting at-risk WMD-usable nuclear and radiological materials from theft and sabotage until a more permanent threat reduction solution can be implemented.

GTRI is a vital part of the President's March 2006 *National Security Strategy of the United States of America* to protect the American people and the President's July 2006 *Global Initiative to Combat Nuclear Terroris*m, as it reduces the risk of terrorists acquiring vulnerable nuclear and radiological materials.

Global Partnership: The Global Partnership Against the Spread of Weapons and Materials of Mass Destruction, formed at the G-8 Kananaskis Summit in June 2002 has recommitted the G-8 nations (the U.S., Canada, France, Germany, Italy, Japan, Russia, and the United Kingdom) to address nonproliferation, disarmament, counter-terrorism, and nuclear safety issues. The G-8 leaders have pledged to devote up to $20 billion over ten years to support cooperative efforts, initially in Russia, and have invited other similarly motivated countries to participate in this partnership. The President has committed the U.S. to provide $10 billion over ten years to be matched by $10 billion from the other members, attesting to the belief that nonproliferation concerns are of the highest government priority; and therefore that this program's work is of paramount importance for the security of the nation and the world. The following table reflects the Department of Energy activities, by country and program.

Three agencies fund the $1 billion per year U.S. commitment to Global Partnership. The Department of Energy and Department of Defense carry the majority of this responsibility with the Department of State contributing a smaller portion. In FY 2006 through 2009, DOE will have contributed more than than 50 percent of the required interagency funding for Global Partnership. The OMB monitors the coordination of the three agencies' contributions ensuring that the overall U.S. commitment is met.

DOE Nonproliferation and Threat Reduction Assistance to Former Soviet States

($ in millions)

Summary by Country	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Russia	584.9	430.3	269.9	233.1	216.4	225.2
Kyrgyzstan	2.0	0	0	0	0	0
Kazakhstan	52.7	35.4	12.8	3.2	3.7	2.7
Ukraine	5.3	12.8	7.4	10.1	4.8	5.3
Uzbekistan	1.0	0	0	0	0	0
Azerbaijan	7.9	2.6	1.3	1.3	1.3	1.0
Georgia	10.3	0.5	0.5	0.5	0	0
Tajikistan	0	0	0	2.8	0	0
Turkmenistan	0	4.0	2.4	2.4	.2	.2
Total, NN Contribution	**664.1**	**485.6**	**294.3**	**253.4**	**226.4**	**234.4**

Validation and Verification

To verify and validate program performance, NNSA conducts various internal and external reviews and audits. NNSA's programmatic activities are subject to continuing review by the Congress, the General Accountability Office, the Department's Inspector General, the National Security Council, the Defense Nuclear Facilities Safety Board, the Department's Office of Engineering and Construction Management, and the Department's Office of Independent Oversight and Performance Assurance. Each year numerous external independent reviews are conducted of selected projects. Additionally, NNSA

Headquarters senior management and Field managers conduct frequent, in-depth reviews of cost, schedule, and scope to ensure projects are on-track and within budget.

NNSA has established a comprehensive validation and verification process as part of its Planning, Programming, Budgeting and Evaluation (PPBE) system. Long-term performance goals are established/validated during the Planning Phase and linked in a performance cascade to annual targets and detailed technical milestones. During the Programming Phase, budget and resources trade-offs and decisions are evaluated based on the impact to annual and long-term performance measures. These NNSA decisions are documented and used to develop the budget requests during the Budgeting Phase. Program and financial performance for each measure are monitored and progress verified during the Execution and Evaluation Phase.

NNSA validation and verification activities during the PPBE Execution and Evaluation phase include a set of tiered performance reviews to examine everything from detailed technical progress to program management controls to corporate performance against long-term goals. This set of reviews includes: (1) the Office of Management and Budget's (OMB) Program Assessment Rating Tool (PART); (2) Budget Formulation Validation; (3) the Independent Assessment process: (4) NNSA Administrator Program Reviews; (5) Program Manager Detailed Technical Reviews; (6) the NNSA Mid-Year Finance and Performance Review; (7) quarterly reporting of progress through the Department's JOULE performance tracking system; (8) Program Management Self Assessment (PMSA) reporting; and (9) the NNSA Administrator's Annual Performance Report.

NNSA is using the OMB PART process to perform annual internal self-assessments of the management strengths and weaknesses of each NNSA program. Among other things, the PART process helps NNSA ensure that quality, clarity, and completeness of its performance data and results are in accordance with standards set in the Government Performance and Results Act of 1993 and reinforced by the President's Management Agenda. Independent PART assessments conducted by OMB provide additional recommendations to strengthen NNSA programs.

The NNSA Administrator reviews each NNSA program at least annually during the NNSA Administrator Reviews. These reviews involve all members of the NNSA Management Council to ensure progress and that recommendations are fully integrated for corporate improvement. The focus of these reviews is to verify and validate that NNSA programs are on track to meet their long-term goals and annual targets. The program managers conduct a second more detailed review of each program. These Program Manager Detailed Technical Reviews are normally held at least quarterly during the year. The focus of these reviews is to verify and validate that NNSA contractors are achieving detailed technical milestones that result in progress towards annual targets and long-term goals. These two reviews work together to ensure that advance warnings are given to NNSA managers in order for corrective actions to be implemented. NNSA sites are responsible and accountable for accomplishing the verification and validation of their own and their sub-contractors' performance data and results prior to submission to NNSA Headquarters.

The results of all of these reviews are reported quarterly in the Department's performance tracking system (Joule) and annually in the NNSA Administrator's Annual Performance Report and the DOE Performance and Accountability Report (PAR). Both documents help to measures the progress NNSA programs are making toward achieving annual targets and long-term goals. These documents are at a

summary level to help senior managers verify and validate progress towards NNSA and Departmental commitments listed in the budget.

The NNSA performs validations of approximately 20 percent of its budget on an annual basis. A three-Phase process was developed to validate the FY 2009 Budget Formulation process and estimate. This process consists of Phase I: Validation of the Need for the Program's Proposed Activities (Program Review), Phase II: Pricing Validation of Selected Programs (Pricing Review). Budget validation efforts focuses on determining consistency with NNSA strategic planning and program guidance, integration of planned activities/milestones with budget estimates, and reasonableness of budget estimates. During the FY 2009 process, the International Nuclear Materials Protection and Cooperation program participated in both Phase I and II. The review found the overall process for developing the budgets for the FY 2009 satisfactory and the cost estimates were determined to be valid and reasonable.

In addition, the General Accountability Office, Inspector General, National Security Council, Foster Panel, Defense Nuclear Facility Safety Board, and Secretary of Energy Advisory Board provide independent reviews of NNSA programs.

Program Assessment Rating Tool (PART)

The Department implemented a tool to evaluate selected programs. The PART was developed by the Office of Management and Budget (OMB) to provide a standardized way to assess the effectiveness of the Federal Government's portfolio of programs. The structured framework of the PART provides a means through which programs can assess their activities differently than through traditional reviews. The PART process links seamlessly with NNSA's PPBE concept, and we have initiated PART "self-assessments" for all NNSA programs as a prominent aspect of the annual program review cycle. The NNSA has incorporated feedback from OMB into the FY 2009 Budget Request and will take the necessary steps to continue to improve performance.

Results of PART assessments in prior years are summarized in the table below:

FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
International Nuclear Materials Protection and Cooperation (INMP&C) – *Effective*	Elimination of Weapons Grade Plutonium Production (EWGPP) (new program) – *Results Not Demonstrated (reassessed in FY 2007 as Effective)*	Nonproliferation and International Security (NIS) – *Effective*	Nonproliferation and Verification Research and Development (R&D) – *Moderately Effective*	Global Threat Reduction Initiative (GTRI) – *Effective*	International Nuclear Materials Protection and Cooperation (INMP&C) - *Effective*
			Global Initiatives for Proliferation Prevention (GIPP) – *Effective*	Fissile Materials Disposition (FMD) – *Moderately Effective*	

Major FY 2007 Achievements

Nonproliferation and Verification R&D

- Improved the fundamental understanding of advanced materials with possible radiation detection applications.

- Demonstrated measurement of Plutonium growth in a reactor using an anti-neutrino detector.

- Successfully launched the Cibola Flight Experiment (CFE) satellite – demonstrator for novel radio-frequency signature collection and next-generation nuclear detection payloads.

- Completed several multi-agency tests to characterize, validate, and integrate advanced remote sensing instrumentation for detection of nuclear and other weapons of mass destruction proliferation activities.

- Sustained and improved the Nation's operational Nuclear Detonation Detection (NDD) system by:
- Delivering operational space-based nuclear detonation detection sensors to the Air Force on time to support Air Force launch schedules – thus sustaining the nation's capability to monitor and report nuclear detonations that occur on or above the Earth's surface.

- Providing updated calibration, geophysical models, and discrimination algorithms to improve the monitoring performance of regional seismic stations, and delivering the radionuclide Deployable Analysis System, improving the nation's capability to monitor and report underground nuclear detonations in specific threat regions of the globe.

- Completing development and testing of the next generation space-based optical explosion monitor sensor, delivered to the Air Force in early FY 2007 for launch on a future Air Force satellite. This enhanced sensor has greater sensitivity and will improve the nation's monitoring capability for very small atmospheric nuclear explosions and is now the baseline for all future optical payloads.

Nonproliferation & International Security (FY 2007)

- Completed a comprehensive assessment of international safeguards objectives, authorities, capabilities, technologies, and human and financial resource issues that will serve as the basis for new initiatives to strengthen the IAEA and revitalize the U.S. safeguards technology and human capital base.

- Developed and delivered several new technologies, systems, and methods to verify declared nuclear activities and detect undeclared nuclear materials and activities, including technologies that will strengthen the overall effectiveness and efficiency of IAEA safeguards.

- Provided technical and policy support to the U.S. delegation to the Six Party Talks on the complete, verifiable, and irreversible dismantlement of North Korea's nuclear program.

- Trained over 2,000 technical, enforcement and industry officials in over 30 countries on export license risk analysis and WMD commodity recognition methods needed to prevent illicit transfers of items listed by the multilateral WMD export control regimes.

- Expanded efforts to provide technical assistance and training on effective nuclear infrastructure preparation to countries interested in pursuing nuclear power, including new partnerships with Vietnam and Algeria.

- Engaged over 5,600 scientists, engineers and related technical experts at institutes across the FSU, Libya, and Iraq, creating over 500 sustainable civilian jobs. Since 1994, this program has engaged and/or redirected 16,000 individuals at over 180 institutes, creating over 5,000 sustainable civilian jobs.

- As part of the HEU Transparency program, down-blended 30 MTs of HEU from dismantled Russian nuclear weapons. As of the end of FY 2007, the program has monitored the cumulative conversion of 315 MT of weapons-usable HEU. This represents the equivalent of 12,600 nuclear weapons permanently eliminated, per IAEA defined standards.

- Jointly reviewed over 2,000 foreign WMD/missile procurements for sanctionable activity, conducted 7,000 export control reviews for proliferation concerns, and provided technical support for 100 domestic interdiction investigations. Additionally, since 2003, over 5,600 U.S. export and import enforcement officials have been trained to identify proliferation sensitive technologies.

- Provided IAEA physical protection training for over 280 foreign nuclear security officials from 37 countries.

International Nuclear Materials Protection & Cooperation

- Completed Materials Protection Control and Accounting (MPC&A) upgrades to 14 Strategic Rocket Forces sites.

- Secured a cumulative total of 193 buildings in Russia containing weapons usable material.

- United States and Russian adopted a joint sustainability plan with Rosatom outlining specific requirements (e.g., regulatory, training, maintenance, inspections) to ensure the long-term viability of nuclear security.

- Completed installations of radiation detection equipment to detect the illicit trafficking of nuclear and other radiological materials at a cumulative total of 150 strategic transit/ bordering crossings, air and sea transshipment hubs in Russia and other countries and at a cumulative total of 12 Megaports.

Elimination of Weapons-Grade Plutonium Production

- The Seversk Plutonium Production Elimination Project, ground-breaking ceremony for refurbishing an existing fossil-fuel facility occurred in April 2005. As of the end of FY 2007, the project achieved 72% completion. Currently the project is on schedule for completion in December 2008, thus eliminating 800 kilograms per year of weapons-grade plutonium production, and affecting the shutdown of two of the three remaining production reactors.

- In 2007 the Zheleznogorsk Plutonium Production Elimination Project achieved 34 percent completion and awarded over 80 percent of its equipment procurements. The project is currently

expected to meet its December 2010 completion date on cost and schedule. The completion will provide district heat to allow shutdown of the Zheleznogorsk reactor and eliminate the final portion of plutonium production of about 400kg per year.

Fissile Materials Disposition

- Began construction of the U.S. MOX Fuel Fabrication Facility in August 2007. Funding for this project is included in the Office of Nuclear Energy budget starting in FY 2008.

- Completed approximately 65% of the design for the Pit Disassembly and Conversion Facility (PDCF) and developed the statement of work to begin the process to hire a construction manager for the PDCF. Funding for this project is included in the NNSA Office of Defense Programs budget starting in FY 2008.

- Completed approximately 60% of the design for the Waste Solidification Building (WSB), which had been suspended in 2004 due to uncertainties surrounding the plutonium disposition program and was resumed in September 2006. Funding for this project is included in the NNSA Office of Defense Programs budget starting in FY 2008.

- Down-blended a cumulative total of 101 MT of surplus U.S. HEU for peaceful use as nuclear reactor fuel, and awarded a contract to downblend 17.4 MT of HEU to create the Reliable Fuel Supply.

- Developed a financially and technically credible program for disposition of 34 MT of Russia's surplus weapon-grade plutonium, recorded in a Joint Statement by Secretary Bodman and Rosatom Director Kiryenko. The program will rely on Russia's existing and planned fast reactors with disposition scheduled to begin in the 2012 timeframe.

Global Threat Reduction Initiative (GTRI)

- Converted an additional 9 HEU reactors to LEU increasing the total handled by the program to 55, inclusive of 4 research reactors that have been shutdown without conversion to LEU.

- Removed or disposed of an additional 425 kilograms of nuclear material (HEU and plutonium) increasing the program total to 1,791 kilograms, enough for over 65 crude nuclear weapons.

- Removed or disposed of an additional 1,622 radiological sources increasing the program total to 15,500 sources removed, containing over 190,000 curies, enough for over 1,485 radiological dirty bombs.

- Protected an additional 100 high priority radiological sites, increasing the program total to 600 sites containing 8 million curies, enough for over 8,000 radiological dirty bombs.

Historically Black Colleges and Universities (HBCU) Support

A research and education partnership program with the HBCU's and the Massie Chairs of Excellence was initiated by the Congress through earmarks in the Office of the Administrator appropriation in FY 2005 and FY 2006. NNSA has established an effective program to target national security research opportunities for these institutions to increase their participation in national security-related research and to train and recruit HBCU graduates for employment within NNSA. The NNSA's goal is a stable

$10 million effort annually. The majority of the efforts directly support program activities, and it is expected that programs funded by the Defense Nuclear Nonproliferation appropriation will fund research with the HBCU's totaling approximately $2 - $3 million in FY 2009, in areas including engineering, radiochemistry, material sciences and sensor development.

Nonproliferation and Verification Research and Development

Funding Schedule by Activity

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
Nonproliferation and Verification R&D			
Operations and Maintenance (O&M)			
Proliferation Detection	148,863	224,445	145,419
Homeland Security-Related Proliferation Detection [Non-Add]	[48,708]	[50,000]	[50,000]
Nuclear Detonation Detection	105,389	132,484	116,525
Supporting Activities	3,025	5,495	0
Subtotal, O&M	**257,277**	**362,424**	**261,944**
Construction	7,920	24,772	13,147
Total, Nonproliferation and Verification R&D	**265,197**	**387,196**	**275,091**

Outyear Funding Schedule

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
Nonproliferation and Verification R&D				
Operations and Maintenance (O&M)				
Proliferation Detection (PD)	192,099	204,670	212,987	217,562
Homeland Security-Related Proliferation Detection [Non-Add]	[50,000]	[50,000]	[50,000]	[50,000]
Nuclear Detonation Detection	122,896	127,823	130,410	133,536
Supporting Activities	0	0	0	0
Subtotal, O&M	**314,995**	**332,493**	**343,397**	**351,098**
Construction	3,625	1,689	0	0
Total, Nonproliferation and Verification R&D	**318,620**	**334,182**	**343,397**	**351,098**

Description

This program reduces the threat to national security posed by nuclear weapons proliferation/detonation or the illicit trafficking of nuclear materials through the long-term development of new and novel technology.

Using the unique facilities and scientific skills of NNSA and DOE national laboratories and plants, in partnership with industry and academia, the program conducts research and development that supports nonproliferation mission requirements necessary to close technology gaps identified through close interaction with NNSA and other U.S government agencies and programs. This program meets unique challenges and plays an important role in the federal government by driving basic science discoveries and developing new technologies applicable to nonproliferation, homeland security, and national security needs.

The Nonproliferation and Verification Research and Development program has two subprograms that make unique contributions to GPRA Unit Program Goal 2.2.39.00.

The Proliferation Detection subprogram advances basic and applied technologies for the nonproliferation community. Specifically, the subprogram develops the tools, technologies, techniques,

and expertise for the identification, location, and analysis of the facilities, materials, and processes of undeclared and proliferant nuclear weapons programs and to prevent the diversion of special nuclear materials, including use by terrorists.

The Nuclear Detonation Detection subprogram builds the nation's operational sensors that monitor the entire planet from space to detect and report surface, atmospheric, or space nuclear detonations; and produces and updates the regional geophysical datasets enabling operation of the nation's ground-based seismic monitoring networks to detect and report underground detonations. This subprogram also conducts research and development on nuclear detonation forensics, improvements in satellite operational systems to meet future requirements and size/weight constraints, and radionuclide sampling techniques for detection of worldwide nuclear detonations.

In addition, the R&D program supports a joint effort between the DOE Office of Science (SC) and the Department of Homeland Security (DHS) to construct approximately 200,000 gross square feet of laboratories, offices, and facilities, known as the Physical Sciences Facility (PSF), on the Horn Rapids Triangle at Pacific Northwest National Laboratory. In addition, life extension upgrades to Building 325 in the Hanford 300 Area will be included as part of the second phase of the project. This effort will replace and extend existing research capabilities being displaced as a result of the closure and cleanup of the Hanford 300 Area. Contractors for the Department's Office of Environmental Management (EM) must complete remediation objectives in the 300 Area by 2015.

Major Outyear Priorities and Assumptions

The FY 2010 – FY 2013 outyear projections for the Nonproliferation and Verification Research and Development (R&D) Program total $1,347,297,000 and support long-term research and development leading to detection systems for strengthening U.S. capabilities to respond to current and projected threats to national and homeland security posed by the proliferation of nuclear weapons and diversion of special nuclear material. Almost a third of this funding is for production of operational nuclear detonation detection sensors to support the nation's operational nuclear detonation detection and reporting infrastructure through joint programs with the Air Force. Outyear increases to the program reflect a combination of inflation plus increased national emphasis shown in National Security Presidential Decisions (NSPD) and Homeland Security Presidential Decisions (HSPD) for basic and applied research and development for advanced radiation detection, special nuclear materials detection, and detection of national and sub-national nuclear weapons programs.

Program Assessment Rating Tool (PART)

The Department implemented a tool to evaluate selected programs. The PART was developed by the Office of Management and Budget (OMB) to provide a standardized way to assess the effectiveness of the Federal Government's portfolio of programs. The structured framework of the PART provides a means through which programs can assess their activities differently than through traditional reviews. The Nonproliferation and Verification R&D program has incorporated feedback from the OMB into the FY 2009 Budget Request, and has taken or will take the necessary steps to continue to improve performance.

The FY 2007 Budget Request reflects the results of the OMB review. OMB gave the Nonproliferation and Verification R&D program high scores of 100 percent on the Program Purpose and Design Section, 90 percent on the Strategic Planning and the Program Management Sections, and 60 percent on the Program Results Section. OMB's overall PART rating for the Nonproliferation and Verification R&D program is 77 percent, its second highest category of "Moderately Effective." The OMB assessment

found that the program has a clear and unique purpose, and has an excellent track record in delivering nonproliferation products and services on schedule and in accordance with customer requirements. In addition, OMB pointed out that the program's performance measures are new, so there had been limited time for achieving these new measures. OMB suggested that the program should continue to strengthen its prioritization process to guide budget requests. In response to the OMB findings and subsequent program self-assessments, the NNSA developed work plans to prioritize processes and guide funding decisions. These work plans include prioritizations based on NNSA business operating procedures, NNSA programmatic needs, availability of funds, and national security initiatives, all cascading up to the President's Management Agenda. The following "Annual Performance Results and Targets" table shows that the program has revised its metrics toward more measurable key outcomes, as preferred by the PART process.

Annual Performance Results and Targets

(R= Results; T = Targets)

Performance Indicators	FY 2005 Results	FY 2006 Results	FY 2007 Results	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Endpoint Target
Program Goal 2.2 (Weapons of Mass Destruction) GPRA Unit Program 2.2.39.00 (Nonproliferation and Verification R&D)										
Cumulative percentage of progress toward demonstrating the next generation of technologies and methods to detect Uranium-235 Production activities. (Progress is measured against the baseline criteria and milestones published in the "FY 2006 R&D Requirements Document") (Long-term Outcome)	R: 3% T: 3%	R: 10% T: 10%	R: 15% T: 15%	T: 20%	T: 25%	T: 30%	T: 50%	T: 60%	T: 75%	By 2016, demonstrate the next generation of technologies and methods to detect Uranium-235 Production activities.
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") (Long-term Outcome)	R: 3% T: 3%	R: 10% T: 10%	R: 20% T: 20%	T: 25%	T: 30%	T: 50%	T: 65%	T: 75%	T: 90%	By 2015, demonstrate the next generation of technologies and methods to detect Plutonium Production activities.
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") (Long-term Outcome)	R: 5% T: 5%	R: 10% T: 10%	R: 20% T: 20%	T: 27%	T: 33%	T: 60%	T: 80%	T: 90%	T: 100%	By 2013, demonstrate the next generation of technologies and methods to detect Special Nuclear Material movement.
Annual index that summarizes the status of all NNSA detonation detection R&D deliveries that improve the nation's ability to detect nuclear detonations (Annual Output)	R: 90% T: 90%	R: 90% T: 90%	R: 90% T: 90%	T: 90%	T: 90%	T: 90%	T: 90%	T: 90%	T: 90%	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 Indicators	FY 2005 Results	FY 2006 Results	FY 2007 Results	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Endpoint Target
Cumulative percentage of active research projects for which an independent R&D merit review of the project's scientific quality and mission relevance has been completed during the second year of effort (and again within each subsequent three year period for those projects found to be of merit) (Efficiency)	R: 100% T: 70%	R: 100% T: 100%	R: 100% T: 100%	T: 100%	T: 100%	T: 100%	T: 100%	T:100%	T: 100%	By 2006, ensure that 100% of the active research projects have completed an independent R&D peer assessment of the project's scientific quality and mission relevance within 2-3 year cycle.
Annual number of articles published in merit reviewed professional journals/ forums representing leadership in advancing science and technology knowledge (Annual Output)	R: 283 T: 200	R: 200 T: 200	R: 220 T: 200	T: 200	T: 200	T: 200	T: 200	T: 200	T: 200	Annually, achieve goal of 200 articles published in merit reviewed professional journals/forums representing leadership in advancing science and technology knowledge.

Detailed Justification

(dollars in thousands)

FY 2007	FY 2008	FY 2009

Nonproliferation and Verification R&D O&M

- **Proliferation Detection** **148,863** **224,445** **145, 419**

  The Proliferation Detection (PD) program provides technical expertise and leadership toward the development of next-generation nuclear detection technologies and methods to detect foreign nuclear materials and weapons production. The PD program develops the tools, technologies, and techniques used to detect, locate, and analyze the global proliferation of nuclear weapons technology with special emphasis on technology to detect the illicit diversion of special nuclear materials.

  Additionally, the PD program provides developed and validated technical know-how to U.S. Government acquisition programs and the U.S. industrial base to support national security missions. Technical advances, new proven methodologies, and improvements to capabilities are transferred to operational programs through technical partnerships including the development of special prototypes to assist major acquisition efforts. Partnerships with the industrial suppliers are often coordinated with user programs to facilitate successful outcomes. The PD program fosters long-term scientific innovation through sustained commitment to mission-focused technical areas that build "best-in-the-world" competence. In FY 2007, included $1.6 million for the Nuclear Security Science and Policy Institute at Texas A&M and $0.5 million for the National Center for Bio Defense at George Mason University.

- **Homeland Security-Related Proliferation Detection**
  [Non-Add] **[48,708]** **[50,000]** **[50,000]**

  The PD program applies the unique skills and capabilities of researchers at the NNSA and DOE national laboratories and plants to support non-proliferation research and development requirements. The PD program also conducts fundamental research in fields such as radiation detection and materials science, which also support the Department of Homeland Security (DHS) and the greater national security community. The PD program collaborates with academia and federal research programs to develop real-world system solutions based on classified insights into national security issues.

- **Nuclear Detonation Detection** **105,389** **132,484** **116,525**

  The Nuclear Detonation Detection (NDD) program builds the Nation's operational treaty monitoring and Integrated Tactical Warning/Threat Assessment space sensors, conducts research and development 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 treaty monitoring networks.

  The satellite-based segment of the program builds the Global Burst Detector (GBD) and Space and Atmospheric Burst Reporting System (SABRS) payloads for detecting and reporting nuclear detonations. These payloads are launched on Global Positioning System (GPS) and missile warning replenishment satellites. In addition to building the payloads, the program supports the integration, initialization, and operation of these payloads. The NDD program supports the

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009

engineering, research and development efforts to prepare next generation sensors. For FY 2009, production and delivery of GBD and SABRS payloads will continue at a pace to support timely Air Force launch of host satellites

The ground-based segment of the NDD research program provides classified, focused, applied, and integrated research products, with appropriate testing, demonstration, and technical support for use in the U.S. National Data Center and U.S. Atomic Energy Detection System. Through a Memorandum of Understanding (MOU) with U.S. monitoring agencies, NNSA provides the integrated geophysical models and nuclear event source models that enable global, regional, and specific site threat detection, reporting, and interpretation of nuclear events. These classified integrated research products are developed in part by research from open competition in coordination with the installation of seismic stations by monitoring agencies. The NDD program also conducts a limited amount of applied research and system support in non-seismic ground-based detection technologies to sustain user monitoring agencies.

▪ **Supporting Activities**	**3,025**	**5,495**	**0**

The Supporting Activities line has been discontinued. Crosscutting activities previous supported by this line are fully integrated into PD and NDD program budgets.

Total, Nonproliferation and Verification Research and Development O&M	**257,277**	**362,424**	**261,944**

Construction

▪ **06-D-180, Physical Sciences Facility, PNNL (PED)**	**3,700**	**0**	**0**
▪ **07-SC-05, Physical Sciences Facility, PNNL (Construction)**	**4,220**	**24,772**	**13,147**

The R&D program supports a joint effort with the DOE Office of Science and the Department of Homeland Security (DHS) to construct approximately 200,000 gross square feet of laboratories, offices, and facilities, known as the Physical Sciences Facility (PSF), on the Horn Rapids Triangle, at Pacific Northwest National Laboratory. Life extension upgrades to Building 325 in the Hanford 300 Area will be included as part of the second phase of the construction project. This effort will replace and/or extend existing research capabilities being displaced as a result of the closure and clean-up in the Hanford 300 Area. The Department's Office of Environmental Management must complete remediation in the 300 Area by 2015; therefore, transition from the 300 Area must be completed by February 2011. The project data sheet can be found within the Office of Science's request for the infrastructure program.

Total, Construction	**7,920**	**24,772**	**13,147**
Total, Nonproliferation and Verification Research and Development	**265,197**	**387,196**	**275,091**

Explanation of Funding Changes

	FY 2009 vs. FY 2008 ($000)
Nonproliferation and Verification R&D O&M	
▪ **Proliferation Detection (PD) (Includes Homeland Security)**	
Decrease reflects return to baseline budget after the above-request funding acceleration of the program in FY 2008. The decrease also incorporates the transfer of prompt diagnostic work from this program into the Nuclear Detonation Detection Program (described below) as well as a slight offset by the transfer into the program of Supporting Activities previously funded in a separate subprogram.	-79,026
▪ **Nuclear Detonation – Detection (NDD)**	
Decrease reflects return to baseline budget after the above-request funding acceleration of the program in FY 2008. The decrease also is slightly offset by the incorporation of nuclear forensics work into the program from the Proliferation Detection Program and the transfer into the program of Supporting Activities previously funded in a separate subprogram.	-15,959
▪ **Supporting Activities**	
Reflects a budget structure change transferring these activities to PD ($3,297) and to NDD ($2,198).	–5,495
Subtotal Funding Change, Nonproliferation Verification R&D O&M	**–100,480**
▪ **Construction**	
Funding required to maintain project baseline.	-11,625
Total Funding Change, Nonproliferation Verification R&D	**-112,105**

Capital Operating Expenses and Construction Summary

Capital Operating Expenses[a]

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
General Plant Projects	474	488	503
Captial Equipment	35,308	36,367	37,458
Total, Capital Equipment	**35,782**	**36,855**	**37,961**

Outyear Capital Operating Expenses

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
General Plant Projects	518	534	550	562
Captial Equipment	38,582	39,739	40,931	41,831
Total, Capital Equipment	**39,100**	**40,273**	**41,481**	**42,393**

Construction Projects[b]

(dollars in thousands)

	Total Estimated Cost (TEC)	Prior Year Appro-priations	FY 2007	FY 2008	FY 2009	Unappro-priated Balance
06-D-180, Physical Sciences Facility, PNNL, (PED), VL	27,486	12,870	3,700	0	0	0
07-SC-05, Physical Sciences Facility, PNNL, (Construction), VL	180,000–245,000	0	4,220	24,772	13,147	TBD
Total, Construction			**7,920**	**24,772**	**13,147**	**TBD**

[a] Since funds are appropriated for Operations and Maintenance, which includes operating expenses, capital equipment and general plant projects, we no longer budget separately for capital equipment and general plant projects. FY 2008 and FY 2009 funding shown reflects estimates based on actual FY 2007 obligations.

[b] This is a joint project funded by two DOE programs, the Office of Science (SC) and NNSA and the Department of Homeland Security. This table reflects NNSA funding only except for the TEC.

Nonproliferation and International Security

Funding Schedule by Activity[a]

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
Nonproliferation and International Security			
Dismantlement and Transparency	38,967	45,709	42,003
Global Security Engagement and Cooperation	50,232	50,912	47,437
International Regimes and Agreements	31,787	44,444	35,267
Treaties and Agreements	2,495	3,879	15,760
International Emergency Management Cooperation	5,430	5,049	0
Total, Nonproliferation and International Security	**128,911**	**149,993**	**140,467**

Outyear Funding Schedule

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
Nonproliferation and International Security				
Dismantlement and Transparency	45,316	47,613	51,332	52,610
Global Security Engagement and Cooperation	54,379	57,136	61,599	63,133
International Regimes and Agreements	46,826	49,200	53,043	54,364
Treaties and Agreements	4,531	4,762	5,134	5,261
International Emergency Management Cooperation	0	0	0	0
Total, Nonproliferation and International Security	**151,052**	**158,711**	**171,108**	**175,368**

Budget Structure Change

Beginning in FY 2009, International Emergency Management Cooperation has been realigned into the Nuclear Weapons Incident Response budget request within the Weapons Activities account.

Description

The Nonproliferation and International Security (NIS) mission is to prevent and counter weapons of mass destruction (WMD) proliferation by providing policy and technical support to implement and monitor transparent WMD reductions; strengthen nuclear safeguards, physical protection and export control systems in other countries; transition WMD expertise and infrastructure in partner countries to peaceful purposes; and improve international regimes, agreements and arrangements.

To address high-level U.S. nuclear energy priorities and initiatives, efforts will be directed towards the safe and secure expansion of nuclear energy use. To this end, in FY 2009, NIS will support the Next Generation Safeguards Initiative (NGSI) to strengthen international safeguards and revitalize the U.S. technical base that supports them. Nuclear power generation is expected to increase substantially over the next two decades, leading to deployment of new types of reactors and fuel cycle plants and the introduction of reactors in countries not now in possession of them. Credible, effective, and efficient safeguards are required to facilitate the expansion of nuclear energy in a manner that minimizes proliferation and terrorism risks. In response to this challenge, NGSI will support: (1) the development

[a] FY 2007 reflects the Office of Global Initiatives for Proliferation Prevention (formerly Russian Transition Initiatives) funding shift of $28,140,000 to Global Security Engagement and Cooperation and shift of the Office of HEU Transparency Implementation funding of $17,531,000 to Dismantlement and Transparency.

and demonstration of new safeguards tools and technologies; (2) an expansion of partnerships for safeguards cooperation; and (3) the revitalization of the safeguards human capital base in the United States and abroad. NGSI advances the goals of the U.S. Global Nuclear Energy Partnership (GNEP) and related Presidential initiatives to promote the expanded use of nuclear power. It also will reinforce related nuclear energy and nonproliferation programs implemented by NIS, including the establishment of reliable fuel services as an alternative to enrichment and reprocessing, and safeguards and security assistance for existing and aspiring nuclear energy states.

Another priority in FY 2009 is disablement, dismantlement, and verification of nuclear programs in North Korea. NIS oversees operational teams on the ground in North Korea conducting denuclearization activities and participates in the Six-Party Talks framework. In FY 2009, NIS will provide technical expertise required to complete the agreed-- to disablement actions of the North Korean nuclear facilities, continue to verify the North Korean declaration of its nuclear program elements, support the Six-Party Talks Working Groups, and undertake scientist engagement opportunities to support denuclearization and proliferation risk reduction.

NIS also will control the export of items and technology useful for WMD programs; continue an augmented export control cooperation program involving emerging suppliers and high-traffic transit states; break up proliferation networks and improve multilateral export control guidelines; develop and implement policy in support of global nonproliferation regimes; provide the technical edge within the interagency in the various interdiction activities; develop and implement transparency measures to ensure that nuclear materials are secure; and transition WMD scientific communities in high-risk nations.

Within the NIS program, four subprograms make unique contributions to Program Goal 2.2.41.00. These four subprograms are described below.

The Dismantlement and Transparency (D&T) subprogram provides policy and technical support for nonproliferation and arms control treaties and agreements that promote transparent WMD reductions; develops effective verification options for dismantlement of nuclear equipment, weapons and components; and develops monitoring equipment, technology and tools to ensure obligations of foreign governments are being met. D&T will administer activities involving the incorporation of safeguards into facility designs and development of related verification tools and methods.

The Global Security Engagement and Cooperation (GSEC) subprogram supports implementation of United Nations Security Council Resolution (UNSCR) 1540 and the Global Initiative to Combat Nuclear Terrorism, by engaging in global cooperative efforts to strengthen nuclear infrastructure, safeguards and export control systems, and redirect WMD expertise in selected countries of concern to non-weapons related activities. GSEC will work with foreign partners to ensure their nuclear infrastructure and safeguards are consistent with nonproliferation norms.

The International Regimes and Agreements (IRA) subprogram provides policy and technical support to IAEA safeguards, multilateral supplier regimes, nuclear interdiction efforts, nonproliferation treaties and agreements, international physical protection activities designed to limit the spread of WMD and related items and technologies, and export control and interdiction activities. IRA will work with domestic and international partners on a reliable fuel supply concept, export controls for GNEP-related technology, and policies for enhanced physical protection and safeguards.

The Treaties and Agreements (TA) subprogram supports implementation of bilateral or multilateral, Presidential-directed or Congressionally-mandated nonproliferation and international security requirements stemming from high-level nonproliferation initiatives, agreements and treaties. Specifically, TA conducts policy and technical analysis on urgent national security issues, proliferation trends in regions of concern, and options to strengthen international mechanisms for preventing proliferation. TA also will coordinate all activities and funding for the NGSI.

Major FY 2007 Achievements

Major Outyear Priorities and Assumptions
NIS outyear funding profile totals $656,239,000 and will place increasing emphasis on Next Generation Safeguards, including activities to: develop and demonstrate new and enhanced international safeguards approaches and technologies; design new verification tools and methods; expand existing, and develop new partnerships for advanced safeguards cooperation; lead development of assured fuel supply concepts and activities; revitalize the safeguards human capital base; and address regulatory, licensing and export control issues. The NIS funding profile also will provide for activities that continue to prevent and counter WMD proliferation by providing policy and technical support to implement and monitor transparent WMD reductions; strengthen indigenous institutional safeguards and export control systems in other countries; transition WMD expertise and infrastructure to peaceful purposes; and improve international and multinational international safeguards, export control, and interdiction regimes.

Program Assessment Rating Tool (PART)
The Department implemented a tool to evaluate selected programs. The PART was developed by the Office of Management and Budget (OMB) to provide a standardized way to assess the effectiveness of the Federal Government's portfolio of programs. The structured framework of the PART provides a means through which programs can assess their activities differently than through traditional reviews. The NIS program has incorporated feedback from the OMB into the FY 2009 Budget Request, and has taken or will take the necessary steps to continue to improve performance.

The results of the OMB review of NIS are reflected in the FY 2004 Budget Request. OMB gave the NIS program scores of 100 percent on the Program Purpose and Design; Strategic Planning; and Program Management Sections; and 743 percent on the Program Results and Accountability Section. Overall, the OMB rated the NIS program 87 percent, its highest category of "Effective." The OMB assessment found that the program has clear and unique purpose, and has demonstrated good progress in achieving its long-term and annual performance goals. In addition, OMB required that an independent evaluation be conducted to assess if the program is effectively achieving results. In response to the OMB findings, NNSA arranged for and conducted an independent evaluation. Although the results of this independent review were positive with respect to the program's structure and performance, NNSA implemented the study's suggestions on ways to increase NIS's visibility and performance.

The results of the OMB review of GIPP are reflected in the FY 2007 Budget Request. OMB gave the GIPP program very high scores of 100 percent on the Program Purpose and Design, 100 percent on the Strategic Planning Sections, 98 percent on the Program Management Section, and 87 percent on the Program Results Section. OMB's overall PART rating for GIPP is 94 percent, its highest category of "Effective." OMB attributed these scores to the fact that the GIPP program has a clear and unique

purpose; is well managed; has clear, concise, meaningful, and measurable performance metrics; and has demonstrated good progress in achieving its long-term and annual goals. In response to OMB findings, the GIPP is continuing to monitor the target population of misplaced WMD experts to ensure complete and effective coverage of the issue is maintained.

Annual Performance Results and Targets

(R = Results; T = Targets)

Performance Indicators	FY 2005 Results	FY 2006 Results	FY 2007 Results	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Endpoint Target
Program Goal 2.2 (Weapons of Mass Destruction) GPRA Unit Program 2.2.41.00 (Nonproliferation and International Security)										
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 (Long-term Outcome)	R: 249 T: 249	R: 285 T: 282	R: 315 T: 312	T: 342	T: 372	T: 402	T: 432	T: 462	T: 492	By 2014, confirm that 500 metric tons of weapons-usable HEU has been permanently eliminated from the Russian stockpile.
Cumulative number of the GIPP target population of displaced Russian and FSU WMD experts who are currently employed in GIPP grants or long-term private sector jobs (and cumulative number who are employed in long-term private sector jobs resulting from GIPP grants) (Long-term Outcome)	R: 11,500 (3,800) T: 12,100 (4,000)	R: 11,800 (4,100) T: 11,800 (4,100)	R: 12,100 (4,400) T: 12,100 (4,400)	T: 12,400 (4,700)	T: 12,900 (5,200)	T: 13,400 (5,700)	T: 13,900 (6,200)	T: 14,400 (6,700)	T:14,700 (6,900)	By 2015, employ 17,000 in grants or long-term private sector jobs. [a] By 2019, employ 11,000 in long-term private sector jobs resulting from grants. [a]
Cumulative percentage of non-USG (private sector and foreign government) project funding contributions obtained relative to cumulative USG GIPP funding contributions (Efficiency)	R: 65% T : 65%	R: 70% T: 70%	R: 75% T: 75%	T: 78%	T: 80%	T: 82%	T: 85%	T: 88%	T; 90%	By 2019, obtain non-USG funding contributions equal to 100% of the cumulative USG GIPP funding contributions.
Annual number of technologies transferred to international regimes and other countries to prevent and counter WMD proliferation and nuclear-related terrorism (Annual Output)	R: 1 T: 1	R: 23 T: 5	R: 5 T: 5	T: 4	T: 9	T: 9	T:11	T: 13	T: 14	Annually transfer targeted technologies to international regimes and other countries to prevent and counter WMD proliferation and nuclear-related terrorism.

[a] The NIS target population of 17,000 is derived from the original NAS estimate of 60,000 less attrition and those experts engaged by other United States Government (USG) and international programs. The 11,000 is derived from the target population of 17,000, less those employed by recovering Russian/FSU economies.

Performance Indicators	FY 2005 Results	FY 2006 Results	FY 2007 Results	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Endpoint Target
Annual number of international and domestic experts (e.g., IAEA inspectors, export control officers, physical protection personnel) trained in nonproliferation to fulfill the President's policy delineated on 11 February 2004 and implement the U.S.-sponsored UN Security Council Resolution 1540 criminalizing proliferation (Annual Output)	R: 1,100 T: 1,100	R: 1,930 T: 1,160	R: 3,907[a] T: 1,330	T: 2,500	T: 2,500	T: 2,500	T: 2,500	T: 2,500	T: 2,500	Annually train at least 2,500 experts.

[a] Over the last two years, INECP has experienced a significant expansion in the number of countries in which it operates - due in part to requests from the Department of State through unsolicited award letters to hold events. The program is also becoming better known in the international export control arena; turnout at last year's events was higher than expected due, in part, to the target countries' realization that INECP workshops offer high-quality training for their front-line enforcement officers, licensing agents, and producers of dual-use commodities. Last year's expansion into the generally more mature export control programs of Western Europe, in comparison with its traditional target countries in the FSU, Eastern Europe, and Asia, has also dramatically increased the number of persons trained - both in the overall increase in the number of workshops presented by INCEP and in the larger number of attendees at each of those workshops. Lastly, the number for FY 2007 contains US CBP agents trained by our program which was not formerly included in our reporting.

Detailed Justification

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
Dismantlement and Transparency	**38,967**	**45,709**	**42,003**

Dismantlement and Transparency 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. The request supports for the following program elements: U.S.-Russian Federation Plutonium Production Reactor Agreement (PPRA); U.S.-Russian Federation Warhead Safety and Security Exchange (WSSX) Agreement; U.S.-Russian Federation Highly Enriched Uranium (HEU) Purchase Agreement; the Chemical Weapons Convention (CWC); nuclear testing limitations; policy development for the Strategic Arms Reduction Treaty (START) and the Treaty of Moscow; future nuclear initiatives; and activities to develop advanced safeguards equipment and technologies for the U.S. Government and in coordination with the International Atomic Energy Agency (IAEA). The request will promote the incorporation of safeguards into facility designs and design new related verification tools and methods.

- **Warhead Dismantlement and Fissile Material Transparency** **14,814** **13,790** **14,041**

  The Warhead Dismantlement and Fissile Material Transparency (WDT) Program negotiates agreements and develops transparency options to provide confidence that Russian nuclear weapons are being dismantled and that the excess fissile materials are not used in new nuclear weapons. The Program supports policymaking, negotiations, and implementation for the following treaties and agreements: the Threshold Test Ban Treaty; Limited Test Ban Treaty, PPRA, the WSSX Agreement, START, the Treaty of Moscow, and the CWC. Under the umbrella of the Bush-Putin Bratislava Agreement on nuclear security, the Program evaluates technologies to combat nuclear-related terrorism (e.g., nuclear material detectors), and works with the Russian Federation to develop these technologies to meet specific, mission-based end-user needs. In FY 2009, the WDT Program will complete four U.S.-Russian transparency visits under the PPRA and complete the development and evaluation of approximately ten technologies under the WSSX Agreement, including technologies to combat nuclear-related terrorism based upon the Bush-Putin commitments made in Bratislava.

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
▪ **Nuclear Noncompliance Verification**	**6,622**	**17,486**	**13,141**

The Nuclear Noncompliance Verification (NNV) Program provides advanced technology applications to verify declared nuclear activities, detect undeclared nuclear materials and activities, and support the verifiable dismantlement of nuclear programs in countries of proliferation concern. Program activities are closely coordinated with the work of the NNSA Nonproliferation and Verification R&D program, and also require significant involvement and coordination with the IAEA, particularly in the area of new and emerging proliferation threats. In addition, the NNV Program oversees DOE support for the U.S. Support Program (USSP) to IAEA Safeguards, which develops equipment and technologies and provides inspector training and technical consultant support to the IAEA Department of Safeguards. USSP assistance aims to increase the overall effectiveness and efficiency of IAEA safeguards and strengthen IAEA capabilities to detect undeclared nuclear activities. Other specially-designed tools and technologies will also be developed to address unique proliferation threats. In FY 2009, the NNV Program will conduct agreed-to disablement, dismantlement and verification activities of nuclear programs in North Korea and support the Six-Party Talks Working Groups. The NNV program also will complete the development of three verification tools, technologies, or analyses, and accelerate planning and readiness to support verifiable dismantlement of nuclear programs in other countries of proliferation concern.

▪ **HEU Transparency Implementation**	**17,531**	**14,433**	**14,821**

The HEU Transparency Program annually monitors the conversion of 30 metric tons (MT) of Russian highly-enriched uranium (HEU) into low enriched uranium (LEU), to provide confidence that the LEU purchased under the 1993 HEU Purchase Agreement is in fact derived from dismantled Russian nuclear weapons. Reciprocal transparency monitoring visits are conducted to ensure the nonproliferation objectives of the Agreement are met. The Program also provides support to Transparency Review Committee negotiating sessions with Russian counterparts to update transparency procedures as new facilities and processes are introduced, and to resolve issues related to program implementation. In FY 2009, the HEU Transparency Program will complete 24 monitoring visits, monitor the conversion of 30 MT of Russian HEU to LEU for a cumulative total of 372 MT downblended and verifiably eliminated, support a Russian monitoring visit to the United States, and continue to archive and analyze Russian transparency data.

Global Security Engagement and Cooperation	**50,232**	**50,912**	**47,437**

Global Security Engagement and Cooperation (GSEC) supports implementation of UNSCR 1540, the Global Initiative to Combat Nuclear Terrorism**,** and the international development or expansion of civilian nuclear energy by helping states strengthen safeguards to prevent the diversion of nuclear materials; strengthening national WMD export control systems at the governmental and industry level; and helping to transition WMD scientific communities in high-risk nations. These activities assist partner states to implement and enforce nonproliferation obligations; detect and deter proliferators seeking WMD; create nonproliferation partnerships; and prevent the migration of WMD expertise to states and sub-state groups of proliferation concern.

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
▪ **Confidence Building Measures**[a]	**4,742**	**1,300**	**1,000**

The Confidence-Building Measures (CBMS) program addresses the WMD proliferation threat by developing and implementing multilateral technical collaborations and training in regions of proliferation concern. Specific projects include assisting states to meet emerging nuclear energy security requirements and associated nonproliferation obligations and working on a regional basis on key seismic research that advance security objectives. In FY 2009, the program will continue to streamline its activities and focus on areas identified as high priority, including East Asia and the Middle East.

▪ **International Nuclear Safeguards and Engagement Program**	**7,623**	**9,144**	**11,036**

The International Nuclear Safeguards and Engagement Program (INSEP) assists with the development and expansion of civilian nuclear infrastructures worldwide, promotes regional initiatives to augment safeguards cooperation activities, conducts regional safeguards workshops, and engages in other outreach associated with the development of civilian nuclear infrastructures, consistent with international nuclear fuel cycle initiatives and other U.S. international nonproliferation objectives. In FY 2009, INSEP will work with advanced fuel cycle partners to develop and implement next-generation safeguards technology, such as highly integrated remote monitoring and safeguards for advanced reprocessing facilities and fast reactor fuel cycles. INSEP will also expand collaborations with established international partners including China, Libya, and Japan, and develop new partnerships with countries in Asia. In support of the global expansion of nuclear energy, the program will pursue regional opportunities in North Africa, the Middle East and elsewhere to promote nuclear infrastructure related objectives.

▪ **International Nonproliferation Export Control and Border Monitoring**[b]	**9,727**	**9,510**	**11,557**

The International Nonproliferation Export Control Program (INECP) works internationally to strengthen national systems of export control, focusing efforts in countries and regions of proliferation concern. INECP has three primary components, including Export Control training, the Commodity Identification Training (CIT) Program, and the Cooperative Border Security Program (CBSP). INECP works with governments and industry to build the necessary export control infrastructure to control WMD-related controlled exports. The CIT Program works with established and emerging suppliers, high-traffic trans-shipment countries, and transit countries with geographic proximity to suppliers with inadequate controls to improve the ability of these countries to control WMD-related and dual-use technology consistent with international requirements. CBSP enhances

[a] These projects were one element of the former Security Engagement/Regional Security program.

[b] Reflects the addition of Border Monitoring to the previous title and realignment of funds from Security Engagement/Regional Security for Border Monitoring.

border security through technical cooperative solutions, such as explosives detection portals installed at key border points. INECP activities are coordinated closely with the State Department-led Export Control and Related Border Security (EXBS) assistance initiatives. In FY 2009, building on improved access to key supplier states (EU states, Pakistan and China) and greater implementation of industry outreach activities, INECP will strengthen the ability of partner governments to detect and deter manufacturers illicitly supplying proliferation networks. In addition, CBSP will continue to work with the Cooperative Monitoring Center in Jordan to advance border security related activities in the Middle East and will continue border security related projects in Afghanistan, Pakistan and India.

- **Global Initiatives for Proliferation Prevention** **28,140** **30,958** **23,844**

  The Global Initiatives for Proliferation Prevention (GIPP) redirects displaced scientists and technical personnel with WMD 'know-how' into sustained, nonmilitary employment. GIPP achieves this by engaging experts with WMD expertise in alternate technical, highly specialized research aimed at commercializing indigenous technologies. These activities take place primarily within the Former Soviet Union, where GIPP activities will remain focused in FY 2009, with additional activities in Libya and Iraq. In support of the Department's implementation of GNEP, GIPP will focus a sub-element of its activities on energy security related activities, specifically focusing on projects that could promote GNEP's nonproliferation objectives.

International Regimes and Agreements **31,787** **44,444** **35,267**

International Regimes and Agreements (IRA) raises WMD proliferation barriers and strengthens the nonproliferation regime by providing policy and technical support to multilateral, bilateral and international nonproliferation regimes and agreements. IRA negotiates, implements and strengthens multilateral regimes and conventions, international treaties, and institutions while promoting U.S. initiatives and efforts to limit the spread of nuclear, missile, chemical and biological weapons-significant items and technologies. IRA also upholds and implements U.S. safeguards, statutory export control licensing requirements, and DOE complex technology security obligations**.** IRA provides technical support to the U.S. law enforcement and intelligence communities in their investigation of the movement of strategic exports and imports. In support of the NGSI and GNEP in FY 2009, IRA will focus on IAEA safeguards and strengthening the pool of U.S. experts to support IAEA safeguards; address associated regulatory, licensing and export control issues, and work with domestic and international partners on Reliable Fuel Supply concepts and implementation. IRA also will support multilateral supplier regimes; technology transfer interdictions; developing effective international physical protection standards; counter-proliferation and interdiction activities; and promote the universalization of the Treaty on the Nonproliferation of Nuclear Weapons (NPT).

- **Interdiction/Enforcement** **2,970** **3,000** **2,821**

  The Interdiction Technical Analysis Group (ITAG) provides critical technical support, real-time "reach-back" capabilities, and policy guidance to USG interdiction groups and activities. These working groups address cases that require diplomatic approaches to foreign governments on suspected transfers of nuclear, missile, or chemical/biological related commodities or technologies. IRA's interdiction and enforcement support activities include participation in USG Interagency Interdiction Working Groups and implementation of U.S. sanctions-related efforts. Additionally,

(dollars in thousands)

FY 2007	FY 2008	FY 2009

DOE participates in and supports the USG's Proliferation Security Initiative (PSI). To support U.S. export control enforcement efforts, the program provides reference guides on WMD-related technologies to USG enforcement agencies and offices, in cooperation with the Departments of Homeland Security and Commerce. In FY 2009, the program will enhance DOE National Laboratory technical support to the USG interdiction groups; increase coverage of WMD technologies in the technical reference guides; enhance the global Proliferation Trade Control Database to provide identification of foreign manufacturers and vendors globally; and provide assessments of WMD-related items, proliferation program choke-points and international trade flows to determine interdiction opportunities.

- **Global Regimes** **1,890** **2,626** **2,116**

The Global Regimes Program develops policy and provides program oversight on nuclear nonproliferation and international security issues, and nuclear treaties and agreements including support for issues pertaining to the NPT; multilateral issues at the United Nations Conference on Disarmament, including negotiations on a Fissile Material Cut-Off Treaty; the IAEA Technical Cooperation (TC) Program which facilitates access by IAEA Member States to the peaceful use of nuclear energy; bilateral Agreements for Cooperation in the Peaceful Uses of Nuclear Energy (under Atomic Energy Act Section 123); and the Biological Weapons and Toxins Convention (BWC). The Global Regimes Program also assists in the formulation of internationally-agreed mechanisms to ensure that states have reliable access to the nuclear fuel market, providing policy and technical expertise to these agreements. Moreover, the program ensures that the development and implementation of such arrangements meet U.S. national security and foreign policy objectives, and can be implemented at DOE/NNSA National Laboratories and other facilities. In FY 2009, the Program will provide legislatively-mandated technical assistance to negotiations supporting Agreements for Cooperation and their administrative arrangements, represent DOE/NNSA in potential negotiations on a Fissile Material Cut-Off Treaty and all NPT meetings and consultations, represent DOE/NNSA at the BWC Intersession Working Group meetings, and lead the development of assured fuel supply concepts and activities.

- **Nuclear Safeguards Program** **7,521** **19,257** **11,286**

The Nuclear Safeguards Program develops and implements DOE and international safeguards policies and approaches through several efforts. This program will directly support NGSI and GNEP as both move forward. Safeguards Policy efforts develop safeguards policy positions in the interagency process, and support the development of policy at the IAEA through the Director General's Standing Advisory Group on Safeguards Implementation. Voluntary Offer Agreement (VOA) Safeguards implementation meets existing treaty obligations through the application of safeguards at selected U.S. sites and maintains the DOE portion of the Eligible Facilities List. The Program's Additional Protocol (AP) implementation addresses issues and concerns arising within the DOE complex regarding obligations under the U.S. AP. The Safeguards Technology Applications program develops new approaches, safeguards concepts and technologies to improve the effectiveness and efficiency of IAEA safeguards verification, and works to reinvigorate the safeguards technology base (human capital and cutting-edge technology)—all of which will be essential to combat proliferation in view of a rapidly growing and dynamic international fuel cycle. In FY 2009, the Program will focus on revising and implementing recommendations associated with

(dollars in thousands)

FY 2007	FY 2008	FY 2009

the Hexapartite Safeguards Protocol negotiation process and investigating new safeguards systems for novel enrichment technologies (Silex and the Sigma system). The Program also will provide technical analysis and support for international safeguards and nonproliferation policy, including the assessments necessary to support regulatory and governance processes and conduct proliferation risk assessments of new technologies and facilities.

- **Export Control Licensing Operations** **10,204** **10,728** **10,580**

IRA fulfills statutory requirements to support domestic export licensing operations. This includes reviewing and providing advice on U.S. export license applications for dual-use items (equipment, materials, technology and software) and munitions that could have uses in the development of nuclear, chemical, and biological weapons and their delivery systems. The Licensing Operations Program also administers Secretarial Authorizations for the transfer of U.S. nuclear technology, as provided for under the Atomic Energy Act and the implementing regulations in 10 CFR Part 810. In addition, the Program performs technical and nonproliferation reviews of DOE sensitive software code requests and DOE programs/projects involving foreign nationals. For these purposes, the Program maintains the Proliferation Information Network System (PINS), an automated, classified system for the review and evaluation of export requests and technology transfers to foreign nationals, as well as providing for the development and coordination of technical and nonproliferation studies on sensitive technology and related policy. The Program also operates and maintains a state-of-the-art Nuclear Suppliers Group (NSG) Information Sharing System (NISS), a secure internet-based system that allows NSG members to share real-time information on license denials to prevent proliferation, and provides related technical support to regime members. In FY 2009, the Program will develop and implement a similar system for the Australia Group, the chemical-biological weapons- related multilateral export control regime.

In cooperation with the Department of Homeland Security, the program also provides export enforcement training on WMD-related technologies to USG enforcement agencies; performs technical reviews of suspicious shipments for proliferation risk; shares technical proliferation assessments to identify export control vulnerabilities and critical technology needs of countries of proliferation concern; and provides access to the Proliferation Trade Control Directory (PTCD) for identification of manufacturers and brokers of export-controlled goods to aid in inspection and interdiction of illegal shipments. The Program participates in weekly USG interagency export licensing groups; interacts closely with the interagency on dual-use license application reviews; and maintains, with the Department of Commerce, the "Nuclear Referral List," which identifies nuclear dual-use items requiring special attention. It also supports a wide range of activities to promote export control compliance across the DOE complex and its contractors.

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
▪ **Export Control Multilateral**	**3,568**	**3,929**	**3,880**

The Export Control Multilateral Program provides technical and policy support to U.S. Government diplomacy within the Nuclear Suppliers Group (NSG) and the NPT Exporters' (Zangger) Committee, the Missile Technology Control Regime (MTCR), the Australia Group (AG) for chem/bio-related items, and the Wassenaar Arrangement for items controlled for national security reasons. The Multilateral Program draws on the unparalleled technical expertise in the national laboratories and is a recognized international leader in the area of nuclear export controls. This Program develops timely and topical analyses of WMD proliferation risk and programs of concerns, identifying export control vulnerabilities, and critical technology needs of countries of proliferation concern (choke-points). In FY 2009, the Program will 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.

▪ **International Nuclear Security**	**5,634**	**4,904**	**4,584**

The International Nuclear Security Program strengthens global physical security norms and practices by conducting bilateral physical protection assessments, as required under the 1978 Nuclear Nonproliferation Act, to verify that foreign sites holding U.S. nuclear material are adequately protected. The Program supports these objectives by assisting the IAEA in its execution of International Physical Protection Advisory Service (IPPAS) and other missions; conducting physical protection training for foreign officials; and aiding in the design and implementation of new physical protection guidelines in conjunction with the IAEA and other Member States. The Program also works with the IAEA and national physical protection officials to help states implement physical protection requirements, such as those required in the recently amended Convention on the Physical Protection of Nuclear Materials (CPPNM). The program coordinates with the Office of Global Threat Reduction to provide assessments to assist with future physical protection upgrades. In FY 2009, this Program will negotiate and implement the new international standards for physical protection, published as IAEA INFCIRC/225. In support of the global expansion of nuclear energy, the Program will work with the United States and GNEP partners to ensure that physical protection standards for new fuel and facilities are consistent with internationally agreed-upon physical protection standards and recommendations codified in the CPPNM and INFCIRC/225.

Treaties and Agreements	**2,495**	**3,879**	**15,760**

The Treaties and Agreements subprogram supports implementation of bilateral or multilateral, Presidentially-directed or Congressionally-mandated nonproliferation and international security requirements stemming from high-level nonproliferation initiatives, agreements and treaties. Specifically, this program conducts policy and technical analysis on urgent national security issues, proliferation trends in regions of concern, and options to strengthen international mechanisms for preventing proliferation. This includes funding research and engagement activities by non-governmental organizations and institutes of higher learning that support NNSA's mission and policy requirements. Examples of this work include analysis of regional nuclear fuel cycle growth and engagement of technical experts in a dialogue on nonproliferation infrastructure requirements for emerging and existing nuclear power programs. The program continues to provide for unexpected,

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009

unplanned responses to requirements of an immediate nature based on U.S. national security needs. Examples of unforeseen activities include: providing technical and policy support to denuclearization and energy assistance working group discussions with North Korea; analysis of procurement associated with the emergence of proliferation networks; and dismantlement and removal of nuclear materials from clandestine WMD programs. In FY 2009, the program will coordinate activities and funding for all NIS Next Generation Safeguards Initiative activities aimed at strengthening international safeguards and revitalizing the U.S. technical base that supports them, and conduct 10-12 policy studies/analyses undertaken by National Laboratories, non-government organizations, or institutes of higher learning in support of the Department's implementation of high-level nonproliferation initiatives such as GNEP, UNSCR 1540, the Global Initiative to Combat Nuclear Terrorism, and the Proliferation Security Initiative. In addition, the program will provide policy and technical analyses of and responses to emerging and immediate nonproliferation and counter-proliferation security issues.

International Emergency Management and Cooperation	**5,430**	**5,049**	**0**

Reflects implementation of the realignment of IEMC to Nuclear Weapons Incident Response within Weapons Activities.

Total, Nonproliferation and International Security	**128,911**	**149,993**	**140,467**

Explanation of Funding Change

	FY 2009 vs. FY 2008 ($000)
▪ **Dismantlement and Transparency**	
This decrease is a reflection of continuing funding from FY 2008 to support the dismantlement of nuclear facilities and programs in countries of concern and funding to develop and implement advanced safeguards technologies and methods including those that can support the implementation of the GNEP program.	-3,706
▪ **Global Security Engagement and Cooperation (GSEC)**	
This decrease is continuing funding to support international export control outreach and training, and to support cooperation on safeguards and nuclear infrastructure development.	-3,475
▪ **International Regimes and Agreements**	
Funding decrease reflects efficiencies that will be achieved in the export licensing areas due to streamlined license review processes and more effective databases.	-9,177
▪ **Treaties and Agreements**	
Funding increase reflects decision to increase funding for the Next Generation Safeguards Initiative activities aimed at strengthening international safeguards.	+11,881
▪ **International Emergency Management and Cooperation (IEMC)**	
Reflects implementation of the realignment of IEMC, from Nonproliferation and International Security to the Nuclear Weapons Incident Response in the Weapons Activities account in FY 2009.	-5,049
Total Funding Change, Nonproliferation and International Security	**-9,526**

Capital Operating Expenses and Construction Summary

Capital Operating Expenses[a]

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
General Plant Projects	0	0	0
Captial Equipment	192	198	204
Total, Capital Equipment	**192**	**198**	**204**

Outyear Capital Operating Expenses

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
General Plant Projects	0	0	0	0
Captial Equipment	210	216	222	228
Total, Capital Equipment	**210**	**216**	**222**	**228**

[a] Since funds are appropriated for Operations and Maintenance, which includes operating expenses, capital equipment and general plant projects, we no longer budget separately for capital equipment and general plant projects. FY 2008 and FY 2009 funding shown reflects estimates based on actual FY 2007 obligations.

International Nuclear Materials Protection and Cooperation

Funding Schedule by Activity [a] [b]

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
International Nuclear Materials Protection and Cooperation			
Navy Complex	17,300	13,268	16,403
Strategic Rocket Forces/12th Main Directorate	152,843	121,912	53,624
Rosatom Weapons Complex	94,005	79,114	32,297
Civilian Nuclear Sites	52,700	54,188	34,469
Material Consolidation and Conversion	23,828	19,488	20,924
National Programs and Sustainability	65,081	69,632	59,333
Second Line of Defense	191,889	266,880	212,644
Total, International Nuclear Materials Protection and Cooperation	**597,646**	**624,482**	**429,694**

Outyear Funding Schedule

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
International Nuclear Materials Protection and Cooperation				
Navy Complex	16,404	16,304	16,274	16,400
Strategic Rocket Forces/12th Main Directorate	32,256	28,138	28,615	29,496
Rosatom Weapons Complex	9,522	9,705	9,802	10,022
Civilian Nuclear Sites	18,032	18,358	18,543	18,958
Material Consolidation and Conversion	13,966	14,526	14,671	15,001
National Programs and Sustainability	72,347	68,401	69,088	70,639
Second Line of Defense	237,984	239,194	238,232	243,548
Total, International Nuclear Materials Protection and Cooperation	**400,511**	**394,626**	**395,225**	**404,064**

Description

The program prevents nuclear terrorism by working in Russia and other regions of concern to (1) secure and eliminate vulnerable nuclear weapons and weapons-usable material; and (2) install detection equipment at international crossing points and Megaports to prevent and detect the illicit transfer of nuclear material.

Within the International Nuclear Materials Protection and Cooperation program (INMP&C), seven subprograms each make unique contributions to GPRA Unit Program Goal 2.2.42.00.

An agreement on Nuclear Security Cooperation was reached between the Presidents of the United States (U.S.) and the Russian Federation during their February 2005 Bratislava Summit. This agreement includes for the first time a comprehensive joint action plan for the cooperation on security upgrades of Russian nuclear facilities at Rosatom and Ministry of Defense sites and cooperation in the areas of

[a] This amount includes the FY 2007 Supplemental Act (P.L. 110-28) of $120,000,000 for INMP&C and $30,000,000 for Megaports FY 2008.

[b] This amount includes the international contributions of $4,916,044 in FY 2007.

nuclear regulatory development, sustainability, secure transportation, Materials Protection Control and Accounting (MPC&A) expertise training, and protective force equipment. A number of important areas/buildings have been added to the scope of joint work since the Bratislava Summit. Due to the recent addition of this scope, the MPC&A upgrades at most of these additional areas/buildings will be completed after the 2008 completion date agreed to at the Bratislava Summit for all MPC&A upgrades to Rosatom sites as outlined in the Bratislava Agreement**.**

The Navy Complex program element improves security of Russian Federation (RF) Navy warhead and weapons usable material by installing improved security systems at RF Navy nuclear warhead sites, RF Navy HEU fuel storage facilities (fresh and damaged fuel), and shipyards where nuclear materials are present. The program also covers security systems at checkpoints near upgraded sites, Personnel Reliability Program (PRP) for the Russian Federation (RF) Ministry of Defense (MoD), and sustainability activities (i.e.: training, site-level maintenance support) for upgraded MoD sites. These activities comprise a total of 50 sites: 39 Russian Navy nuclear warhead sites and 11 Russian Navy fuel and other nuclear material storage sites.

The Strategic Rocket Forces (SRF)/12th Main Directorate program element improves security of Russian Federation (RF) warheads by installing improved security systems at RF Strategic Rocket Forces and 12th Main Directorate nuclear warhead sites. A total of 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 Rosatom Weapons Complex program element enhances U.S. national security by providing MPC&A upgrades to the Rosatom nuclear weapons, uranium enrichment, and material processing/storage sites. The Rosatom Weapons Complex is located in closed cities and is comprised of seven sites. The Civilian Nuclear Sites program element installs systems at 32 civilian nuclear sites (19 Russian and 13 Non-Russian).

The Material Consolidation and Conversion (MCC) program element reduces the complexity and the long-term costs of securing weapons-usable nuclear material. The MCC project is designed to significantly reduce the proliferation risk associated with weapons-usable nuclear materials by consolidating excess, non-weapons highly enriched uranium (HEU) and plutonium into fewer, more secure locations and converting highly enriched uranium into low enriched uranium (LEU) and weapons-usable plutonium into less proliferation-attractive form.

The National Programs and Sustainability element enables the INMP&C program to implement a focused strategy to ensure that programs can be sustained in the Russia Federation (RF) and other partner countries, by establishing and implementing projects to develop and revise regulations and develop inspection capabilities, site safeguards and security, training and regional support, site sustainability, and secure transportation and proforce upgrades.

The Second Line of Defense (SLD) Core program deploys radiation detection equipment, training and technical support at strategic transit and border crossings and at air and sea transshipment hubs in Russia and in other countries including the Former Soviet Union and Eastern Europe to provide these governments with the technical means to detect, deter and interdict illicit trafficking of nuclear and other radioactive materials. The SLD Megaports Program is pursuing cooperation with international partners to deploy and equip key seaports ("Megaports") with radiation detection equipment and to provide

training to appropriate law enforcement officials, in order to provide them with the technical means to deter and interdict illicit trafficking in nuclear and other radioactive materials in the global maritime system.

Major Outyear Priorities and Assumptions

The outyear projections of the INMP&C program totals $1,594,426,000. The Program supports efforts to secure and eliminate vulnerable nuclear weapons and weapons-usable materials in Russia and other areas of concern and efforts to prevent and detect the illicit transfer of nuclear material. Near level funding during the outyears reflects the completion of MPC&A upgrades to warhead and material sites in Russia and the transition to greater Russian cost sharing on sustainability activities. Funding for the Second Line of Defense program increases as the program is expanded to include additional sites and Megaports in targeted countries of strategic interest and in countries where NNSA is working with its Department of Homeland Security counterparts to implement requirements of the "Implementing Recommendations of the 9/11 Commission Act of 2007" for 100% integrated scanning of U.S.-bound container cargo at foreign seaports. To meet the goal of Nuclear Nonproliferation the INMP&C program plans to complete in Russia, MPC&A upgrades to a total of 73 warhead sites and approximately 215 buildings containing weapons usable nuclear material by the end of 2008 under the Bratislava Agreement MPC&A; blend-down a total of approximately 17 MTs of HEU by the end of 2015; and install radiation detection equipment at approximately 450 border around the world and at approximately 75 ports of interest in 35 countries. These results will directly support the goal of Nuclear Nonproliferation by securing warheads and weapons usable nuclear materials at their source from theft and or diversion and as a second layer of defense by preventing and detecting the illicit transfer of nuclear materials.

Program Assessment Rating Tool (PART)

The Department implemented a tool to evaluate selected programs. The PART was developed by the Office of Management and Budget (OMB) to provide a standardized way to assess the effectiveness of the Federal Government's portfolio of programs. The structured framework of the PART provides a means through which programs can assess their activities differently than through traditional reviews. The INMP&C program has incorporated feedback from the OMB into the FY 2009 Budget Request, and has taken or will take the necessary steps to continue to improve performance.

The results of the OMB review are reflected in the FY 2009 Budget Request. OMB gave the INMP&C program very high scores of 100 percent on the Program Purpose and Design, Strategic Planning, and Program Management Sections; and 74 percent on the Program Results Section. OMB's overall PART rating for INMP&C is 87 percent, its highest category of "Effective." OMB attributed these scores to the fact that the INMP&C program has a clear and unique purpose; is well managed; has clear, concise, meaningful and measurable performance metrics; and has demonstrated good progress in achieving its long-term and annual goals. In response to the OMB findings, INMP&C is developing a planning process to enable the transition of responsibility for sustaining installed security upgrades at Russian sites with weapons-usable nuclear material and nuclear warheads and refining U.S. lifecycle cost estimates to reflect the costs to sustain MPC&A upgrades, and the cost-sharing associated with their transition to full Russian Federation responsibility.

Annual Performance Results and Targets

(R = Results; T = Targets)

Performance Indicators *	FY 2005 Results	FY 2006 Results	FY 2007 Results	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Endpoint Target
Program Goal 2.2 (Weapons of Mass Destruction) GPRA Unit Program Goal 2.2.42.00 (International Nuclear Materials Protection and Cooperation)										
Cumulative number of buildings containing weapons usable material with completed MPC&A upgrades (Long-term Output)	N/A	N/A	N/A	T: 191	T: 215	T: 225	N/A	N/A	N/A	By December 2009, complete MPC&A upgrades on approximately 225 buildings containing weapons-usable nuclear material including Post Bratislava work-scope.
Cumulative number of buildings with weapons-usable material secured (Long-term Output)	R: 150 T: 150	R: 175 T: 175	R: 193 T: 190	N/A	N/A	N/A	N/A	N/A	N/A	By September 2007, secured (rapid or comprehensive upgrades complete) 193 buildings containing weapons-usable nuclear material. This measure is replaced as a result of the FY 2007 OMB PART review.
Cumulative number of warhead sites with completed MPC&A upgrades (Long-term Output)	R: 47 T: 47	R: 50[a] T: 53	R: 64 T: 58	T: 64	T: 73	N/A	N/A	N/A	N/A	By December 2008, complete MPC&A upgrades at approximately 73 warhead sites.
Cumulative metric tons of Highly-Enriched Uranium converted to Low-Enriched Uranium (Long-term Outcome)	R: 7.1 T: 7.5	R: 8.4 T: 8.6	R: 9.8 T: 9.5	T: 11.0	T: 12.4	T: 13.3	T: 14.2	T: 15.1	T: 16.0	By December 2015, convert 17 MTs of HEU to LEU.
Cumulative number of MPC&A regulations in the development phase for the Russian Federation and FSU countries (Long-term Output)	N/A	N/A	N/A	N/A	T : 105	T : 150	T: 176	T: 185	N/A	By the end of FY 2012, place a total of approximately 185 MPC&A regulations in the development phase for the Russian Federation and FSU countries.
Cumulative number of Second Line of Defense (SLD) sites with nuclear detection equipment installed (Cumulative number of Megaports completed) (Long-term Output)	R: 87 (4) T: 98 (5)	R: 104 (6) T: 114 (10)	R: 162 (12) T: 173 (12)	T: 224 (23)	T: 282 (32)	T: 334 (45)	T: 387 (55)	T: 436 (66)	T: 488 (75)	By December 2014, install radiation detection equipment at approximately 450 border crossing sites and 75 Mega-Ports (525 total SLD sites) (assuming no expansion of program sites).
Cumulative number of Megaports with host country cost-sharing, resulting in decreased cost to the US program (Estimated cost sharing value) (Efficiency)	N/A	N/A	N/A	5/$24M	8/$43M	11/$52M	14/$66M	16/$75M	18/$83M	By the end of FY 2013, complete host country cost sharing on approximately 18 Megaports for an estimated value of $83M.

[a] The number previously presented in the PAR was inaccurately reported as 53.

Detailed Justification

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
Navy Complex	**17,300**	**13,268**	**16,403**

The Navy Complex program element improves security of Russian Federation (RF) Navy warhead and weapons usable material by installing improved security systems at RF Navy nuclear warhead sites, RF Navy Highly Enriched Uranium (HEU) fuel storage facilities (fresh and damaged fuel), and shipyards where nuclear materials are present. These activities comprise a total of 50 sites, 39 Russian Navy nuclear warhead sites and 11 Russian Navy fuel and other nuclear material storage sites.

NNSA completed MPC&A upgrades at the final 2 Russian Navy nuclear warhead sites in FY 2006 (increasing the total Navy warhead sites secured with either completed rapid and/or comprehensive upgrades) to 39 sites. In FY 2009, NNSA will provide sustainability support such as training and site level maintenance of installed MPC&A upgrades to 12 of these 39 sites which meet interagency requirements for such support.

Comprehensive upgrades were completed on 100 percent of the 11 Navy fuel and other nuclear material storage sites in FY 2004. No new work is planned at those sites; however, sustainability and training efforts will continue for 7 of these sites to ensure that equipment provided is effective in protecting the material.

Strategic Rocket Forces/12th Main Directorate	**152,843**	**121,912**	**53,624**

The Strategic Rocket Forces (SRF)/ 12th Main Directorate program element improves security of RF warheads by installing improved MPC&A systems at RF Strategic Rocket Forces and 12th Main Directorate nuclear warhead sites. Twenty-five 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 will be based upon the refined process currently in place with the Russian Navy, which includes upgrades design driven by vulnerability assessments (VAs), a rapid upgrades and/or a comprehensive upgrades phase, and a sustainability program, which assures the systems will remain effective after the installation of upgrades is complete.

In FY 2009, NNSA plans to complete MPC&A upgrades at all nine 12th Main Directorate sites and provide sustainability support for 25 SRF sites including:

- Development of training curriculum and courses
- Construction and support of site-level areas

Infrastructure development, including performance assurance and procedure development.

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
Rosatom Weapons Complex	**94,005**	**79,114**	**32,297**

The Rosatom Weapons Complex program element enhances U.S. national security by providing MPC&A upgrades to the RF Rosatom nuclear weapons, uranium enrichment, and material processing/storage sites. The Rosatom Weapons Complex element primarily focuses on upgrades at 7 sites. The goal of this joint cooperative program is to identify areas that handle highly attractive material and provide protection against both internal and external threat scenarios.

In FY 2009, the program will continue to fund selective new upgrades to buildings/areas at these sites that were added to the cooperation after the Bratislava Summit. The majority of this work will be located at the Mayak Production Association, Arzamas-16, and Chelyabinsk-70 sites.

Significant efforts will be directed towards implementing a comprehensive MPC&A sustainability effort at all sites to include efforts to improve MPC&A management infrastructures, training, procedural development and adherence, system maintenance and repair, performance testing, configuration management, and operational cost analysis. Where necessary, the program will also provide support the replacement of systems that were upgraded early in the cooperation and are at the end of their operational lifecycle.

Funding also supports continued MPC&A sustainability activities in Kazakhstan, Ukraine, Belarus and Uzbekistan.

Civilian Nuclear Sites	**52,700**	**54,188**	**34,469**

The Civilian Nuclear Sites program element installs systems at 31 civilian nuclear sites (19 Russian and 13 Non-Russian). 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 while longer term, more comprehensive MPC&A upgrades are designed, installed and placed into operation. Following completion of initial rapid and comprehensive site upgrades, U.S. funding continues at a reduced level to help foster site capabilities to operate and maintain installed security systems, supports replacement of equipment and may support additional security enhancements, e.g., perimeter upgrades, as warranted. This program element will cover such support for those sites with completed MPC&A comprehensive upgrades.

In FY 2009, NNSA plans to provide sustainability support to 19 civilian nuclear sites with completed MPC&A upgrades including: support for training, procedures, maintenance, equipment repair, critical spare parts, and performance testing and other activities to these sites in order to ensure the sustainability of those upgrades.

In addition, in FY 2009, NNSA plans to continue cooperation with countries outside of Russia and the Former Soviet States to increase MPC&A awareness and to provide assistance to protect weapons usable materials when appropriate. This includes engagement with China on modern nuclear material security methodologies and best practices. Planned activities generally include training, technical exchanges, and consultations on how security at nuclear material locations may be improved. With some partners, it may be appropriate to support rapid upgrades for sites with weapons usable nuclear

materials which are most vulnerable to theft and/or diversion. This MPC&A assistance is expected to significantly reduce the risk of theft and/or diversion of weapons usable materials by those seeking to produce nuclear weapons for use in potential acts of terrorism.

Material Consolidation and Conversion **23,828** **19,488** **20,924**

The Material Consolidation and Conversion (MCC) program element reduces the complexity and the long-term costs of securing weapons-usable nuclear material. The MCC project is designed to significantly reduce the proliferation risk associated with weapons-usable nuclear materials by consolidating excess, non-weapons HEU and plutonium into fewer, more secure locations. This decreases the number of attractive theft targets and the equipment and personnel costs associated with securing such material. MCC also converts weapons-usable special nuclear material (SNM to a less proliferation attractive form). By the end of 2015, it is planned that the MCC project will convert approximately 17 MTs of HEU to LEU.

In FY 2009, NNSA plans to continue to implement the MPC&A strategy to simplify the nuclear security situation in Russia by converting attractive SNM to a less proliferant attractive form (e.g., HEU to LEU) and to consolidate material to fewer sites and fewer buildings where possible. The program is expecting to convert an additional 1.4 MTs of the total 17 MTs of HEU to LEU, (for a cumulative total converted of 12.4 MTs).

National Programs and Sustainability **65,081** **69,632** **59,333**

The National Programs and Sustainability element helps to build the necessary MPC&A infrastructure that enables the MPC&A programs to operate effectively and to be sustained in the Russian Federation (RF) and other partner countries, by establishing and implementing projects to develop regulations and inspection capabilities, site safeguards and security programs, material control and accounting training and regional support, and site sustainability capabilities along with a robust nuclear security culture. These projects develop the necessary MPC&A infrastructure for sustaining long-term MPC&A operations in Russia and other partner countries as well as the conditions by which U.S. technical and financial support can be transitioned to the Russian Federation.

In FY 2009, the program will accelerate projects to assist the RF and other partner countries in establishing the necessary MPC&A support infrastructure to sustain effective MPC&A operations in the long term. Since a re-baseline was established in 2005, the program is working to develop or revise 144 MPC&A regulations for the Russian Federation and Ukraine to support sustainable MPC&A operations. In FY 2009, a cumulative total of 105 MPC&A regulations will be in the development phase, with a total of 185 regulations in the development phase between FY 2009 and FY 2012. A regulatory analysis for the RF Ministry of Defense was completed in 2007; work to develop and revise regulations is underway; and 23 advanced Rostekhnadzor inspection exercises /Rosatom monitoring inspections and self-inspections will be conducted in the areas of physical protection and material control and accounting. The program will sustain (repair, maintain and replace if necessary) existing railcars and trucks to provide additional physical security protection for nuclear material shipments

(dollars in thousands)

FY 2007	FY 2008	FY 2009

The program will assist the Russian Federation in improving the security of weapons-usable nuclear material at high risk of insider theft or diversion. This will be done by helping to support a sustainable and effective measurement-based Material Control and Accountability (MC&A) program. In FY 2009; MC&A measurement methodologies will be developed for approximately 20 sites and five sets of reference materials will be developed for MC&A equipment calibration and operation. The program will also evaluate command and control communications systems at Rosatom sites to improve response times of protective forces to potential threats.

The program will operate and maintain 3 regional technical support facilities to provide equipment repair, maintenance, calibration assistance, operations assistance, configuration control, warranty service, spare parts inventories, and training for critical MPC&A systems and components; and continue to develop Russian MPC&A training, infrastructure curricula and support provisions of MPC&A courses. In FY 2009, 22 physical protection classes with 400 participants, and 40 material control and accounting classes with 600 participants will be conducted. In FY 2009, eight students will graduate from the Masters Graduate Program at the Moscow Engineering Physics Institute, and another 15 students will graduate from the Institute's Engineering Degree Program. Tomsk Polytechnic University will graduate its first class of 15 students from their Engineering Degree Program in February 2009.

The program will also assist the Russian sites in achieving long-term effective operation of their MPC&A programs by assisting sites to establish dedicated MPC&A organizations, and develop site MPC&A management plans, operating procedures, human resource programs, operational cost analysis and performance test plans. The program will also work to bolster the nuclear security culture in Russia through various security culture enhancement efforts.

In addition, the program will continue implementation of an MPC&A operations and transition strategy to achieve the goal of fully transitioning operations and maintenance of MPC&A upgrades to full Russian responsibility by working with the Russian Federation to develop the capabilities they need to maintain the safeguards and security of their weapons usable nuclear material.

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
Second Line of Defense	**191,889**	**266,880**	**212,644**
▪ **Core Program**	**75,771**	**136,035**	**78,553**

The Second Line of Defense (SLD) Core Program deploys radiation detection equipment, training and technical support at strategic transit and international road and rail crossing points and at air and sea ports in Russia and other countries throughout the Former Soviet Union, Central Asia, Eastern Europe and other regions to provide these governments with the technical means and training to deter and interdict illicit trafficking in nuclear and other radioactive materials. The program selects sites to be addressed, through a site prioritization and selection methodology so as to effectively plan and utilize program resources. In FY 2009, the SLD Core program plans to install radiation detection equipment at an additional 49 foreign sites in Azerbaijan, Kazakhstan, Lithuania, Latvia, Romania, Bulgaria, Hungry, Russia, Ukraine, Kyrgyzstan, Mongolia, Turkey, Turkmenistan and Mexico increasing the total non-Megaport sites with completed installations to 250. Training will be provided in monitor maintenance and alarm response to law enforcement personnel in these countries. Depending on the results of pilot projects begun in FY 2007, the SLD Core program plans to provide mobile detection and stationary detection capability at points internal to borders of high-threat countries. The SLD Core program provides maintenance and/or repair or training to support maintenance/repair, for radiation detection systems at up to 201 sites in countries where the SLD Core Program has installed such equipment, including Russia, Azerbaijan, Armenia, Turkey, Kazakhstan, Romania, Turkmenistan, Slovakia, Romania, Georgia and Ukraine. Additionally, the program will continue to maintain equipment installed by the U.S. Department of Defense in Uzbekistan. In addition to ongoing activities to implement the SLD Core program in countries of strategic importance, efforts to deploy radiation detection technologies at key land border crossings, airports, and seaports in support of various United Nations Security Council Resolutions will continue in FY 2009.

▪ **International Participant Contributions, [Non-add]**	**[4,916]**	**0**	**0**

Section 3114 of the John Warner National Defense Authorization Act for FY 2007 authorizes the Second Line of Defense program to accept and utilize international contributions. To date, NNSA has received actual contributions of $4.9 million from international participants including Canada and New Zealand.

The $4.9 million in contributions received during FY 2007 will provide for installation of radiation detection portal monitors and associated equipment at Ukrainian locations as part of the Second Line of Defense program's effort to detect and deter illicit trafficking in nuclear and other radioactive materials at international land border crossings, airports and seaports around the world.

▪ **Megaports**	**116,118**	**130,845**	**134,091**

The SLD Megaports Program is pursuing cooperation with international partners to deploy and equip key ports with radiation detection equipment and to provide training to selected law enforcement officials, in order to provide them the technical means to detect, deter and interdict

(dollars in thousands)

FY 2007	FY 2008	FY 2009

illicit trafficking in nuclear and other radioactive materials. This program is closely coordinated and complements the Department of Homeland Security's (DHS) Bureau of Customs and Border Protection's Container Security Initiative (CSI) and with DHS's recently announced Secure Freight Initiative (SFI), introduced on December 7, 2006. NNSA efforts under the Megaports Initiative also support implementation of new requirements in the "Implementing Recommendations of the 9/11 Commission Act of 2007," which calls for the integrated scanning of 100% of U.S.-bound container cargo at foreign seaports. By adding radiation detection capabilities at seaports, NNSA will be able to screen container cargo for nuclear and radioactive materials that could be used in a weapon of mass destruction or a RDD (dirty bomb) against the US, the host country and our allies. Under SFI, NNSA will work with DHS to demonstrate the integrated scanning of containers bound for the U.S. with radiation detection equipment (provided by NNSA) and non-intrusive imaging equipment (provided by DHS) and the transmission of integrated data from the equipment to U.S. teams both in-country and in the U.S.

The primary goal of the Megaports Initiative is to scan as much container traffic for radiation as possible, regardless of destination. The ports of interest to DOE have been identified based upon a risk-based approach to guide implementation priorities considering factors, such as container volume to the U.S., routing criteria, regional threat, and traffic flow characteristics. Under this initiative, NNSA plans to implement the program in up to 75 international seaports. Implementation of the Megaports program at any given port is contingent upon the agreement/invitation of the government in the country in which the port lies.

To expand on this partnership with CSI, the Megaports program has committed to the placement of a single radiation portal monitor (RPM) in close proximity to the non-intrusive imaging (NII) system at CSI ports that include integration of RPM alarm data with the NII images.
NNSA is engaged with multiple countries in Europe, Asia the Middle East and South America to negotiate the implementation of Megaports Initiative in these countries. NNSA continues to aggressively engage with governments and commercial terminal operators in those countries where it is important to implement the Megaports Initiative.

In FY 2009, NNSA plans to complete installations at 9 additional Megaports (increasing the number of completed ports to 32). This involves providing site surveys, engineering assessments, radiation detection equipment design procurement and installation. Sustainability support including equipment, maintenance, system checkups and diagnostics and supplemental training will be provided for 21 of the 23 sites which have completed installations. NNSA will continue to pursue cooperation with international partners interested in participating in the Megaports initiative.

Total, International Nuclear Materials Protection and Cooperation	**597,646**	**624,482**	**429,694**

Explanation of Funding Changes

	FY 2009 vs. FY 2008 ($000)
▪ **Navy Complex**	
Increase will provide additional site sustainability support needed for sites with completed MPC&A upgrades.	+3,135
▪ **Strategic Rocket Forces/12th Main Directorate**	
Decrease reflects completion of comprehensive MPC&A upgrades to Nine 12th Main Directorate sites in 2008.	-68,288
▪ **Rosatom Weapons Complex**	
Decrease reflects completion of MPC&A upgrades under the Bratislava Agreement.	-46,817
▪ **Civilian Nuclear Sites**	
Decrease reflects completion of MPC&A upgrades under the Bratislava Agreement and the completion of the majority of cooperation with countries outside of Russia and the Former Soviet States.	-19,719
▪ **Material Consolidation and Conversion**	
Increase reflects a higher projected availability of excess HEU to be downblended to LEU.	+1,436
▪ **National Programs and Sustainability**	
Decrease reflects the completion of most transportation and protective force upgrades to Russian sites.	-10,299
▪ **Second Line of Defense**	
Decrease in the Core program reflects the initiation of installations of radiation detection equipment in 4 new countries and additional installations in countries with ongoing cooperation in FY 2008 and offset by an increase in the Megaports program due to an increase in single RPM deployments under the Container Security Initiative.	-54,236
Total Funding Change, International Nuclear Materials Protection and Cooperation	**-194,788**

Capital Operating Expenses and Construction Summary

Capital Operating Expenses[a]

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
General Plant Projects	0	0	0
Captial Equipment	5,665	5,835	6,010
Total, Capital Equipment	**5,665**	**5,835**	**6,010**

Outyear Capital Operating Expenses

	(dollars in thousands)			
	FY 2010	FY 2011	FY 2012	FY 2013
General Plant Projects	0	0	0	0
Captial Equipment	6,190	6,376	6,567	6,764
Total, Capital Equipment	**6,190**	**6,376**	**6,567**	**6,764**

[a] Since funds are appropriated for Operations and Maintenance, which includes operating expenses, capital equipment and general plant projects, we no longer budget separately for capital equipment and general plant projects. FY 2007 and FY 2008 funding shown reflects estimates based on actual FY 2006 obligations.

Elimination of Weapons-Grade Plutonium Production

Funding Schedule by Activity

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
Elimination of Weapons-Grade Plutonium Production (EWGPP)			
Seversk Plutonium Production Elimination (SPPEP)	84,730	19,400	0
Zheleznogorsk Plutonium Production Elimination (ZPPEP)	139,024	159,140	139,282
Crosscutting and Technical Support Activities	2,000	1,400	2,017
Funds from International Contributions	5,398	0	0
Total, Elimination of Weapons-Grade Plutonium Production (EWGPP)	**231,152**	**179,940**	**141,299**

Outyear Funding Schedule

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
Elimination of Weapons-Grade Plutonium Production (EWGPP)				
Seversk Plutonium Production Elimination	0	0	0	0
Zheleznogorsk Plutonium Production Elimination	22,507	0	0	0
Crosscutting and Technical Support Activities	2,000	0	0	0
Total, Elimination of Weapons-Grade Plutonium Production	**24,507**	**0**	**0**	**0**

Description

The Elimination of Weapons-Grade Plutonium Production (EWGPP) Program enables the Russian Federation to permanently cease production of weapons-grade plutonium by replacing the heat and electricity produced by the plutonium-producing reactors allowing the reactors to be shut down.

The EWGPP Program achieves a major U.S. non-proliferation policy objective by permanently halting weapons-grade plutonium production in Russia. Within the EWGPP Program, three subprograms make unique contributions to GPRA Unit Program Goal 2.2.40.00.

The Seversk Plutonium Production Elimination Project subprogram shuts down two of the last three weapons-grade plutonium production reactors by providing heat and electricity through refurbishment of an existing 1950s fossil-fueled facility.

The Zheleznogorsk Plutonium Production Elimination Project subprogram shuts down the last weapons-grade plutonium production reactor by constructing a replacement fossil-fueled facility.

The Crosscutting and Technical Support Activities subprogram provides resources for crosscutting efforts, such as the Reactor Shutdown Project, International Participation coordination, and other various program technical support activities.

The Reactor Shutdown Project monitors the quid pro quo (QPQ) milestone schedule agreed to between U.S. and Russian Federation (RF) officials, linking the shutdown of reactor activities with the U.S. project construction activities to ensure the reactors are permanently shut down when replacement construction is completed.

Major Outyear Priorities and Assumptions

The EWGPP Program outyear funding profile totals $165,806,000 (FY 2009 through FY 2013) and supports efforts to permanently cease production of weapons-grade plutonium by replacing three plutonium-producing reactors with two fossil-fueled power plants. These plants will provide alternate sources of heat and electricity and provide for shutdown of the reactors in Russia. The decrease in the FY 2010 request is due to the completion of construction of the Zheleznogorsk plant. The program will be complete in FY 2011 when the last of the three reactors is shut down.

Program Assessment Rating Tool (PART)

The Department implemented a tool to evaluate selected programs. The PART was developed by the Office of Management and Budget (OMB) to provide a standardized way to assess the effectiveness of the Federal Government's portfolio of programs. The structured framework of PART provides a means through which programs can assess their activities differently than through traditional reviews. The EWGPP program has incorporated feedback from OMB into the FY 2009 Budget Request, and has taken or will take the necessary steps to continue to improve performance.

The OMB reassessed the EWGPP program in FY 2007, using PART. The results of the OMB review are reflected in the FY 2007 Budget Request. OMB gave the EWGPP program very high scores of 100 percent on the Strategic Planning and Program Management Sections; 80 percent on the Program Purpose and Design Section; and 84 percent on the Program Results and Accountability Section. Overall, OMB rated the EWGPP 88 percent, its highest category of “Effective”. OMB found the program has a clear and unique purpose, is well-managed, and has a demonstrated track record of achieving good progress towards its annual and long-term goals. In addition, OMB noted that the ultimate goal of the program is to shut down the three existing Russian plutonium production reactors and therefore, the program must ensure the reactors are shut down as the new coal plants are constructed. In response to the OMB findings, the NNSA is working with Russia to ensure replacement reactor construction milestones are linked to nuclear reactor shutdown and the EWGPP Program will vigorously pursue the scheduled shutdown of the two Seversk Reactors as planned by December 2008.

Annual Performance Results and Targets

(R = Results; T = Targets)

Performance Indicators	FY 2005 Results	FY 2006 Results	FY 2007 Results	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Endpoint Target
Program Goal 2.2 (Weapons of Mass Destruction) GPRA Unit Program Goal 2.2.40.00 (Elimination of Weapons-Grade Plutonium Production)										
Cumulative percentage of progress towards refurbishing a fossil plant in Seversk facilitating the shut- down of two weapons-grade plutonium production reactors (Long-term Output)	R: 25.7% T: 32%	R: 50% T: 55%	R: 73% T: 72%	T: 90%	T: 100%	N/A	N/A	N/A	N/A	By December 2008, complete refurbishment of fossil plant at Seversk.
Annual Costs Performance Index (CPI) for Seversk construction as measured by the ratio of budgeted costs of work performed to actual costs of work performed. (Efficiency)	R: 1.0 T: 1.0	R: 1.0 T: 1.0	R: 1.0 T: 1.0	T: 1.0	N/A	N/A	N/A	**N/A**	**N/A**	Annually, complete work at or below budgeted cost (CPI greater than 1.0 indicates under budget).
Cumulative percentage of progress towards constructing a fossil plant in Zheleznogorsk facilitating the shut-down of one weapons-grade plutonium production reactor. (Long-term Output)	R: 4.9% T: 4.8%	R: 11.4% T: 9.6%	R: 34.0% T: 33.6%	T: 62.6%	T: 96.4%	T: 98.0%	T: 100%	N/A	N/A	By December 2010, complete construction of fossil plant at Zheleznogorsk.
Annual percentage of Russian weapons-grade plutonium production capability eliminated from its 2003 baseline of 1.2 MT/yr (0.4 MT per reactor) (Long-term Outcome)[a]	N/A	N/A	N/A	N/A	T: 67%	T: 67%	T: 100%	N/A	N/A	By 2011, eliminate 100% of Russia's current capability to produce 1.2 MT of weapons-grade plutonium per year (0.4 MT at each of three reactors).

[a] Two reactors shutdown in December 2008 and the remaining reactor shutdown will take place in December 2010.

Detailed Justification

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
Seversk Plutonium Production Elimination	**84,730**	**19,400**	**0**

The Seversk Plutonium Production Elimination Project (SPPEP) provides for the shutdown of two of the last three weapons-grade plutonium production reactors by December 2008, by refurbishing an existing 1950s era fossil-fueled facility to provide replacement energy. The Washington Group International, Inc. remains the U.S. contractor that interfaces with the RF integrating contractor, providing technical project implementation and management support efforts, verifying the Russian work performed, and providing appropriate payments after verification.

In FY 2007, SPPEP achieved over 72 percent project completion. Specific achievements include: completion of design, significant progress towards completion of procurement and construction of three boilers, one turbine, and the Distribution Control System (DCS) Main Control Building. As a result of significant increases in labor rates, raw material costs, and the weakening of currency exchange rates, the project was rebaselined in 2007. The revised project requirements developed jointly by the RF and the U.S., will ensure the shutdown of both Seversk reactors, ADE-4 and ADE-5, thereby terminating weapons-grade plutonium production from the two reactors. Total project costs and scheduled completion date remain unchanged.

In FY 2008, the U.S. contractor will provide oversight for the project while monitoring schedule and cost compliance from the Moscow-based program management office and the field office in the Tomsk region of southern Siberia. The contractor will complete construction on the three remaining boilers, turbines, the North Heat Line, municipal and industrial heating system, and water treatment facility. The contractor will perform testing of remaining systems, with formal acceptance and turnover of the equipment to the RF. The U.S. contractor will continue to track Russian progress against the mutually agreed-to quid pro quo reactor shutdown plan, thereby terminating weapons grade-plutonium production from the two reactors.

In FY 2009, the project is scheduled for completion by the end of December 2008. The U.S. contractor will end oversight of the project following final startup and testing, formal acceptance, and turnover of the equipment to the RF. Closeout activities of the project, including final documentation, and outstanding invoices, will be accomplished during FY 2009. The RF remains committed to shutting down both reactors following completion of facility refurbishment in December 2008, and terminating weapons-grade plutonium production. Shutdown of both Seversk reactors, ADE-4 and ADE-5, will be validated by the United States.

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
Zheleznogorsk Plutonium Production Elimination	**139,024**	**159,140**	**139,282**

The Zheleznogorsk Plutonium Production Elimination Project provides for the shutdown of the last remaining weapons-grade plutonium production reactor in Russia by constructing a replacement fossil-fueled facility. Raytheon Technical Services, Inc. is the U.S. contractor that interfaces with the RF integrating contractor, providing technical project implementation and management support efforts, verifying the Russian work performed, and providing appropriate payments after verification. The project has been divided into three startup areas: Area One is the first two low-pressure boilers and related infrastructure, Area Two is the third and fourth low-pressure boilers, and Area Three is the high-pressure boiler and power generation facilities.

In FY 2007, the Zheleznogorsk Project made substantial progress. The project is currently over 34 percent complete, and over 80 percent of the equipment procurements have been awarded. In FY 2007, the project was able to complete the ash ponds, on-site railroad, foundations for the steam boiler house, structural steel for the steam boiler house, and the spray ponds. The project was able to make substantial progress on the 180m exhaust stack, boiler one installation, enclosing the steam boiler house, and construction of the coal-handling system. The project was also able to initiate work on the third start-up complex with the start of foundation work on the high-pressure boiler house. The project is currently expected to meet its December 2010 completion date on cost and schedule.

In FY 2008, the U.S. contractor will provide oversight for the project while monitoring schedule and cost compliance from the Moscow-based program management office in the Krasnoyarsk region of southern Siberia. The contractor will complete the off-site rail modifications, complete the coal-handling facility for Start-up Area One, initiate first fire in the boilers in Start-up Area One, and make significant progress on Start-up Area Two and Three. The U.S. contractor will continue to track Russian progress against the mutually agreed to quid pro quo reactor shutdown plan. By the end of FY 2008, the project will be 62.6 percent complete.

In FY 2009, the U.S. contractor will continue to provide oversight for the project, while monitoring schedule and cost compliance from the Moscow-based program management office and the field office in the Krasnoyarsk region of southern Siberia. The project will complete and commission the four boilers of Startup Areas One and Two and the project will make substantial progress on Start-up Area Three. The project will also start and complete the installation of the turbine, make substantial progress on the 240M exhaust stack, and make substantial progress toward completion of the high-pressure boiler house. The U.S. contractor will continue to track Russian progress against the mutually agreed-to quid pro quo reactor shutdown plan. By the end of FY 2009, the project will be 96.4 percent complete.

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
▪ **International Participation Contributions, Zheleznogorsk Plutonium Production Elimination**	**5,398**	**0**	**0**

The Department, received contributions of $25.5 million in FY 2005 and FY 2006 from international participants (the United Kingdom, Canada, the Netherlands, the Republic of Korea, the Republic of Finland, and New Zealand). In FY 2007, international contributions received by the Department and applied to the Zheleznogorsk Project totaled $5.4 million. The international contributions of $30.9 million received to date have been integrated into the Zheleznogorsk Project, per international agreements for the elimination of plutonium in the Russian Federation, and are part of the approved baseline.

The Department will continue to submit an Annual Report to the Congressional Defense Committees on the receipt and utilization of international funds received, as required by Section 3151 of the Bob Stump National Defense Authorization Act for Fiscal Year 2003.

Crosscutting and Technical Support Activities	**2,000**	**1,400**	**2,017**

The crosscutting and technical support activities funding provides the program with internal and external project reviews, preparation of external reporting (including reports to Congress), contract administration, intergovernmental contract negotiation support, quality assurance, foreign logistical support, and program financial management support. The crosscutting and technical support activities also provide the necessary supporting technical and engineering expertise for independent analyses of management processes, crosscutting of project management systems, and support to the Moscow Resident Officer for Construction. Other major crosscutting efforts include reactor shutdown planning and supporting close-out activities of the Seversk Project and associated post shutdown requirements for reactors ADE-4 and ADE-5, under the quid pro quo agreements with the Russian Federation. A detailed reactor shutdown plan for each site has been developed, which provides linkage between construction milestones for the power plant and shutdown of the plutonium-producing reactors.

Total, Elimination of Weapons-Grade Plutonium Production	**231,152**	**179,940**	**141,299**

Explanation of Funding Changes

	FY 2009 vs. FY 2008 ($000)
Seversk Plutonium Production Elimination	
The decrease reflects scheduled completion of construction and startup of the refurbished facilities. No new contracts are scheduled to be awarded during FY 2009 and hence no FY 2009 funds are requested since the remainder of all project funds planned for obligation to the Russian Federation for the project will be committed during FY 2008. The shutdown of the plutonium producing reactors and the refurbishment of the fossil-fuel facility at Seversk is scheduled to complete at the end-of-December 2008. U.S. will end oversight of the project following final startup and testing, formal acceptance, turnover of the equipment to the RF and verification of the cessation of plutonium production resulting from shutdown of the two Seversk reactors.	-19,400
Zheleznogorsk Plutonium Production Elimination	
The proposed decrease in the Zheleznogorsk activity reflects the slight ramp down of work as the project moves toward completion in December 2010. In FY 2009, the construction contractors will be completing of the first two of three start-up areas and commissioning the low pressured boilers. The last start-up area will be well underway with construction focusing on the high pressure boiler and power production areas. By FY 2009, most of the significant equipment procurements will have been made and the remaining funding will be focused on construction labor.	-19,858
Crosscutting and Technical Support Activities	
Increase reflects increased support for close out activities of the Seversk and Zheleznogorsk projects and associated shutdown requirements for reactors under the quid pro quo agreement.	+617
Total Funding Change, Elimination of Weapons-Grade Plutonium Production	**- 38,641**

Capital Operating Expenses and Construction Summary

Capital Operating Expenses

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
General Plant Projects	0	0	0
Captial Equipment	0	0	0
Total, Capital Equipment	**0**	**0**	**0**

Outyear Capital Operating Expenses

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
General Plant Projects	0	0	0	0
Captial Equipment	0	0	0	0
Total, Capital Equipment	**0**	**0**	**0**	**0**

Fissile Materials Disposition

Funding Schedule by Activity

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
Fissile Materials Disposition			
U.S. Surplus Fissile Materials Disposition			
Operations and Maintenance (O&M)			
U.S. Plutonium Disposition	57,415	0	0
U.S. Uranium Disposition	86,898	66,235	39,274
Supporting Activities	14,960	0	1,500
Subtotal, O&M	**159,273**	**66,235**	**40,774**
Construction	310,789	0	0
Total, U.S. Surplus FMD	**470,062**	**66,235**	**40,774**
Russian Surplus Fissile Materials Disposition (FMD)			
Russian Materials Disposition	0	0	1,000
Total, Fissile Materials Disposition	**470,062**	**66,235**	**41,774**

Outyear Funding Schedule

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
Fissile Materials Disposition				
U.S. Surplus Fissile Materials Disposition	36,691	26,985	27,435	25,000
Construction	0	0	0	0
Russian Surplus Fissile Materials Disposition	1,000	1,000	1,000	1,000
Total, Fissile Materials Disposition	**37,691**	**27,985**	**28,435**	**26,000**

Description

The program goal is to eliminate surplus Russian plutonium and surplus United States (U.S.) plutonium and highly enriched uranium.

Within the Fissile Materials Disposition Program, two subprograms each make unique contributions to GPRA Unit Program Goal 2.2.43.00.

U.S. Plutonium Disposition – The FY 2008 Consolidated Appropriations Act (P.L. 110-161) moved funding for the Mixed Oxide Fuel Fabrication Facility from the Defense Nuclear Nonproliferation Fissile Materials Disposition program to the Department of Energy's Nuclear Energy appropriation and funding for the Pit Disassembly and Conversion Facility/Waste Solidification Building projects to NNSA's Weapons Activities, Directed Stockpile Work program.

*U.S. Uranium Disposition*NNSA is also responsible for disposing of U.S. highly enriched uranium (HEU) that has been declared surplus to defense needs primarily by down-blending it into low enriched uranium (LEU). Once down-blended, the material can no longer be used for nuclear weapons. To the extent practical, the program seeks to recover the economic value of the material by using the resulting LEU as nuclear reactor fuel. Three separate disposition activities (Off-Specification HEU Blend-Down, Reliable Fuel Supply, and Research Reactor Fuel) are currently being implemented and additional projects are being planned. HEU disposition projects are expected to result in eventual payments to the Treasury of over one billion dollars, based on current market prices.

Significant Program Shifts
The FY 2008 Consolidated Appropriations Act (P.L. 110-161) moved funding for the Mixed Oxide Fuel Fabrication Facility (MFFF) from the Defense Nuclear Nonproliferation Fissile Materials Disposition program to DOE's Nuclear Energy program and funding for the Pit Disassembly and Conversion Facility (PDCF)/Waste Solidification Building (WSB) projects to NNSA's Weapons Activities, Directed Stockpile Work program.

Major Out Year Priorities and Assumptions
The funding profile for the U.S. Uranium Disposition is declining in the future because the large tranches of surplus HEU are already disposed of or in the pipeline, and the future supply of HEU for disposition (from dismantlements and Naval Reactors rejects) will be at a much lower rate. The HEU program depends on the continuing ability to pay for commercial downblending services by transferring title to a portion of the resulting low-enriched uranium to the contractors.

Program Assessment Rating Tool (PART)
The Department implemented a tool to evaluate selected programs. The PART was developed by the Office of Management and Budget (OMB) to provide a standardized way to assess the effectiveness of the Federal Government's portfolio of programs. The structured framework of the PART provides a means through which programs can assess their activities differently than through traditional reviews. The FMD program has incorporated feedback from the OMB into the FY 2009 Budget Request, and has taken or will take the necessary steps to continue to improve performance.

The results of the OMB review are reflected in the FY 2008 Budget Request. The OMB gave the FMD program scores of 100 percent on the Program Purpose and Design, and Strategic Planning Sections; 90 percent on the Program Management Section; and 50 percent on the Program Results and Accountability Section. Overall, the OMB rated the FMD program 73 percent, the second highest rating of "Moderately Effective." The OMB assessment found that the program demonstrates proper planning and management, but performance results are limited and program cost and schedule performance is mixed. The OMB also found that the FMD program follows agency project management requirements. In response to the OMB findings, the FMD program is validating project cost and schedule baselines to measure performance and maintain change control during construction, and completing certification of project control systems by the responsible federal agency to ensure accurate performance measurement.

Annual Performance Results and Targets

(R = Results; T= Targets)

Performance Indicators	FY 2005 Results	FY 2006 Results	FY 2007[a] Results	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Endpoint Target
Program Goal 2.2 (Weapons of Mass Destruction) GPRA Unit Program Goal 2.2.43.00 (Fissile Materials Disposition)										
Cumulative percentage of the design, construction, and cold start-up activities completed for the Mixed Oxide (MOX) Fuel Fabrication Facility (Long-term Output)[d]	R:13% T: 13%	R: 17% T: 17%	R: 24% T: 24%	T: 30%	T: 39%	T: 49%	T: 62%	T: 77%	T:89%	By 2016, complete design, construction, and cold start-up activities for the MOX Facility.
Cumulative percentage of the design, construction, and cold start-up activities completed for the Pit Disassembly and Conversion Facility (PDCF) (Long-term Output) [d]	R: 24% T: 24%	R: 24% T: 24%	R: 18% T: 18%	T:22%[b]	T: 20%[b]	T: 24%	T: 31%	T: 39%	T: 48%	By 2018, complete design, construction, and cold start-up activities for the PDCF.
Cumulative percentage of the design, construction, and cold start-up activities completed for the Waste Solidification Building (WSB) (Long-term Output)[c d]					T:33%	T: 50%	T: 75%	T:90%	T:100%	By 2013, complete design, construction, and cold start-up activities for the WSB.
Cumulative amount of surplus U.S. highly enriched uranium (HEU) down-blended or shipped for down-blending (Efficiency)	R: 82 MT T: 82 MT	R: 93 MT T: 93 MT	R: 103MT T: 103MT	T: 112 MT	T: 119 MT	T: 122 MT	T: 125 MT	T: 128 MT	T: 130 MT	By 2050, complete disposition of 217 MT of surplus HEU

[a] Prior to FY 2007, annual MOX and PDCF performance was derived by multiplying the percent complete for a project phase (R&D, design, construction) by an associated weighting factor. Starting in FY 2007, percent completion is measured by the earned value (budgeted cost of work performed) expressed as a percent of the Total Project Cost.

[b] FY 2007 and FY 2008 targets for PDCF are not directly comparable as they reflect results measured against the previous estimated PDCF baseline of $2.45 billion versus the current preliminary estimate. FY 2009 and the out-year targets are based on an "estimated" Total Project Cost (TPC) baseline that is expected to be finalized in FY 2008.

[c] For the WSB, FY 2009 and the out-year targets are based on an “estimated” TPC baseline that is expected to be finalized in FY 2008. Design activities for the WSB were suspended in 2004 due to delays in the overall plutonium disposition program arising from uncertainties concerning the Russian plutonium disposition program but were subsequently resumed in October 2006. Therefore, targets will not be established prior to FY 2009.

[d] All funding for the MFFF is funded within the Nuclear Energy program starting in FY 2008. Funding associated with PDCF and the WSB is funded within the NNSA Weapons Activities, Directed Stockpile Work program starting in FY 2008.

Detailed Justification

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
U.S. Surplus Fissile Materials Disposition (O&M)	**159,273**	**66,235**	**40,774**
▪ **U.S. Plutonium Disposition**	**57,415**	**0**	**0**
• **MOX Irradiation, Feedstock, and Transportation (formerly MOX Fuel Utilization Technology)**	**20,300**	**0**	**0**

MOX Irradiation, Feedstock, and Transportation funding is provided within the Nuclear Energy program starting in FY 2008 (FY 2009: $18,750,000).

• **MOX Other Project Cost Activities (OPC)**	**915**	**0**	**0**

MOX Other Project Cost Activities support project activities such as management oversight, design reviews, facility start-up testing and licensing. Funding is provided within the Nuclear Energy program starting in FY 2008 (FY 2008: $47,068,000 and FY 2009: $50,000,000).

• **Pit Disassembly and Conversion Facility (PDCF) (OPC)**	**31,700**	**0**	**0**

In FY 2008 and FY 2009 PDCF funding is budgeted within the Weapons Activities, Directed Stockpile Work program (FY 2008: $7,664,000 and FY 2009: $32,518,000).

• **Waste Solidification Building (WSB) (OPC)**	**4,500**	**0**	**0**

In FY 2008 and FY 2009 WSB funding is budgeted within the Weapons Activities, Directed Stockpile Work program (FY 2008 and FY 2009: $5,000,000).

▪ **U.S. Uranium Disposition**	**86,898**	**66,235**	**39,274**

This funding supports the disposition of U.S. HEU that has been declared surplus, primarily by down-blending it to low enriched uranium (LEU). Three separate disposition activities are on-going, and additional projects are being planned as materials become available from anticipated weapon dismantlements. FY 2009 activities include:

- Off-Specification HEU Blend-Down Project: Complete HEU metal shipments from the Y-12 Plant to Nuclear Fuel Services (NFS) for down-blending and subsequent use in Tennessee Valley Authority (TVA) nuclear reactors.

(dollars in thousands)

FY 2007	FY 2008	FY 2009

- Reliable Fuel Supply Project: Continue shipments of 17.4 MT of HEU to NFS for down-blending. The goal is to have approximately 16 MT of the 17.4 MT shipped for down blending by September 2009. The resulting LEU will be used to create a Reliable Fuel Supply for countries that are not pursuing their own uranium enrichment and reprocessing technologies.

- Research Reactor Fuel Project: Continue down-blending HEU to LEU for use as fuel for foreign research reactors as part of the Reduced Enrichment for Research and Test Reactors program.

- Planning for Additional Projects: Prepare plans, 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.

▪ **Supporting Activities**	**14,960**	**0**	**1,500**
• **Surplus Plutonium Storage and Transportation**	**8,255**	**0**	**0**

FY 2008 and FY 2009 funding is budgeted within the Weapons Activities, Directed Stockpile Work program (FY 2009: $11,592,000).

• **NEPA**	**200**	**0**	**0**

FY 2008 and FY 2009 funding is budgeted within the Weapons Activities, Directed Stockpile Work program (FY 2009: $500,000).

• **Common Technologies and Integration**	**6,505**	**0**	**1,500**

Supporting Activities: The increase supports monitoring and inspection activities and contractor technical support efforts at the program level or common to all projects. Funding related to U.S. plutonium disposition has been transferred to the Weapons Activities appropriation ($2,495,000) and the Nuclear Energy program ($450,000).

Construction	**310,789**	**0**	**0**
▪ **99-D-141-01, Pit Disassembly and Conversion Facility (PDCF)**	**32,789**	**0**	**0**

FY 2008 and FY 2009 funding is budgeted within the Weapons Activities, Directed Stockpile Work program (FY 2008: $22,447,000 and FY 2009: $26,890,000).

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
▪ **99-D-141-02 Waste Solidification Building (WSB)**	**15,500**	**0**	**0**
FY 2008 and FY 2009 funding is budgeted within the Weapons Activities, Directed Stockpile Work program (FY 2008: $33,600,000 and FY 2009: $40,000,000).			
▪ **99-D-143, MOX Fuel Fabrication Facility (MFFF)**	**262,500**	**0**	**0**
Funding is provided within the Nuclear Energy program starting in FY 2008 (FY 2008: 231,721,000 and FY 2009: $417,808,000).			
Russian Surplus Fissile Materials Disposition (funds spent in the U.S.)	**0**	**0**	**1,000**
Total, Fissile Materials Disposition	**470,062**	**66,235**	**41,774**

Explanation of Funding Changes

	FY 2009 vs. FY 2008 ($000)
U.S. Surplus Fissile Materials Disposition	
▪ **U.S. Uranium Disposition:** The decrease reflects the completion of packaging, sampling and handling activities associated with the 17 MT Reliable Fuel Supply project.	-26,961
▪ **Supporting Activities:** The increase supports monitoring and inspection activities and contractor technical support efforts.	+1,500
Total, U.S. Fissile Materials Disposition (O&M)	**-25,461**
Russian Surplus Fissile Materials Disposition	
▪ **U.S. Support for Russian Plutonium Disposition (funds spent in the U.S.)**	+1,000
The majority of prior year balances will be used to support work in Russia, the slight increase reflects the funding necessary to provide adequate technical oversight by U.S. laboratories and contractors in FY 2009.	
Total, Russian Fissile Materials Disposition	**+1,000**
Total Funding Change, Fissile Materials Disposition	**- 24,461**

Capital Operating Expenses and Construction Summary

Capital Operating Expenses[a]

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
General Plant Projects	2,122	2,186	2,252
Captial Equipment	973	1,002	1,032
Total, Capital Equipment	**3,095**	**3,188**	**3,284**

Outyear Capital Operating Expenses

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
General Plant Projects	2,320	2,390	2,462	2,536
Capital Equipment	1,063	1,095	1,128	1,162
Total, Capital Equipment	**3,383**	**3,485**	**3,590**	**3,698**

Construction Projects

(dollars in thousands)

	Total Estimated Cost (TEC)	Prior Year Appro-priations	FY 2007	FY 2008	FY 2009	Unappro-priated Balance
99-D-141-01, Pit Disassembly Conversion Facility (PDCF) [b]	TBD	192,039	32,789	0	0	
99-D-141-02, Pit Disassembly Conversion Facility (WSB) [b]	195,469	10,649	15,500	0	0	
99-D-143, MOX Fabrication Facility [c]	3,938,628	1,167,560	262,500	0	0	
Total, Construction		**1,370,248**	**310,789**	**0**	**0**	

Outyear Construction Projects

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
99-D-141-01, Pit Disassembly Conversion Facility (PDCF)	0	0	0	0
99-D-141-02, Pit Disassembly Conversion Facility (WSB)	0	0	0	0
99-D-143, MOX Fabrication Facility	0	0	0	0
Total, Construction	**0**	**0**	**0**	**0**

[a] Funds are appropriated for Operations and Maintenance, which includes operating expenses, capital equipment and general plant projects, and are no longer budgeted for separately for capital equipment and general plant projects. FY 2008 and FY 2009 funding shown reflects estimates based on projected FY 2007 obligations.

[b] Funded in the Weapons Activities, Directed Stockpile Work program starting in FY 2008.

[c] Funded in the DOE Nuclear Energy program starting in FY 2008.

Global Threat Reduction Initiative (GTRI)

Funding Schedule by Activity [a] [b]

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
Global Threat Reduction Initiative			
HEU Reactor Conversion	**32,096**	**33,819**	**49,300**
Nuclear and Radiological Material Removal			
Russian Research Reactor Fuel Return (RRRFR)	30,025	38,896	0
U.S. Foreign Research Reactor Spent Nuclear Fuel (FRRSNF)	6,340	9,887	0
Emerging Threats and Gap Materials	5,683	5,466	0
U.S. Radiological Threat Reduction (USRTR)	9,441	13,510	0
Russian-Origin Nuclear Material Removal	0	0	39,200
U.S.-Origin Nuclear Material Removal	0	0	4,300
Gap Nuclear Material Removal	0	0	40,721
Emerging Threats Nuclear Material Removal	0	0	2,000
International Radiological Material Removal	0	0	16,000
Domestic Radiological Material Removal	0	0	14,400
Subtotal, Nuclear and Radiological Material Removal	**51,489**	**67,759**	**116,621**
Nuclear and Radiological Material Protection			
Kazakhstan Spent Fuel	17,934	43,098	0
Global Research Reactor Security	1,000	3,557	0
International Radiological Threat Reduction (IRTR)	26,976	44,992	0
BN-350 Nuclear Material Protection	0	0	19,800
International Material Protection	0	0	8,420
Domestic Material Protection	0	0	25,500
Subtotal, Nuclear and Radiological Material Protection	**45,910**	**91,647**	**53,720**
Funds from International Contributions	**1,739**	**0**	**0**
Total, Global Threat Reduction Initiative	**131,234**	**193,225**	**219,641**

[a] Includes the funding from the FY 2007 Supplemental Act (P.L. 110-28) for Kazakhstan Spent Fuel in FY 2007 in the amount of $14,000,000 and for International Radiological Threat Reduction (IRTR) in FY 2008 in the amount of $20,000,000.

[b] Includes the international contributions from Canada of $1,738,800 in FY 2007 for International Radiological Threat Reduction (IRTR) work.

Outyear Funding Schedule

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
Global Threat Reduction Initiative				
HEU Reactor Conversion	**40,100**	**53,400**	**62,000**	**55,000**
Nuclear and Radiological Material Removal				
Russian-Origin Nuclear Material Removal	34,900	30,000	29,000	28,000
U.S.-Origin Nuclear Material Removal	2,000	2,000	2,000	5,500
Gap Nuclear Material Removal	15,199	5,974	1,972	1,052
Emerging Threats Nuclear Material Removal	2,000	2,000	2,000	2,000
International Radiological Material Removal	16,000	16,000	16,000	10,000
Domestic Radiological Material Removal	15,700	15,400	15,700	16,000
Subtotal, Nuclear and Radiological Material Removal	**85,799**	**71,374**	**66,672**	**62,552**
Nuclear and Radiological Material Protection				
BN-350 Nuclear Material Protection	4,800	1,000	1,000	0
International Material Protection	11,300	22,100	27,500	37,900
Domestic Material Protection	8,300	13,200	16,000	22,000
Subtotal, Nuclear and Radiological Material Protection	**24,400**	**36,300**	**44,500**	**59,900**
Total, Global Threat Reduction Initiative	**150,299**	**161,074**	**173,172**	**177,452**

Description

The Global Threat Reduction Initiative (GTRI) mission is to reduce and protect vulnerable nuclear and radiological materials located at civilian sites worldwide.

GTRI helps the Department of Energy achieve its Nuclear Security Goal (2.2.44.00) to prevent the acquisition of nuclear and radiological materials for use in weapons of mass destruction (WMD) and other acts of terrorism by: 1) converting research reactors from the use of WMD-usable highly enriched uranium (HEU) fuel to low enriched uranium (LEU); 2) removing or disposing of excess WMD-usable nuclear and radiological materials; and 3) protecting at-risk WMD-usable nuclear and radiological materials from theft and sabotage.

GTRI directly addresses recommendations of the bipartisan 9/11 Commission, is a vital part of the President's March 2006 *National Security Strategy of the United States of America*, and is an important element of the President's July 2006 *Global Initiative to Combat Nuclear Terrorism.*

The three key subprograms of GTRI –Convert, Remove, and Protect—provide a comprehensive approach to denying terrorists access to nuclear and radiological materials. The GTRI subprograms that make important and unique contributions to GPRA Unit Program Goal 2.2.44.00 are discussed below.

The **HEU Reactor Conversion** subprogram supports the conversion of domestic and international civilian research reactors and isotope production facilities from the use of WMD-usable HEU fuel to LEU fuel. These efforts result in permanent threat reduction because the use of WMD-usable HEU in the civilian fuel cycle is minimized or eliminated. This subprogram includes assisting reactor operators perform feasibility studies and safety analyses required for regulatory approval to convert, procuring LEU replacement fuels, developing and qualifying new high-density U-Mo LEU fuel to convert high performance reactors, and supporting the development of a U-Mo LEU fuel fabrication capability to produce the new high-density fuel.

The **Nuclear and Radiological Material Removal** subprogram supports the removal or disposal of excess WMD-usable nuclear and radiological materials from civilian sites worldwide. These efforts result in permanent threat reduction because WMD-usable material theft targets are eliminated. This subprogram includes:

- Repatriating Russian-origin HEU fresh and spent fuel from Russian-designed research reactors worldwide to Russia.

- Repatriating U.S.-origin HEU and LEU spent nuclear fuel from TRIGA and MTR research reactors and HEU target material to the United States

- Addressing Gap nuclear materials by removing or verifying the disposal of vulnerable nuclear materials that are not covered under the Russian-origin and U.S.-origin nuclear remove activities. This could include: U.S.-origin HEU beyond TRIGA, MTR, and target materials; HEU of non-U.S.- and non-Russian-origin; and separated plutonium and plutonium-bearing materials.

- Addressing emerging threats by developing the capability to denuclearize rapidly a country and remove all of its HEU and plutonium. This includes in-country stabilization, packaging and removal of nuclear materials through independent, self-sufficient operations and the identification and training of rapid response teams to ensure that when opportunities present themselves (e.g. Libya in 2004), the United States is able to respond quickly and efficiently.

- Removing international radiological materials by recovering and permanently disposing of excess and abandoned radiological material overseas. This includes Russian radioisotopic thermoelectric generators (RTGs), U.S.-origin sealed sources in other countries, and other orphaned radiological materials.

- Removing domestic radiological materials by working in cooperation with Federal, State, and local agencies, and private industry to recover and permanently dispose of excess radiological sources in the United States.

The **Nuclear and Radiological Material Protection** subprogram supports the protection of at-risk WMD-usable nuclear and radiological materials worldwide from theft and sabotage until a more permanent threat reduction solution can be implemented. These efforts result in threat containment because WMD-usable materials are protected from theft and sabotage. This subprogram includes:

- Protecting nuclear materials by providing safe and secure long-term storage of the nearly three tons of weapons-grade plutonium and ten tons of HEU in spent fuel from the shutdown BN-350 fast breeder reactor in Kazakhstan.

- Protecting international materials by working in cooperation with foreign counterparts and international agencies to install security upgrades on high-priority, vulnerable nuclear and radiological material located at civilian sites overseas.

- Protecting domestic materials by working in 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.

Major FY 2007 Achievements
Through the end of FY 2007, GTRI accelerated threat reduction efforts by: 1) converting or verifying the shutdown of a cumulative 55 research reactors from use of HEU fuel to LEU fuel; 2) removing a cumulative 1,791 kilograms of HEU and plutonium, enough material to make more than 70 crude nuclear bombs; 3) removing more than a cumulative 15,500 radiological sources in the United States containing enough material for over 1,500 radiological dirty bombs; and 4) protecting a cumulative 600 radiological sites around the world containing enough material for more than 9,100 radiological dirty bombs.

Major Outyear Priorities and Assumptions
The outyear budget projections (FY 2009 through FY 2013) for GTRI total $881,638,000. By 2013, GTRI is on-schedule to complete the BN-350 long-term secure storage project in Kazakhstan, complete the Bratislava-related Russian and U.S. HEU removal commitments, complete the removal and disposition of Russian RTGs in accordance with the joint Action Plan, and complete the research reactor conversions that are part of the U.S. commitment to the Security and Prosperity Partnership. By 2013, GTRI also will complete the recovery of all high risk, vulnerable Gap nuclear materials, the development and qualification of new, high-density U-Mo LEU fuel, and begin and complete the development of a new U-Mo fuel fabrication capability to produce the new high-density fuel. GTRI will greatly accelerate and expand efforts to install security upgrades on high-priority nuclear and radiological materials located at international and domestic civilian sites.

Program Assessment Rating Tool (PART)
The Department implemented a tool to evaluate selected programs. The PART was developed by the Office of Management and Budget (OMB) to provide a standardized way to assess the effectiveness of the Federal Government's portfolio of programs. The structured framework of the PART provides a means through which programs can assess their activities differently than through traditional reviews. The GTRI program has incorporated feedback from the OMB into the FY 2009 Budget Request, and has taken or will take the necessary steps to continue to improve performance.

The results of the OMB review of the GTRI program are reflected in the FY 2008 Budget Request. OMB gave the GTRI scores of 100 percent on the Program Purpose and Design, Strategic Planning, and Program Management Sections; and 74 percent on the Program Results and Accountability Section. Overall, the OMB rated the GTRI program 87 percent, its highest category of “Effective.” The OMB found that GTRI has a strong record of reducing and protecting vulnerable nuclear and radiological material located at civilian sites worldwide, and has dramatically accelerated progress towards achieving its long-term threat reducing goals. In response to the OMB findings, the GTRI program is integrating several existing stand alone management systems into one project management information system to reduce data redundancy and increase data integrity and reporting efficiency.

Performance Results and Targets

(R = Results; T = Targets)

Performance Indicators	FY 2005 Results	FY 2006 Results	FY 2007 Results	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Endpoint Target
Program Goal 2.2 (Weapons of Mass Destruction) GPRA Unit Program Goal 2.2.44.00 (Global Threat Reduction Initiatives)										
Cumulative HEU reactors converted or shutdown	R: 41 T: 44	R: 45 T: 46	R: 55 [a] T: 53	T: 61	T: 69	T: 77	T: 84	T: 96	T: 102	By 2018, convert to LEU 129 of 207 HEU reactors. *(The IAEA identified 207 reactors designed to operate on HEU fuels. These reactors average 5 kgs of HEU per reactor to operate. LEU fuel exists or is being developed which will allow 129 of these 207 reactors to be converted thus minimizing the use of HEU in civilian applications.)*
Cumulative kilograms of nuclear material (HEU and plutonium) removed or disposed	R: 1,105 T: N/A	R: 1,366 T: N/A	R: 1,791 T: 1,671	T: 2,175	T: 2,870	T: 4,700	T: 4,750	T: 4,800	T: 4,850	By 2015, remove or dispose of 4,917 kgs of nuclear material (HEU and plutonium) from civilian sites (enough for 180 nuclear weapons). *(There are additional nuclear materials located at civilian sites that are NOT targeted for removal because they have an acceptable disposition path and/or they are in secure locations. GTRI will continue to remove U.S.-origin LEU from foreign research reactors until 2019 as an incentive for converting research reactors from HEU to LEU fuels.)*
Cumulative U.S. radiological sources removed or disposed	R: 11,788 T: 11,500	R: 13,901[b] T: 13,650	R:15,503 T: 15,455	T: 17,750	T: 20,000	T: 22,250	T: 24,260	T: 25,760	T: 27,095	By 2020, remove 31,700 excess U.S. radiological sources totaling ~450,000 curies (enough for 2,255 radiological dirty bombs). *(GTRI expects there to be a Greater Than Class C waste disposal facility by 2015.)*

[a] The program has changed the methodology for accounting for cumulative research reactors starting in FY 2007. The metric now includes converted research reactors and research reactors shutdown prior to conversion. The comparable number for FY 2006 using the new methodology would be 47 reactors converted or shutdown.

[b] The program has changed the methodology for accounting for sources recovered starting in FY 2007. The metric now includes only U.S. domestic sources; previously, the number included a small number of international sources recovered. The comparable number for FY 2006 using the new methodology would be 13,878.

Performance Indicators	FY 2005 Results	FY 2006 Results	FY 2007 Results	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Endpoint Target
Cumulative high priority international radiological sites protected.	R: 234 T: 174	R: 500 T : 498	R: 599 T: 590	T:790	T:915	T: 1,050	T: 1,260	T: 1,480	T: 1,680	By 2022, protect 3,300 high priority radiological sites totaling ~45,000,000 curies (enough for 45,000 radiological dirty bombs). *(The IAEA estimates that there are millions of radiological sources located at tens of thousands of civilian sites worldwide. These radioactive sources are used for medical, industrial, and other commercial purposes and range from a fraction of a curie up to 10,000,000 curies each. GTRI has focused on protecting ~3,300 vulnerable sites located in Other Than High Income countries that store sources of 1,000 curies or greater and that are near U.S. strategic interests overseas.)*
Cumulative funds to support threat reduction work contracted directly with the private sector	R: N/A T: N/A	R: N/A T: N/A	R: $0.13M T: $1M	T: $3M	T: $12M	T: $26M	T: $50M	T: $80M	T: $100M	By 2013, directly contract with the private sector for $100M worth of threat reduction services that will save ~$4M in overhead costs if the work was sub-contracted through the labs.

Detailed Justification

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
HEU Reactor Conversion	**32,096**	**33,819**	**49,300**

This activity supports the conversion of research reactors and isotope production facilities from the use of WMD-usable HEU fuel to LEU fuel by developing technologies needed to substitute LEU for HEU in research and test reactors and medical isotope production processes, including the development of LEU fuels and advanced high density LEU fuels, the development of a new U-Mo fuel fabrication capability to produce the new high-density fuel, assistance to reactor operators in performing feasibility studies and safety analyses required for regulatory approval to convert, and actual conversion of research and test reactors from using HEU.

In FY 2009, GTRI will accelerate research reactor conversion efforts to achieve an additional 8 domestic and foreign reactor conversions, bringing the cumulative total converted or shutdown to 69. The conversions identified for FY 2009 are for facilities in Hungary, the United States (Zero Power Research Reactor, Neutron Radiography Reactor, University of Wisconsin), Ukraine, United Kingdom, Bulgaria, and France, as well as continuing conversion analysis and regulatory approval efforts. GTRI will also accelerate development of the new high density LEU fuel through additional post-irradiation examinations of tests conducted in FY 2008 and new tests required for qualification of the high-density LEU fuel, and fabricate and initiate irradiation of high-density LEU fuel elements for international demonstration. GTRI will complete preliminary design work for a new fuel fabrication capability.

Nuclear and Radiological Material Removal	**51,489**	**67,759**	**116,621**
Russian Research Reactor Fuel Return	*30,025*	*38,896*	*0*
Russian-Origin Nuclear Material Removal	*0*	*0*	*39,200*

This activity supports the removal or disposal of excess WMD-usable nuclear materials by repatriating Russian-origin HEU fresh and spent fuel from Russian-designed research reactors worldwide to Russia.

In FY 2009, GTRI will repatriate or dispose of an additional 400 kilograms of HEU fuel from Libya, Poland, Belarus, Romania, and Ukraine, resulting in a cumulative total of 1,224 kilograms of HEU removed, enough for about 48 nuclear bombs, and accelerate high-priority shipments for Hungary and Serbia in the post FY 2009 timeframe.

U.S. Foreign Research Reactor Spent Nuclear Fuel	*6,340*	*9,887*	*0*
U.S.-Origin Nuclear Material Removal	*0*	*0*	*4,300*

This activity supports the removal or disposal of excess WMD-usable nuclear materials by repatriating U.S.-origin HEU and LEU spent nuclear fuel from TRIGA and MTR research reactors and HEU target material to the United States or by validating the alternate disposition of such material.

In FY 2009, GTRI will return to the United States an additional 42 kilograms of HEU from South Africa, Taiwan, Australia, and Canada, resulting in a cumulative total of 1,237 kilograms of HEU removed, enough for about 49 nuclear bombs.

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
Emerging Threats and Gap Materials	*5,683*	*5,466*	*0*
Gap Nuclear Material Removal	*0*	*0*	*40,721*

This activity supports the removal or disposal of excess WMD-usable nuclear materials worldwide by addressing those nuclear materials that are not covered by the Russian-origin and U.S.-origin Nuclear Material Removal activities and could include: U.S.-origin HEU beyond TRIGA, MTR, and target materials; HEU of non-U.S.- and non-Russian-origin, and separated plutonium and plutonium-bearing materials.

In FY 2009, GTRI will remove an additional 253 kilograms of Gap HEU and plutonium from Australia, South Africa, Japan, Canada, and Italy, resulting in a cumulative total of 410 kilograms of HEU and plutonium removed, enough for about 18 nuclear bombs.

Emerging Threats Nuclear Material Removal	*0*	*0*	*2,000*

This activity supports the removal or disposition of WMD-usable nuclear material worldwide by providing the capability to denuclearize rapidly a country of concern. Efforts include in-country stabilization, packaging, and removal of nuclear materials through independent, self-sufficient operations and identification and training of rapid response teams to ensure that when opportunities present themselves (e.g. Libya in 2004), the United States is able to respond quickly and efficiently.

In FY 2009, GTRI will continue equipment procurement, training of rapid response teams, and field testing. Additional efforts over the long term address staging of support materials, and development, testing, and analysis of deployment procedures. The program seeks to maintain a short-term readiness posture to deploy rapidly assets to assist in recovery of nuclear materials. In addition, the program provides life-cycle replacement of equipment to maintain state-of-the-art technical capability.

International Radiological Material Removal	*0*	*0*	*16,000*

This activity supports the removal or disposal of excess WMD-usable radiological materials in other countries by recovering and disposing of excess Russian radioisotopic thermoelectric generators (RTGs), U.S.-origin sealed sources in other countries, and other orphan source radiological materials.

In FY 2009, GTRI will complete the removal of an additional 80 RTGs, resulting in a cumulative total of over 300 RTGs removed by GTRI through direct funding and international contributions (e.g. Canada). Other countries will have recovered about 200 RTGs. A joint U.S.-Russian RTG Action Plan has been developed that addresses the recovery and disposal of all remaining RTGs by 2015.

U.S. Radiological Threat Reduction	*9,441*	*13,510*	*0*
Domestic Radiological Material Removal	*0*	*0*	*14,400*
(Homeland Security)			

This activity supports the removal or disposal of domestic radiological materials by working in cooperation with Federal, State, and local agencies, and private industry to recover and permanently dispose of excess radiological sources in the United States.

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009

In FY 2009, GTRI will remove an additional 2,250 excess and unwanted sealed sources from locations in the United States, containing about 36,000 curies, resulting in a cumulative total of 20,000 excess sealed sources removed, containing enough material for more than 1,700 radiological dirty bombs.

Nuclear and Radiological Material Protection	**45,910**	**91,647**	**53,720**
Kazakhstan Spent Fuel	*17,934*	*43,098*	*0*
BN-350 Nuclear Material Protection	*0*	*0*	*19,800*

This activity supports the protection of vulnerable WMD-usable nuclear materials from theft and sabotage until a more permanent threat reduction solution can be implemented by providing safe and secure long-term storage of the nearly three tons of weapons-grade plutonium and ten tons of HEU in spent fuel from the shutdown BN-350 fast breeder reactor in Kazakhstan.

In FY 2009, GTRI will complete the construction of the Transfer Facility at Kurchatov, complete the loading of all 60, 100-ton casks at Aktau, and begin the final shipments from Aktau to Baikal.

Global Research Reactor Security	*1,000*	*3,557*	*0*
International Radiological Threat Reduction	*26,976*	*44,992*	*0*
International Material Protection	*0*	*0*	*8,420*

This activity supports the protection of vulnerable WMD-usable nuclear and radiological materials from theft and sabotage until a more permanent threat reduction solution can be implemented by working in cooperation with foreign counterparts and international agencies to install security upgrades on high-priority, vulnerable nuclear and radiological material located at civilian sites overseas.

In FY 2009, GTRI will complete security upgrades at an additional 45 research reactor and radiological sites, resulting in a cumulative total of 608 international sites secured. Base efforts will continue to support the sustainability of previously upgraded sites in over 42 countries.

Domestic Material Protection	*0*	*0*	*25,500*

(Homeland Security)

This activity supports the protection of vulnerable WMD-usable nuclear and radiological materials from theft and sabotage until a more permanent threat reduction solution can be implemented by working in cooperation with Federal, State, and local agencies, and private industry to install security upgrades on high-priority nuclear and radiological material located at civilian sites in the United States.

In FY 2009, GTRI will accelerate domestic protection activities at research and test reactors (RTR) and at sites containing more than 1,000 curies of dangerous radioactive materials by completing security upgrades at an additional 10 domestic research and test reactors and an additional 48 radiological sites, resulting in a cumulative total of 70 domestic sites secured. In addition, GTRI will investigate alternative radiological technologies to further reduce or eliminate the risk of radiological materials being used in a dirty bomb. Such alternatives encompass: 1) identifying non-radiological solutions to replace the need for radiological materials in some applications, 2) identifying less-dangerous solutions

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009

for using radiological materials (e.g., use of shorter half-life, less-radioactive isotopes), and 3) designing more security features (such as delay) directly into the devices that use the radiological material to increase inherent protection.

Funds from International Contributions	**1,739**	**0**	**0**

Section 3113 of the John Warner National Defense Authorization Act for FY 2007 authorized the Department of Energy to receive and use financial contributions, including from foreign governments, for programs with the Global Threat Reduction Initiative (GTRI).

In FY 2007, NNSA received contributions of $1.7 million from Canada to recover, replace, and remove ten Russian Radioisotopic Thermoelectric Generators (RTGs) as part of International Radiological Material Removal efforts.

Total, Global Threat Reduction Initiative	**131,234**	**193,225**	**219,641**

Explanation of Funding Changes

	FY 2009 vs. FY 2008 ($000)
▪ **HEU Reactor Conversion**	
Reflects an increase of $5,481,000 to increase reactor conversions from 6 in FY 2008 to 8 in FY 2009; reflects an increase of $3,000,000 to complete irradiation tests required for high-density LEU fuel qualification and to initiate international demonstration/irradiation of the high-density LEU; and, reflects an increase of $7,000,000 to complete CD-2 for a new fuel fabrication capability to produce the new high-density fuel.	+15,481
▪ **Nuclear and Radiological Material Removal**	
Reflects an increase of $16,000,000 for the transfer of the Russian RTG activities from the Protection subprogram to the Removal subprogram to better reflect the permanent threat reduction nature of the work accomplished; reflects an increase of $37,255,000 in Gap Nuclear Material Removal activity to increase removals from 55 kilograms in FY 2008 to 253 kilograms in FY 2009, including the removal and disposition of South African HEU spent fuel; reflects an increase of $304,000 in Russian-origin Nuclear Material Removal activity to increase from 315 kilograms in FY 2008 to 400 kilograms in FY 2009; reflects a decrease of $5,587,000 in U.S.-origin nuclear material removal due to an increase in shipments from high-income economy countries that pay for their fuel returns; reflects an increase of $890,000 in the Domestic Radiological Material Removal activity because of more complex and difficult radiological removals.	+48,862
▪ **Nuclear and Radiological Materials Protection**	
Reflects a decrease of $16,000,000 for the transfer of the Russian RTG activities from the Protection subprogram to the Removal subprogram to better reflect the permanent threat reduction nature of the work accomplished; reflects a decrease of $23,298,000 in the BN-350 Nuclear Material Protection activity due to completion of the procuring the majority of sixty, 100-ton casks in FY 2008; and reflects a decrease of $9,959,000 in international material protection activity for a shift in focus to high priority Domestic Material Protection activity, which increases by $11,330,000 for an increase in domestic sites secured from 9 in FY 2008 to 58 in FY 2009.	-37,927
Total Funding Change, Global Threat Reduction Initiative	**+26,416**

Capital Operating Expenses and Construction Summary

Capital Operating Expenses[a]

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
General Plant Projects	0	0	0
Captial Equipment	0	0	0
Total, Capital Equipment	**0**	**0**	**0**

Outyear Capital Operating Expenses

	(dollars in thousands)			
	FY 2010	FY 2011	FY 2012	FY 2013
General Plant Projects	0	0	0	0
Captial Equipment	0	0	0	0
Total, Capital Equipment	**0**	**0**	**0**	**0**

[a] Funds are appropriated for Operations and Maintenance, which includes operating expenses, capital equipment and general plant projects, and are no longer budgeted for separately for capital equipment and general plant projects. FY 2008 and FY 2009 funding shown reflects estimates based on projected FY 2007 obligations.

International Nuclear Fuel Bank

Funding Schedule by Activity

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
Total, International Nuclear Fuel Bank Program	**0**	**49,545**	**0**

Public Law Authorization:

FY 2008 Consolidated Appropriations Act (P.L. 110-161)

Outyear Funding Schedule

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
Total, International Nuclear Fuel Bank Program	**0**	**0**	**0**	**0**

Description

The FY 2008 Consolidated Appropriations Act (P.L. 110-161) provides approximately $50 million for an International Nuclear Fuel Bank initiative. The funding for the International Nuclear Fuel Bank is the United States Government's contribution to an international effort to establish a nuclear fuel supply for peaceful means under the auspices of the International Atomic Energy Agency (IAEA). The International Nuclear Fuel Bank will provide a nuclear fuel stockpile to be available as a fuel supply reserve for nations that have made the sovereign choice to develop their civilian nuclear energy industry based on foreign sources of nuclear fuel; and therefore, have no requirement to develop an indigenous nuclear fuel enrichment capability.

Detailed Justification

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
International Nuclear Fuel Bank Program	**0**	**49,545**	**0**
The International Nuclear Fuel Bank Program was established by the FY 2008 Consolidated Appropriations Act (P.L. 110-161). In accordance with this Act, a report is being prepared by the Defense Nuclear Nonproliferation program on the progress of the United States to support the establishment of a nuclear fuel supply for peaceful means under the auspices of the IAEA.			
Total, International Nuclear Fuel Bank Program	**0**	**49,545**	0

Explanation of Funding Changes

	FY 2009 vs. FY 2008 ($000)
International Nuclear Fuel Bank Program	
Reflects a one-time commitment by the United States in FY 2008.	-49,545
Total Funding Change, International Nuclear Fuel Bank Program	-49,545

Capital Operating Expenses and Construction Summary

Capital Operating Expenses

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
General Plant Projects	0	0	0
Captial Equipment	0	0	0
Total, Capital Equipment	**0**	**0**	**0**

Outyear Capital Operating Expenses

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
General Plant Projects	0	0	0	0
Captial Equipment	0	0	0	0
Total, Capital Equipment	**0**	**0**	**0**	**0**

Congressional Directed Projects

Funding by Subprogram

(dollars in thousands)

	FY 2007 *(non-add)*	FY 2008 with Rescission	FY 2009
Congressionally Directed Projects	[2,100]	7,380	0

Description

The FY 2008 Consolidated Appropriations Act (P.L. 110-161) included 4 congressionally directed projects within the Defense Nuclear Nonproliferation program. Funding for these projects was appropriated as a separate funding line although these projects relate to ongoing work in specific programmatic areas. Prior year funding for a specific project is noted in the table below as a non-additive column entry.

Detailed Justification

(dollars in thousands)

	FY 2007 *(non-add)*	FY 2008 with Rescission	FY 2009
Congressionally Directed Projects			
• George Mason University Center for Biodefense and Infectious Disease Research (VA) - FY 2007 funding was provided to take advantage of novel methods to rapidly detect biological and chemical threat agents using physical chemistry, active detection, and unusual forms of computational analysis.	[500]	2,952	0
• Nuclear Security Science and Policy Institute, Texas A&M (TX) - FY 2007 funding was provided to bring nuclear technology and education together with development of sound public policy for nuclear nonproliferation. Among the capabilities, the researchers are working on new methods to safeguard nuclear reactor fuel, attribution of the source of a nuclear or radiological attack, and development of more sensitive and accurate interrogation devices to detect radioactive materials at ports of entry.	[1,600]	1,968	0
• Offshore Detection Integrated System (OH)	[0]	984	0
• New England Research in White River Junction, Vermont, for the Caucasus Seismic Network (VT)	[0]	1,476	0
Total, Congressionally Directed Projects	[2,100]	7,380	0

Explanation of Funding Changes

	FY 2009 vs. FY 2008 ($000)
Congressionally Directed Projects	
No funding requested.	-7,380
Total, Congressionally Directed Projects	**-7,380**

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, [$781,800,000]*$828,054,000*, to remain available until expended. *(Energy and Water Development and Related Agencies Appropriation Act, 2008.)*

Explanation of Change

The FY 2009 request is a $53,368,000 increase over the FY 2008 appropriation (a $19,835,000 increase over the FY 2008 request). The FY 2009 funding supports all naval nuclear propulsion work, beginning with reactor technology development, continuing through reactor operation, and ending with reactor plant disposal.

Naval Reactors

Funding Profile by Subprogram

(dollars in thousands)

	FY 2007 Current Appropriation	FY 2008 Original Appropriation	FY 2008 Adjustments	FY 2008 Current Appropriation	FY 2009 Request
Naval Reactors Development					
Operations and Maintenance (O&M)	747,648	739,100	-6,726	732,374	771,600
Program Direction	31,380	32,700	-297	32,403	34,454
Construction	2,772	10,000	-91	9,909	22,000
Total, Naval Reactors Development	**781,800**	**781,800**	**-7,114**	**774,686**	**828,054**

Public Law Authorizations:

P.L. 83-703, "Atomic Energy Act of 1954"
"Executive Order 12344 (42 U.S.C. 7158), "Naval Nuclear Propulsion Program"
P.L. 107-107, "National Defense Authorizations Act of 2002", Title 32, "National Nuclear Security Administration"
John Warner National Defense Authorization Act for FY 2007, (P.L. 109-364)
FY 2008 Consolidated Appropriations Act (P.L. 110-161)
National Nuclear Security Administration Act, (P.L. 106-65), as amended

Outyear Funding Profile by Subprogram

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
Naval Reactors Development				
Operations and Maintenance	782,087	811,651	827,164	831,084
Program Direction	35,754	37,054	38,354	39,754
Construction	30,800	21,050	14,900	29,000
Total, Naval Reactors Development	**848,641**	**869,755**	**880,418**	**899,838**

Major Outyear Priorities and Assumptions

The outyear projections for Naval Reactors total $3,498,652,000 (FY 2010-FY 2013). The trend through the five-year period remains relatively level (before inflation) and reflects a continuing achievement of the Program's mission and performance measure milestones. Adjustments to Program priorities as highlighted below may result in a realignment of resources.

Nuclear Powered Surface Combatant

The Navy is in the process of defining its requirements and completing an Analysis of Alternatives (AoA) to support a potential anti-air warfare and ballistic missile mission focus. Recent Department of Navy and congressional findings and actions indicate that a nuclear-powered next-generation cruiser is a potential platform to deliver the mission, especially in light of rising fuel costs. Drawing from the

findings in the Navy's recently released report to Congress on alternative propulsion; the Navy's top acquisition official concluded that nuclear power should be considered for medium surface combatants, such as a cruiser. The FY 2008 Congressional direction requires major combatant vessels to be designed and constructed with integrated nuclear power systems, unless the Secretary of Defense submits a notification to Congress that states the inclusion of an integrated nuclear power system in such a vessel is not in the national interest. The preferred approach for a nuclear powered cruiser would be to modify a single next-generation aircraft carrier propulsion plant (such as that planned for installation in the new GERALD R FORD class of carriers).

Next-Generation Submarine
The Navy is in the process of performing a study to assess the capabilities for a follow-on strategic weapon system to replace the TRIDENT Strategic Weapon System currently deployed on OHIO-class ballistic missile submarines. Per the Navy's 30-year shipbuilding plan, ship construction for an OHIO-class replacement is scheduled to begin in FY 2019. To support this schedule, funding for initial propulsion plant concept design efforts would be needed in FY 2010.

Dry Storage of Naval Spent Nuclear Fuel
Startup of dry storage operations began in late FY 2006 at the Naval Reactors Facility (NRF) in Idaho. This involves the packaging of spent nuclear fuel from wet to dry storage for ultimate shipment to a geological repository. As production tempos will steadily increase over the next several years in line with external agreements, demands for resources and facility improvements will follow. As a result, a commensurate shift in resources from Program laboratories to NRF and the Expended Core Facility (ECF) is expected. Further, as infrastructure related to spent-fuel processing is 50+ years old, NR is currently developing a mission need statement (CD-0) to retain this capability for the long term.

Mission
Naval Reactors is responsible for all naval nuclear propulsion work, beginning with reactor technology development, continuing through reactor operation, 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 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.

Beginning in FY 2009, External Independent Reviews (EIRs) will be funded within the Office of Management to ensure appropriate EIR scope definition as well as to maintain the “external” and “independent” nature of EIR audits on Program project performance baselines. The request includes a FY 2009 target transfer of $500,000 from the Office of National Nuclear Security Administration to the Office of Management (MA) to support EIRs. Examples of EIRs include conducting performance baseline EIRs prior to Critical Decision-2 (CD-2) to support independent validation of the performance baseline, conducting construction/execution readiness EIRs prior to Critical Decision-3 (CD-3) for major system projects, and tailored EIRs.

Funding for a proportional share of NNSA’s annual assessment required to pay for Defense Contract Audit Agency activities is included in this appropriation. The amount estimated for Naval Reactors is approximately $700,000 for FY 2008 and $700,000 for FY 2009, to be paid from program funding.

Benefits
As the Global War on Terror continues, the National Nuclear Security Administration (NNSA) 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.

Strategic Themes and GPRA Unit Program Goals
The Department's Strategic Plan identifies five Strategic Themes (one each for nuclear, energy, science, management, and environmental aspects of the mission) plus sixteen Strategic Goals that tie to the Strategic Themes. The Naval Reactors program supports the following goals:

Strategic Theme 2, Nuclear Security: Ensuring America's nuclear security.

Strategic Goal 2.3, Nuclear Propulsion Plants: Provide safe, militarily effective nuclear propulsion plants to the U.S. Navy and ensure their continued safe and reliable operation.

The Naval Reactors program has one program goal which contributes to the Defense Strategic Goal and Strategic Goal 2.3, Nuclear Propulsion Plants, in the "goal cascade":

GPRA Unit Program Goal 2.3.45.00: Provide the Navy with safe, militarily effective nuclear propulsion plants and ensure their continued safe and reliable operation.

Contribution to Strategic Goal 2.3, Nuclear Propulsion Plants
Nuclear power enhances warship capability and creates the flexibility needed to sprint anywhere in the world and arrive ready for around-the-clock power projection and combat operations. Sustained high-speed capability (without dependence on a slow logistics train) enables rapid response to changing world circumstances, allowing operational commanders to surge these ships from the United States to trouble spots or to rapidly redeploy them from one crisis area to another. Nuclear propulsion enables the Navy to stretch available assets to meet today's worldwide national security commitments.

The Program's number-one priority is ensuring the safety and reliability of the 103 operating naval reactor plants. Most of the work within the Naval Reactors Program is directed toward ensuring the safe, reliable operation of these plants. Safe and effective nuclear propulsion requires a careful, measured approach to developing and verifying nuclear technology, designing needed components, systems, and processes, and implementing them into existing and future plant designs. Intricate engineering challenges and long lead times to fabricate the massive, complex components require many years of effort before technological advances can be introduced into the Fleet.

Naval Reactors is continuing development of a high-energy reactor for CVN 21 and an alternative lower cost submarine core.

The nuclear propulsion plant design of CVN 21 is well underway. The new high-energy reactor design for CVN 21 represents a critical leap in capability. Not only will the CVN 21 reactor enable the Navy to meet current forecasted operational requirements, but also just as importantly, it will provide flexibility to deal with projected war fighting needs in the future. The CVN 21 reactor will have increased core energy, nearly three times the electric plant generating capability, and will require only half of the reactor department sailors when compared to today's operational aircraft carriers. The CVN 21-class lead ship is expected to be authorized in 2008 and to go to sea in 2015.

An alternative core will use weapon return material and result in lower overall core procurement cost, which will support a higher submarine build rate. The end result is significantly greater operational ability and flexibility. The timing of this core corresponds with the need to transition from 97 to 93 percent enriched uranium fuel. This transition is necessitated by the shutdown of the high enrichment plant and the decision to use Uranium recovered from retired nuclear weapons as starter material for naval nuclear reactors. The alternative core would be intended for forward fitting into VIRGINIA-class submarines, which will be the mainstay of the submarine fleet in future decades.

Funding by Strategic and Program Goal

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
Strategic Goal 2.3, Naval Nuclear Propulsion Plants			
GPRA Unit Program Goal 2.3.45			
Naval Reactors	781,800	774,686	828,054
Total, Strategic Goal 2.3, Naval Nuclear Propulsion Plants	**781,800**	**774,686**	**828,054**

Outyear Funding by Strategic and Program Goal

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
Strategic Goal 2.3, Naval Nuclear Propulsion Plants				
GPRA Unit Program Goal 2.3.45				
Naval Reactors	848,641	869,755	880,418	899,838
Total, Strategic Goal 2.3, Naval Nuclear Propulsion Plants	**848,641**	**869,755**	**880,418**	**899,838**

Annual Performance Results and Targets[a]

(R = Results; T = Targets)

Performance Indicators	FY 2005 Results	FY 2006 Results	FY 2007 Results	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	Endpoint Target
Strategic Goal 2.3 (Nuclear Propulsion Plants) GPRA Unit Program Goal 2.3.45.00, Naval Reactors										
Cumulative miles steamed, in millions, of safe, reliable, militarily effective nuclear propulsion plant operation supporting National security requirements (Long-term Outcome)	R: 133 T: 132	R: 136 T: 134	R: 138 T: 138	T: 140	T: 142	T: 144	T: 146	T: 148	T: 150	By 2015, complete safe steaming of approximately 154 million miles in nuclear-powered ships. (Interim Target)
Cumulative percentage of completion on the Transformational Technology Core (TTC) reactor plant core fuel design (Long-term Outcome)	R: 23% T: 23%	R: 34% T: 34%	R: 100% T: 100%	N/A	N/A	N/A	N/A	N/A	N/A	In 2007, completed the TTC reactor plant core fuel design.
Cumulative percentage of completion on the next-generation aircraft carrier reactor plant design (Long-term Outcome)	R: 70% T: 70%	R : 75% T: 75%	R: 80% T: 80%	T: 85%	T: 88%	T: 91%	T: 94%	T: 96%	T: 98%	By 2015, provide the reactor plant for the next-generation aircraft carrier.
Annual percentage of Program operations that have no adverse impact on human health or the quality of the environment (Annual Outcome)	R: 100% T: 100%	R: 100% T: 100%	R: 100% T: 100%	T: 100%	T: 100%	T: 100%	T: 100%	T: 100%	T: 100%	Annually, ensure that 100% of Program operations have no adverse impact on human health or the quality of the environment.
Annual utilization factor for operation of test reactor plants (Efficiency)	R: 94% T: 90%	R: 91% T: 90%	R: 95% T: 90%	T: 90%	T: 90%	T: 90%	T: 90%	T: 90%	T: 90%	Annually, achieve a utilization factor of at least 90% for operation of test reactor plants.
Annual Naval Reactors complex-wide aggregate Facility Condition Index (FCI), as measured by deferred maintenance per replacement plant value for all program facilities and infrastructure (Annual Output)	N/A	R: 5% T: 5%	R: 5% T: 5%	T: 5%	T: 5%	T: 5%	T: 5%	T: 5%	T: 5%	Annually, achieve an FCI of 5% or below.

[a] Annual Effectiveness and efficiency performance targets will not be reported in the Department's annual Performance and Accountability Report (PAR).

Means and Strategies
The Naval Reactors Program will use various means and strategies to achieve its program goals, including performing collaborative activities. The Program does not believe there are major external factors that could affect our ability to achieve this goal. However, given the unique nature of the Program's responsibilities, commitments to both DOE and the U.S. Navy must be considered at all times. Therefore, any external factor seriously affecting either organization's policies may have an impact on the Naval Reactors Program.

The Department uses two Government-owned, contractor-operated laboratories, the Bettis and Knolls Atomic Power Laboratories, which are predominately involved with the design, development and operational oversight of nuclear propulsion plants for naval vessels. Through these laboratories, and through testing conducted at the Advanced Test Reactor (ATR) located at the Idaho National Laboratory (INL), the Department will complete scheduled design, analysis and testing of reactor plant components and systems, and will conduct planned development, testing, examination, and evaluation of nuclear fuel systems, materials, and manufacturing and inspection methods necessary to ensure the continued safety and reliability of reactor plants in Navy warships. The Department will also accomplish planned testing, maintenance and servicing at land-based prototype nuclear propulsion plants, and will execute planned inactivation of shutdown, land-based reactor plants in support of environmental cleanup goals. Finally, the Department will carry out the radiological, environmental and safety monitoring and ongoing cleanup of facilities necessary to protect people, minimize release of hazardous effluents to the environment, and comply with all applicable regulations.

Industry-specific business conditions, outside technological developments and Department of Navy decisions all impact the performance of naval nuclear propulsion work. Naval nuclear propulsion work is an integrated effort involving the DOE and the Navy, who are full partners in the Naval Nuclear Propulsion Program. This relationship is set forth in Executive Order 12344 and Title 42 U.S.C. 7158.

Validation and Verification
NNSA uses extensive internal and external reviews to evaluate progress against established plans. NNSA's programmatic activities are subject to continuing review by the Congress, the General Accounting Office, the Department's Inspector General, the National Security Council, the Defense Nuclear Facilities Safety Board, the Department's Office of Engineering and Construction Management, and the Department's Office of Independent Oversight and Performance Assurance.

Naval Reactors evaluates the effectiveness, relevance, and progress towards achieving its goals, objectives, and targets by conducting various internal and external reviews and audits. Naval Reactors Headquarters provides continuous oversight and direction for all elements of Program work. Owing to the nature of nuclear technology, a dedicated Government headquarters professional staff expert in nuclear technology makes all major technical decisions regarding design, procurement, operations, maintenance, training, and logistics. Headquarters engineers set standards and specifications for all Naval Nuclear Propulsion Program work, while on-site Headquarters representatives monitor the work at the laboratories, prototypes, shipyards, and prime contractors.

Naval Reactors has a fully integrated long-range planning, budgeting, and execution system. Through this system, Naval Reactors determines general work direction and associated funding needs; balances competing work priorities against available funds; and establishes, monitors, and enforces performance measures and controls. Work and funding priorities are established in relation to core mission. The Program uses this focused, multi-year planning process to evaluate any deficiencies. The resulting

review process validates 100 percent of the budget twice a year and serves as Naval Reactors' change control process.

Program Assessment Rating Tool (PART)
The Department implemented a tool to evaluate selected programs. The PART was developed by the Office of Management and Budget (OMB) to provide a standardized way to assess the effectiveness of the Federal Government's portfolio of programs. The structured framework of the PART provides a means through which programs can assess their activities differently than through traditional reviews.

The current focus is to establish outcome- and output-oriented goals, the successful completion of which will lead to benefits to the public, such as increased national security and energy security, and improved environmental conditions. DOE has incorporated feedback from the OMB into the FY 2009 Budget Request, and the Department will take the necessary steps to continue to improve performance.

For FY 2005, the OMB evaluated the Naval Reactors program using the PART. The OMB gave the Naval Reactors program very high scores of 100 percent on the Purpose and Design, Strategic Planning, and Program Management Sections and 92 percent on the Program Results Section. Overall, the OMB rated Naval Reactors 96 percent, its highest rating of "Effective." The OMB found the program has a clear and unique purpose; is well managed; has clear, concise, meaningful, and measurable performance metrics; and has demonstrated good progress in achieving its annual and long-term goals. Naval Reactors has continued to maintain an "Effective" rating since FY 2005 through annual self assessments and periodic reviews of Performance Measures.

Historically Black Colleges and Universities (HBCU) Support
A research and education partnership program with the HBCU's and the Massie Chairs of Excellence was initiated by the Congress through earmarks in the Office of the Administrator appropriation in FY 2005 and FY 2006. NNSA has established an effective program to target national security research opportunities for these institutions to increase their participation in national security-related research and to train and recruit HBCU graduates for employment within NNSA. The NNSA's goal is a stable work program funded at $10 million annually.

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 this budget are displayed below.

Indirect-Funded Maintenance and Repair

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
Indirect-Funded Maintenance and Repair			
Bettis Atomic Power Laboratory	5,934	6,035	6,194
Naval Reactors Facility	333	490	475
Knolls Atomic Power Laboratory	7,514	7,728	8,194
Kesselring Site Operations	2,900	2,784	2,739
Total, Indirect-Funded Maintenance and Repair	**16,681**	**17,037**	**17,602**

Outyear Indirect-Funded Maintenance and Repair

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
Outyear Indirect-Funded Maintenance and Repair				
Bettis Atomic Power Laboratory	5,977	6,032	6,115	6,119
Naval Reactors Facility	521	459	451	495
Knolls Atomic Power Laboratory	8,716	9,011	9,123	8,959
Kesselring Site Operations	2,531	2,532	2,820	2,848
Total, Outyear Indirect-Funded Maintenance and Repair	**17,745**	**18,034**	**18,509**	**18,421**

Direct-Funded Maintenance and Repair

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
Direct-Funded Maintenance and Repair			
Bettis Atomic Power Laboratory	0	0	0
Naval Reactors Facility	6,318	9,305	9,030
Knolls Atomic Power Laboratory	692	758	684
Kesselring Site Operations	3,628	3,626	4,114
Total, Direct-Funded Maintenance and Repair	**10,638**	**13,689**	**13,828**

Outyear Direct-Funded Maintenance and Repair

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
Outyear Direct-Funded Maintenance and Repair				
Bettis Atomic Power Laboratory	0	0	0	0
Naval Reactors Facility	9,896	8,713	8,564	9,411
Knolls Atomic Power Laboratory	685	677	723	760
Kesselring Site Operations	4,361	4,482	4,893	4,568
Total, Outyear Direct-Funded Maintenance and Repair	**14,942**	**13,872**	**14,180**	**14,739**

Naval Reactors

Operations and Maintenance (O&M)

Funding Schedule by Activity

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
Operations and Maintenance (O&M)			
Plant Technology	130,470	107,008	104,000
Reactor Technology and Analysis	212,137	205,955	204,400
Materials Development and Verification	113,430	106,877	106,100
Evaluation and Servicing	173,111	203,757	264,300
ATR Operations and Test Support	63,516	56,361	60,300
Facility Operations	54,984	52,416	32,500
Total, Operations and Maintenance	**747,648**	**732,374**	**771,600**

Outyear Funding Schedule

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
Total, Operations and Maintenance	**782,087**	**811,651**	**827,164**	**831,084**

Detailed Justification

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
Plant Technology	**130,470**	**107,008**	**104,000**

Plant Technology work focuses on the components and systems of the ship's nuclear power plant. These components and systems transfer, convert, store and measure power to facilitate reductions in maintenance costs over the life of the plant while improving reliability, efficiency, and operational performance. Reactor plant performance, reliability, and safety are maintained via a thorough understanding of component performance and system condition throughout the life of a ship. Also, new components and systems are needed to support new reactor plants and to replace obsolete or degraded equipment and systems. Development and application of new analytical methods, predictive tests, and design tools are required to identify potential concerns before they become actual problems. This enables preemptive actions to ensure the continued safe operation of reactor plants and the minimization of maintenance costs. Plant Technology work is concentrated in the following areas: 1) Steam Generator, 2) Instrumentation and Control Technology, 3) Plant Arrangement/Development, and 4) Plant Performance and Plant Chemistry.

Steam Generator: This work focuses on ensuring satisfactory reactor plant operation throughout life and improve steam generator, energy conversion, and steam generator chemistry technologies to enhance performance and reduce maintenance costs. Fiscal year 2009 work objectives include the following:

- Conduct assessments of plant concepts, development of plant components and investigations of alternate energy conversion technologies for advanced naval propulsion plant applications.
- Monitor and assess performance of liquid level probe and in-situ chemistry/corrosion monitoring in S8G and MARF prototypes to obtain data, defining actual conditions in operating steam generators.
- Continue to develop improved steam generator chemistry and corrosion instrumentation through continued prototype and laboratory testing.

Instrumentation and Control Technology: This work focuses on developing instrumentation and control equipment to replace obsolete equipment, improve reliability and performance and reduce costs. Fiscal year 2009 work objectives include the following:

- Commence development of maneuvering room mock up to evaluate reduced watch standing concepts.
- Perform on-board acceptance testing of first ship set of S8G generic I&C equipment.
- Continue detailed design, development, and qualification of the A1B reactor plant I&C system.
- Continue design, development, and qualification of the S6W Generic I&C (Type 2) equipment.
- Continue development of advanced power electronic motor drive controls supporting future submarine electric drive.

- Continue integrated system testing of advanced electric plant control systems including new technologies and architectures.

Plant Arrangement/Development: This work focuses on developing and testing reactor plant components and applicable emergent energy conversion technologies for converting high temperature reactor heat to electricity. These efforts address known limitations and have as a goal improved overall reactor plant systems performance and reliability. Fiscal year 2009 work objectives include the following:

- Continue design of the A1B reactor plant and development of the A1B reactor plant operating procedures.
- Continue design activities necessary to support VIRGINIA class cost reduction initiatives.
- Continue to assist plant designers in implementation of novel design methods to identify vulnerabilities in more simplified, more affordable designs.
- Complete engineering qualification testing of A1B reactor coolant pump.

Plant Performance and Primary Chemistry: This work focuses on performing reactor plant analyses to ensure safe operation, and improving reactor plant chemistry controls to reduce corrosion and plant radiation levels. Fiscal year 2009 work objectives include the following:

- Evaluate the effect of Roentgen Equivalent Man (REM) reduction additive on the initial fleet applications. Continue to implement fleet wide use of improved primary chemistry analysis techniques.
- Support development of A1B Chemistry Analysis Room (CAR) and Secondary Chemistry Automated Analysis Systems (SCAAS).
- Perform emergent radiochemical, chemical, and micro chemical analyses on primary system samples and components to resolve operating plant problems.
- Perform chemistry analysis supporting development of long-term strategies for fleet steam generators.
- Complete Reactor Protection System Performance Analysis for A1B.

Reactor Technology and Analysis	**212,137**	**205,955**	**204,400**

Reactor Technology and Analysis supports the work required to ensure the operational safety and reliability of operating reactor plants in U.S. warships, extend the operational life of Navy nuclear propulsion plants, support Navy acoustic requirements, and preserve the Program's level of excellence in radiological and environmental control. Work focuses on developing a better understanding of reactor behavior fundamentals; designing new, reduced cost reactors with improved reliability, and efficiency; improving and streamlining manufacturing and assembly processes to achieve cost savings and reduce waste; developing production techniques that incorporate new materials and processes; and continuing a record of excellence in safety. Reactor Technology and Analysis work is concentrated in

the following areas: 1) Advanced Core and Reactor Technology, 2) Advanced Thermal-Hydraulic Technology, 3) Advanced Fuel and Manufacturing Technology, 4) Control Drive Mechanism, 5) Reactor Physics, 6) Safety Analysis and Shielding, and 7) Radiological Controls, Environmental, Safety, and Quality Efforts.

Advanced Core and Reactor Technology: This work focuses on improving the nuclear heat source (core) design and analysis methods and developing improved designs to satisfy service life requirements. Fiscal year 2009 work objectives include the following:

- Initiate actions to shutdown Hot Quiet Test Facility.
- Verify the physics parameters of all operating fleet cores and monitor operating data with respect to Reactor Systems Performance Analysis (RSPA) limits.
- Continue work on cost saving initiatives and core design concepts related to future submarine initiatives.
- Continue to develop new design and analysis tools to enable improved core performance and cost savings.
- Complete the A1B reactor safety steam-water qualification program.

Advanced Thermal-Hydraulic Technology: This work focuses on developing and qualifying improved core and reactor component thermal and hydraulic designs. Fiscal year 2009 work objectives include the following:

- Develop thermal-hydraulic technologies and methods to support future advanced PWR and advanced concept designs.
- Maintain integrated, state-of-the-art software system for plant performance/protection analysis, reactor safety analyses, and real-time applications.
- Deliver design procedures and codes for thermal/hydraulic design of alternate cores.

Advanced Fuel and Manufacturing Technology: This work focuses on evaluating and testing improved core manufacturing processes and inspection techniques to support reactors. Fiscal year 2009 work objectives include the following:

- Fabricate model elements and core structural components to qualify new reactor materials, designs, and manufacturing and inspection technologies for follow on cores.
- Investigate new methods to improve core-manufacturing processes.
- Investigate new fuel systems for cost savings and improved manufacturability.

(dollars in thousands)

FY 2007	FY 2008	FY 2009

Control Drive Mechanism: This work focuses on designing and testing improved reactor equipment including advanced control drive mechanisms (CDMs) which meet all design requirements, are more reliable than past designs, and are more affordable. Fiscal year 2009 work objectives include the following:

- Conduct shock testing of different core designs for A1B.
- Continue design of A1B CDM Power Unit Assembly. Complete design and delivery of tooling and procedure development. Commence design of long-term test facility for the A1B CDM.
- Continue analysis of the Next Generation Reactor (NGR) CDM.
- Continue evaluating future CDM design enhancements for longer term, more affordable application.
- Complete and issue report on shock testing of an advanced PWR design. Complete the remaining transient shock analysis technology development program.

Reactor Physics: This work focuses on performing physics testing and analysis to confirm expected fuel system and core performance and develop improved analysis methods for predicting core performance that reduce design approximations, uncertainties, and associated conservatism. Fiscal year 2009 work objectives include the following:

- Continue Reactor System Protection Analysis (RSPA) support for the Next Generation Reactor Core.
- Develop physics test predictions and related analysis for NGR new construction testing.
- Develop and qualify nuclear design procedures and computer programs for analyzing both advanced PWR and high temperature reactor cores

Safety Analysis and Shielding: This work focuses on conducting reactor safety and shielding analysis for nuclear reactor plants to ensure containment of radiation and proper protection of personnel. Fiscal year 2009 work objectives include the following:

- Develop the radiation protection sections of the A1B reactor plant manual.
- Document reactor safety deliverables and support NRC/ACRS reviews.
- Support updates and revisions to the A1B drawings for items which impact the shield design.
- Provide shielding review of issues associated with advanced reactor plant designs.

(dollars in thousands)

FY 2007	FY 2008	FY 2009

Radiological Controls, Environmental, Safety, and Quality Efforts: This work focuses on conducting radiological control, environmental, and safety operations necessary to protect laboratory employees, minimize release of hazardous effluents to the environment, and comply with all applicable regulations. Fiscal year 2009 work objectives include the following:

- Continue to survey and document radiological conditions; train personnel for all phases of radiological work and environmental work.
- Continue to review radiological work procedures, conduct a radiological health program, and conduct emergency preparedness program.
- Continue to maintain strict accountability and handling methods for nuclear fuel.
- Continue to ensure compliance with all safety and environmental regulations; train personnel to comply with latest standards and practices.

Materials Development and Verification **113,430** **106,877** **106,100**

To extend the lifetime of reactors, reduce costs, and achieve greater power capabilities, new materials must be developed and qualified for use in the harsh reactor environment. Existing or new materials selected for current or future advanced designs must also be economical to acquire and feasible to manufacture. Manufacturing processes must be developed to ensure the materials can be cost effectively produced to stringent specifications in appropriate quantities. Material test specimens are fabricated and rigorously tested for desired characteristics. Irradiation testing and quality control techniques are crucial to this qualification process. Materials exhibiting the desired characteristics warranting further evaluation are committed to long-term tests and verification in prototype cores and test reactors. Materials Development and Verification work is concentrated in the following areas: 1) Irradiation Testing and Evaluation, 2) Core and Reactor Materials Development, 3) Plant and Component Materials Development, and 4) Materials Evaluation, Testing and Verification.

Irradiation Testing and Evaluation: This work involves fabricating, testing and examining high integrity nuclear fuel, poison, cladding and structural materials for affordable advanced naval reactor cores. The generated data is used to develop materials capable of maintaining their structural and mechanical integrity over long periods of time in an operating reactor environment. Fiscal year 2009 work objectives include the following:

- Establish the methods and hardware to irradiate and qualify new materials and manufacturing methods for PWR designs.
- Perform destructive and non-destructive testing and evaluation of irradiated fuel, poison, and cladding in support of development and improvement of core, plant and steam generator materials.
- Continue examinations of PWR fuel and cladding performance incorporating results into predictive tools.
- Deliver test assemblies for irradiation testing at the Advanced Test Reactor.
- Complete last S8G expended core examinations.

(dollars in thousands)

FY 2007	FY 2008	FY 2009

Core and Reactor Materials Development: Involves verifying acceptable performance for current cores through end of life, pursuing potential cost reductions, and improving materials and processes through long-term irradiation tests and evaluations. Fiscal year 2009 work objectives include the following:

- Incorporate revised corrosion code model for alternate cladding into design computer codes.
- Incorporate new steady state and peak central temperature limits into the Fuel and Poison Manual.
- Follow irradiation testing of advanced fuel and advanced poison systems in the Advanced Test Reactor.
- Continue development, irradiation testing, and examinations of high temperature PWR fuel element constituent materials.
- Continue to establish the processes needed to qualify new materials and manufacturing methods for safer, more capable, and more cost effective PWR designs.
- Develop fuel element fabrication models and support alternative core design element design recommendation.

Plant and Component Materials Development: This work characterizes high strength structural, corrosion resistant, pressure vessel, steam generator, and valve materials to determine the cause for degraded performance and develop improved predictive techniques. Fiscal year 2009 work objectives include the following:

- Provide welding support for S9G/NCSG (New Concept Steam Generator) and A1B reactor heavy equipment fabrication.
- Continue Alloy 600 Stress Corrosion Cracking (SCC) initiation and incubation testing.
- Continue development of the initiation phase and incubation phase of the Advanced Alloy 600 SCC model.
- Continue testing to qualify Alloy 690. Begin testing the EN52 weld chemistry that was selected for qualification.

Materials Evaluation, Testing and Verification: The purpose of this work is to establish and maintain capability to perform materials testing representative of shipboard service applications. Fiscal year 2009 work objectives include the following:

- Evaluate and support initiatives, which reduce long term operating costs, maximize operational effectiveness and provide greatest program impact.
- Provide Analytical Chemistry, Radiochemistry, Physical Chemistry, Metallography, Micro analytical and Mechanical Testing services in support of materials development programs.
- Conduct high temperature and high-pressure autoclave testing in support of new materials development for use in the fleet.

- Support resistance temperature detector (RTD) reinspections on selected A4W reactor plants. Evaluate image and signal processing techniques for data analysis.
- Complete efforts related to construction of the Materials Development Facility including startup, equipment relocation, and occupancy.

Evaluation and Servicing **173,111** **203,757** **264,300**

Evaluation & Servicing promotes the Naval Reactors Program tradition of safety, reliability, and technical excellence through the operation, maintenance, and testing of land-based test facilities. A key focus of these facilities is to enhance fleet performance through testing and examination of materials, components, and new designs under actual operating conditions. This effort includes the design of fuel servicing and component disposal equipment, evaluating and resolving design issues, plus the planning and execution of defueling, lay-up, and disassembly work. Evaluation and Servicing work is concentrated in the following areas: 1) Routine Operations and Maintenance, 2) Routine Environmental Remediation, 3) Servicing, 4) Expended Core Processing & Examination, 5) NY Inactivation.

Routine Operations and Maintenance: This work involves operating the Naval Reactors prototypes in a safe and reliable manner to support testing and evaluation of new components, systems, applications, and designs. The work also supports preventive maintenance, upgrades and modifications on the prototypes. Fiscal year 2009 work objectives include the following:

- Perform depletion and testing of the cores in MARF and S8G prototypes.
- Conduct ninth MARF high power physics test and the eight MARF low power physics test and issue reports. Conduct MARF maximum power tests.
- Conduct MARF and S8G materials stress tests.
- Operate the prototypes for testing and maintenance at a utilization factor of greater than 90%.

Routine Environmental Remediation: This process involves decontaminating to minimize the environmental, health, and safety impact of contaminated facilities, with the benefit of making radiological facilities available for non-radiological use. Fiscal year 2009 work objectives include the following:

- Initiate D&D of the Materials Evaluation Laboratory.
- Continue decontamination work efforts for Water Pit #1 at ECF.
- Decontaminate and disposition Expended Core Facility environmental legacies based on Program priorities.
- Maintain inactive Naval Reactors Facility prototype plants in a safe and environmentally benign condition.
- Remove highly contaminated inactive equipment and systems from the L-Building in accordance with the project management plan.
- Conduct remediation of obsolete facilities to reduce potential environmental liabilities.

(dollars in thousands)

FY 2007	FY 2008	FY 2009

Servicing: This work involves servicing prototypes to ensure continued safe and reliable operation. Servicing also provides refueling/defueling systems for both existing and new core designs. Fiscal year 2009 work objectives include the following:

- Commence major non-refueling overhaul of the S8G prototype.
- Commence execution of MARF and S8G Selected Restricted Availabilities, including the Engineered Safety Features System upgrade.
- Develop and qualify A1B CDM seal welding and cutting procedures.
- Deliver power unit installation spreader assembly, equipment for installation of casualty monitoring instrumentation, and emergency safeguards system components, bolting ring main closure studs/nuts installation equipment, and power unit seating measurement equipment. Continue design work on A1B refueling equipment.

Expended Core Processing & Examination: This work involves operating the Expended Core Facility (ECF) in Idaho including the Advanced Test Reactor in a safe and reliable manner to support examination and disposal of spent naval fuel. Fiscal year 2009 work objectives include the following:

- Initiate design of equipment for M-290 A1G fuel discharge and processing in the ECF water pit.
- Initiate detailed design of M-290 loading equipment.
- Complete conceptual design for the Canal Fuel Transfer Station.
- Complete the core independent Safety Analysis Report for Packaging (SARP) and the A1W core dependent SARP.
- Complete the replacement of the ECF Highbay Exhaust System.
- Complete S3G module cut and drill fixture designs.

Prototype Inactivation: This work involves the disassembly and disposition of the Program's testing prototypes and support facilities. Fiscal year 2009 work objectives include the following:

- Commence disassembly of the D1G Primary Shield Tank (PST).
- Continue D1G reactor compartment disassembly.

Advanced Test Reactor (ATR) Operations and Test Support	**63,516**	**56,361**	**60,300**

Naval Reactors performs irradiation testing at the ATR in support of advanced reactor design development. While ATR is owned by DOE-NE and operated by their contractor, this funding supports base operations of the ATR as well as NR specific testing.

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
Facility Operations	**54,984**	**52,416**	**32,500**

Facility Operations funding supports general plant projects (GPP) and capital equipment procurements.

Total, Operations and Maintenance	**747,648**	**732,374**	**771,600**

Explanation of Funding Changes

	FY 2009 vs. FY 2008 ($000)

Plant Technology

- Completion of A1B instrumentation and control (I&C) design efforts.
- Completion of the Reactor Protection System Performance Analysis for A1B.
- Deferral of advanced S8G Prototype instrumentation and control (I&C) development.
- Completion of automated primary chemistry equipment installation for CVN77.
- Reduction in efforts in advanced electronic and reactor plant technology development resulting from a programmatic shift in priorities to provide additional resources in support of ECF operations. -3,008

Reactor Technology and Analysis

- Completion of final fuel and poison design for the NGR-93 core.
- Completion of shock qualification for A1B engineered safeguard system components.
- Completion of the A1B Reactor Safety Steam Water qualification program.
- Completion of design and delivery of tooling for A1B Control Drive Mechanism Power Unit Assembly.
- Initiation of actions to shutdown the Hot Quiet Test Facility.
- Reduction reflects reduced operation of the Large Component Testing Facility. -1,555

Materials Development and Verification

- Reduction in expended core examinations to perform only first of a kind testing.
- Completion of Ceramics Development Laboratory stabilization for eventual deconstruction.
- Completion of testing to qualify Alloy 690.
- Completion of efforts related to construction of the Materials Development Facility including startup and equipment relocation. -777

	FY 2009 vs. FY 2008 ($000)
Evaluation and Servicing	
• Increase reflects a programmatic shift in priorities to support production dry storage and spent nuclear fuel processing including increased maintenance and assessment of ECF infrastructure.	
• Commencement of MARF and S8G prototypes selected restricted (SRA) availabilities including modification of the engineered safeguard system.	
• Initiation of equipment design for M-290 A1G fuel discharge and processing in the ECF water pit.	
• Initiation of detailed design for M-290 loading equipment.	
• Commencement of the D1G prototype Primary Shield Tank disassembly.	
• Initiation of D&D efforts in the Materials Evaluation Laboratory.	+60,543
ATR Operations and Test Support	
• Inflationary increase to support continued operations and maintenance of the Advanced Test Reactor.	+3,939
Facility Operations	
• Reductions in capital equipment procurements supporting advanced development have resulted from a programmatic shift in priorities to provide additional resources in support of ECF operations.	
• Completion of the Engineering Safety Feature System (MIE) installation for the MARF and S8G prototypes.	
• Reduction in High Performance Computing requirements.	
• Reduction in General Plant Project requirements.	-19,916
Total Funding Change, Operations and Maintenance	**+39,226**

Naval Reactors

Program Direction

Funding Schedule by Category

	(dollars in thousands) (Whole FTEs)		
	FY 2007	FY 2008	FY 2009
Headquarters			
Salary and Benefits	10,326	10,567	11,300
Travel	580	700	970
Support Services	0	0	0
Other Related Expenses	3,526	2,855	3,034
Total, Headquarters	**14,432**	**14,122**	**15,304**
Full-Time Equivalents	**67**	**71**	**74**
Pittsburgh Naval Reactors			
Salary and Benefits	8,325	8,775	9,025
Travel	153	255	330
Support Services	0	0	0
Other Related Expenses	1,253	1,327	1,550
Total, Pittsburgh Naval Reactors	**9,731**	**10,357**	**10,905**
Full-Time Equivalents	**65**	**72**	**71**
Schenectady Naval Reactors			
Salary and Benefits	6,539	7,010	7,215
Travel	124	204	240
Support Services	0	0	0
Other Related Expenses	554	710	790
Total, Schenectady Naval Reactors	**7,217**	**7,924**	**8,245**
Full-Time Equivalents	**60**	**64**	**64**
Total Naval Reactors Program Direction			
Salary and Benefits	25,190	26,352	27,540
Travel	857	1,159	1,540
Support Services	0	0	0
Other Related Expenses	5,333	4,892	5,374
Total, Program Direction	**31,380**	**32,403**	**34,454**
Full-Time Equivalents	**192**	**207**	**209**

Outyear Profile by Category

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
Headquarters				
Salary and Benefits	11,770	12,270	12,740	13,250
Travel	1,050	1,070	1,090	1,180
Support Services	0	0	0	0
Other Related Expenses	3,229	3,404	3,579	3,594
Total, Headquarters	**16,049**	**16,744**	**17,409**	**18,024**
Full-Time Equivalents	**74**	**74**	**74**	**74**
Pittsburgh Naval Reactors				
Salary and Benefits	9,275	9,575	9,900	10,300
Travel	380	400	430	450
Support Services	0	0	0	0
Other Related Expenses	1,620	1,765	1,830	1,900
Total, Pittsburgh Naval Reactors	**11,275**	**11,740**	**12,160**	**12,650**
Full-Time Equivalents	**71**	**71**	**70**	**70**
Schenectady Naval Reactors				
Salary and Benefits	7,350	7,475	7,630	7,900
Travel	255	265	280	290
Support Services	0	0	0	0
Other Related Expenses	825	830	875	890
Total, Schenectady Naval Reactors	**8,430**	**8,570**	**8,785**	**9,080**
Full-Time Equivalents	64	64	64	64
Total Naval Reactors Program Direction				
Salary and Benefits	28,395	29,320	30,270	31,450
Travel	1,685	1,735	1,800	1,920
Support Services	0	0	0	0
Other Related Expenses	5,674	5,999	6,284	6,384
Total, Program Direction	**35,754**	**37,054**	**38,354**	**39,754**
Full-Time Equivalents	**209**	**209**	**208**	**208**

Mission

Due to the crucial nature of nuclear reactor work, Naval Reactors is a centrally managed organization. Federal employees oversee and set policies/procedures for developing new reactor plants, operating existing nuclear 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.

Detailed Justification

	(dollars in thousands)		
	FY 2007	FY 2008	FY 2009
Salaries and Benefits	**25,190**	**26,352**	**27,540**

Federal Staff continue to direct technical work and provide management/oversight of laboratories and facilities to ensure safe and reliable operation of Naval nuclear plants. The change is due to projected salary adjustments in accordance with allowable inflation.

Travel	**857**	**1,159**	**1,540**

Travel includes funding for the transportation of Government employees, their per diem allowances while in authorized travel status and other expenses incidental to travel. FY 2009 funding supports travel required for the management and oversight of the Naval Reactors Program, in addition to inflationary growth between FY 2008 and FY 2009.

Support Services	**0**	**0**	**0**

Naval Reactors does not use Support Services contractors.

Other Related Expenses	**5,333**	**4,892**	**5,374**

Includes provision of funds for the Working Capital Fund, based on guideline estimates provided by the Working Capital Fund Manager. Funding also supports goods and services such as training and Automated Data Processing (ADP) maintenance, and includes labor costs for Bettis contractor services and ADP requirements for Naval Reactors Headquarters internal classified local area network.

Total, Program Direction	**31,380**	**32,403**	**34,454**

Explanation of Funding Changes

	FY 2008 vs. FY 2009 ($000)
Salaries and Benefits	
The change is due to salary adjustments in accordance with allowable inflation in achieving and maintaining the FY 2009 FTE target.	+1,188
Travel	
The change is due to increased travel requirements for the management and oversight of the Naval Reactors Program, increased costs associated with travel (i.e., airfare/fuel), and adjustments in accordance with allowable inflation.	+381
Other Related Expenses	+482
The change is due to an increase in ADP requirements, including upgrading PC's, network infrastructure, and software, some of which were deferred due to reduced funding available in FY 2008. This increase also includes the funding provided to support new Working Capital Fund items.	
Total Funding Change, Program Direction	**+2,051**

Other Related Expenses by Category

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
Training	219	223	240
Working Capital Fund	610	615	674
Software Procurement/Maintenance Activities/Capital Acquisitions	1,985	1,789	2,325
Other	2,519	2,265	2,135
Total Budget Authority	**5,333**	**4,892**	**5,374**

Capital Operating Expenses and Construction Summary

Capital Operating Expenses

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
General Plant Projects	15,012	25,816	14,000
Captial Equipment	39,972	26,600	18,500
Total, Capital Equipment	**54,984**	**52,416**	**32,500**

Outyear Capital Operating Expenses

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
General Plant Projects	11,250	11,750	16,700	7,800
Captial Equipment	27,450	32,400	28,000	28,000
Total, Capital Equipment	**38,700**	**44,150**	**44,700**	**35,800**

Construction Projects

(dollars in thousands)

	Total Estimated Cost (TEC)	Prior Year Appro-priations	FY 2007	FY 2008	FY 2009	Unappro-priated Balance
05-D-900, Materials Development Facility	17,679	16,392	1,287	0	0	-
07-D-190, PED, Materials Research and Technology Complex	3,010	1,079	1,485	446	0	-
07-D-190, Materials Research and Technology Complex [a]	29,810	0	0	0	12,400	14,400
08-D-901, Shipping and Receiving and Warehouse Complex	8,918	0	0	8,918	0	-
08-D-190, PED, ECF M-290 Receiving/Discharge Station	1,045	0	0	545	300	200
09-D-902, NRF Production Support Complex	18,700	0	0	0	8,300	10,400
09-D-190, PED, KAPL Infrastructure Upgrades	2,000	0	0	0	1,000	1,000
Total, Construction			2,772	9,909	22,000	

[a] Includes PED funding ($3,014,000) from 07-D-190, PED, Materials Research and Technology Complex.

Outyear Construction Projects

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
07-D-190, Materials Research and Technology Complex	11,700	2,700	0	0
08-D-190, PED, ECF M-290 Receiving/Discharge Station	200	0	0	0
08-D-190, ECF M-290 Receiving/Discharge Station	9,300	5,350	0	6,800
09-D-902, NRF Production Support Complex	6,400	4,000	0	0
09-D-190, PED, KAPL Infrastructure Upgrades	1,000	0	0	0
09-D-190, KAPL Infrastructure Upgrades	0	8,000	6,600	6,500
10-D-XXX, PED, KAPL Security Upgrades	1,500	500	0	0
10-D-XXX, KAPL Security Upgrades	0	0	4,000	7,000
10-D-XXX, PED, NRF Infrastructure Upgrades	700	500	0	0
10-D-XXX, NRF Infrastructure Upgrades	0	0	3,200	6,900
12-D-XXX, PED Water Pit #1 Upgrade	0	0	1,100	800
13-D-XXX, PED Materials Characterization Laboratory	0	0	0	1,000
Total, Construction	**30,800**	**21,050**	**14,900**	**29,000**

Major Items of Equipment *(TEC $2 million or greater)*

(dollars in thousands)

Major Item of Equipment	Total Project Cost (TPC)	Total Estimated Cost (TEC)	Prior Year Appro-priations	FY 2007	FY 2008	FY 2009	Completion Date
Network Upgrade	0	4,200	0	0	0	600	FY 2012
Low Level Exam Equipment	5,640	5,300	5,000	300	0	0	FY 2006
Scalable Parallel Supercomputer	7,401	7,000	0	0	0	7,000	FY 2009
Network Convergence	0	3,000	1,500	1,500	0	0	FY 2007
Emergency Safety Fill System	12,900	10,900	4,100	2,000	2,300	2,500	FY 2009
High Performance Computing System	7,889	7,000	0	0	7,000	0	FY 2008
Total, Major Items of Equipment				**3,800**	**9,300**	**10,100**	

Outyear Major Items of Equipment

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
Network Upgrade	1,000	1,000	1,000	0
Network Upgrade	1,200	1,200	1,200	0
Scalable Parallel Supercomputer	9,000	0	0	0
Scalable Parallel Supercomputer	0	9,000	0	0
High Performance Technical Computing System	0	0	8,000	0
High Performance Technical Computing System	0	0	0	8,000
Total, Major Items of Equipment	**11,200**	**11,200**	**10,200**	**8,000**

09-D-902, Naval Reactors Facility (NRF) Production Support Complex, Naval Reactors Facility, Idaho
Project Data Sheet (PDS) is for Design-Build Construction

1. Significant Changes

Critical Decision (CD) CD-2, Performance Baseline, approved November 1, 2007, with a Total Project Cost of $18,988,000.[a]

This PDS is new for Design-Build Construction.

2. Design, Construction, and D&D Schedule

(fiscal quarter or date)

	CD-0	CD-1 (Design Start)[a]	(Design/PED Complete)[b]	CD-2[a]	CD-3 (Construction Start	CD-4 (Construction Complete)	D&D Start[c]	D&D Complete[c]
FY2009	8/30/2007	1QFY2008	N/A	1QFY2008	1QFY2009	2QFY2012	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[c]	OPC, Total	TPC[a]
FY2009	N/A	18,700	18,700	288	N/A	288	18,988

[a] As a design-build project, CD-1 and CD-2 submitted concurrently in November 2007. This submittal included the performance specification to support the development of a solicitation package.

[b] Construction design will be performed by the Design-Build contractor.

[c] No offsetting D&D will be identified for this project. The NRF site has and will continue to expand to meet mission-critical work in support of spent fuel processing with insufficient excess facilities for deconstruction.

4. Project Description, Justification, and Scope

Description
The NRF Production Support Complex is a design-build project that will construct an office building containing a cafeteria, an emergency control center (ECC), training classrooms, and a large meeting room that can be easily modified to accommodate additional cafeteria seating or classroom space.

Justification
The NRF has experienced substantial employee population growth over the past five years to establish the production capability to process spent nuclear fuel for a spent fuel repository. NRF is the sole facility in the Naval Nuclear Propulsion Program which has the facilities, equipment, and established processes for processing spent naval nuclear fuel for transportation to a spent fuel repository. The processing of spent naval nuclear fuel into containers is required to support ongoing fleet defuelings to meet legal agreements with the state of Idaho. The population growth has exhausted the available office capacity to permanently house professional employees in program standard office environments. Additionally, the population growth has exceeded the existing capacity of support activities including the NRF cafeteria, large training and meeting rooms, and the NRF ECC. Additional space and capability in these areas are required to maintain professional work environments and to support the site's growing mission.

Scope
The NRF Production Support Complex project will construct an office building that will contain approximately 170 office spaces, a cafeteria that can serve approximately 500 persons for lunch and seat approximately 250 persons, approximately 2,400 square feet of space for an ECC, and approximately 37,900 square feet of space for training classrooms, office spaces, and a large meeting room that can be easily modified to accommodate additional cafeteria seating or classroom space.

The project is being conducted in accordance with the NR Implementation Bulletin of DOE O 413.3A and the NR Program and Project Management Manual, and appropriate project management requirements have been met.

5. Financial Schedule

(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
FY2009, Design	1,794	1,794	1,794
Total, Design	1,794	1,794	1,794
Construction			
FY2009	6,506	6,506	206
FY2010	6,400	6,400	9,000
FY2011	4,000	4,000	6,000
FY2012			1,700
Total, Construction	16,906	16,906	16,906

	(dollars in thousands)		
	Appropriations	Obligations	Costs
TEC			
FY2009	8,300	8,300	1,000
FY2010	6,400	6,400	9,500
FY2011	4,000	4,000	5,200
FY2012			3,000
Total, TEC	18,700	18,700	18,700
Other Project Cost (OPC)			
OPC except D&D			
FY2007	37	37	37
FY2008	187	187	187
FY2012	64	64	64
Total, OPC except D&D	288	288	288
D&D[a]			
Total, D&D	N/A	N/A	N/A
OPC			
FY2007	37	37	37
FY2008	187	187	187
FY2012	64	64	64
Total, OPC	288	288	288
Total Project Cost (TPC)			
FY2007	37	37	37
FY2008	187	187	187
FY2009	8,300	8,300	1,000
FY2010	6,400	6,400	9,500
FY2011	4,000	4,000	5,200
FY2012	64	64	64
Total, TPC	18,988	18,988	18,988

[a] No offsetting D&D will be identified for this project. The NRF site will expand to meet mission-critical work in support of spent fuel processing with insufficient excess facilities to support planned construction.

6. Details of Project Cost Estimate

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design			
Design	1,794	N/A	1,794
Contingency	N/A	N/A	N/A
Total, Design	1,794	N/A	1,794
Construction			
Site Preparation	349	N/A	349
Equipment and Furnishings	1,556	N/A	1,556
Other Construction	10,686	N/A	10,686
Contingency	4,315	N/A	4,315
Total, Construction	16,906	N/A	16,906
Total, TEC	14,385	N/A	14,385
Contingency, TEC	4,315	N/A	4,315
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	74	N/A	74
Conceptual Design	150	N/A	150
Start-Up	64	N/A	64
Contingency	0	N/A	0
Total, OPC except D&D	288	N/A	288
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	288	N/A	288
Contingency, OPC	0	N/A	0
Total, TPC	18,988	N/A	18,988
Total, Contingency	4,315	N/A	4,315

7. Schedule of Project Costs

For schedule of project costs, see Section 5, “Financial Schedule.”

8. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	4QFY2012
Expected Useful Life (number of years)	40 years
Expected Future Start of D&D of this capital asset (fiscal quarter)	4QFY2052

(Related Funding requirements)

(dollars in thousands)

	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations and Maintenance	374	N/A	14,960	N/A
Total, Operations & Maintenance	374	N/A	14,960	N/A

9. Required D&D Information[a]

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

Name(s) and site location(s) of existing facility(s) to be replaced: N/A

10. Acquisition Approach

The Program's prime contractor prepared the performance specification as the basis for the design-build contract. A fixed-price contract for the procurement and construction will be awarded on the basis of competitive bidding. The successful design-build contractor will perform the design and construction of the new facility.

[a] No offsetting D&D will be identified for this project. The NRF site has and will continue to expand to meet mission-critical work in support of spent fuel processing with insufficient excess facilities to support planned construction.

09-D-190, KAPL Infrastructure Upgrades, Schenectady, NY
Project Data Sheet is for PED/Construction

1. Significant Changes

Critical Decision (CD) CD-0, Mission Need, is scheduled for approval February 1, 2008, with a preliminary cost range of $25,000,000 – $32,000,000.

This PDS is new for PED/Construction.

2. Design, Construction, and D&D Schedule

(fiscal quarter or date)

	CD-0	CD-1 (Design Start)	(Design/PED Complete)	CD-2	CD-3 (Construction Start)	CD-4 (Construction Complete)	D&D Start	D&D Complete
FY2009	1QFY2008	2QFY2008	4QFY2009					

CD-0 – Approve Mission Need
CD-1 – Approve Alternative Selection and Cost Range

Preliminary schedule estimate range for CD-4, Approve Start of Operations or Project Closeout, is 4QFY2010 to 2QFY2011.

3. Baseline and Validation Status

(dollars in thousands)

	TEC, PED	TEC, Construction	TEC, Total	OPC Except D&D[a]	OPC, D&D	OPC, Total	TPC
FY2009	2,000			1,000			

Preliminary project cost estimate is $25,000,000 to $32,000,000.

4. Project Description, Justification, and Scope

The KAPL Infrastructure Upgrades project will support two Program sites (Knolls Atomic Laboratory, Kesselring Site Operation) by replacing or upgrading 50-year old infrastructure. The project will include upgrades to electrical distribution, storm water, sanitary, fire protection, steam/condensate, and site water systems. The Knolls and Kesselring Site utilities have not had significant upgrade or replacements since installation. Over the years, additional demands on the original systems have intensified through increased testing and training capabilities. This project will support existing facilities as well as provide the infrastructure for planned site improvements and development.

[a] Includes conceptual planning and design.

The project is being conducted in accordance with the NR Implementation Bulletin of DOE O 413.3A and the NR Program and Project Management Manual, and appropriate project management requirements have been met.

5. Financial Schedule

(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED			
FY2009	1,000	1,000	1,000
FY2010	1,000	1,000	700
FY2011			300
Total, PED	2,000	2,000	2,000
Other Project Cost (OPC)			
OPC except D&D			
FY2008	1,000	1,000	700
FY2009			300
Total, OPC except D&D	1,000	1,000	1,000

6. Details of Project Cost Estimate

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED)			
Design	1,800	N/A	
Contingency	200	N/A	
Total, PED	2,000	N/A	
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	20	N/A	
Conceptual Design	900	N/A	
Contingency	80	N/A	
Total, OPC except D&D	1,000	N/A	

7. Schedule of Project Costs

For schedule of project costs, see Section 5, “Financial Schedule.”

8. Related Operations and Maintenance Funding Requirements

Not applicable for PED.

9. Required D&D Information

Not applicable for PED.

10. Acquisition Approach

Not applicable for PED.

08-D-190, Expended Core Facility (ECF) M-290 Receiving/Discharge Station, Naval Reactors Facility, Idaho
Project Data Sheet is for PED/Construction

1. Significant Changes

The most recent approved CD, CD-0 Mission Need, was approved on 30 November 2006.

This PDS is an update of the FY 2008 PDS.

The estimated cost for project engineering and design has been revised to $1,045,000 and the preliminary cost range has been revised to $21,600,000 - $28,500,000. This change reflects the consolidation of several ECF general plant projects that could be more cost-effectively executed as a single project.

This PDS incorporates a 0.91 percent rescission as directed in the FY 2008 Consolidated Appropriations Act (P.L. 110-161).

2. Design, Construction, and D&D Schedule

(fiscal quarter or date)

	CD-0	CD-1 (Design Start)	(Design/PED Complete)	CD-2	CD-3 (Construction Start)	CD-4 (Construction Complete)	D&D Start	D&D Complete
FY2008	11/30/2006	4QFY2007	2QFY2010					
FY2009	11/30/2006	8/17/2007	2QFY2010					

CD-0 – Approve Mission Need
CD-1 – Approve Alternative Selection and Cost Range

Preliminary schedule estimate range for CD-4, Approve Start of Operations or Project Closeout, is 1QFY2015 to 2QFY2015.

3. Baseline and Validation Status

(dollars in thousands)

	TEC, PED	TEC, Construction	TEC, Total	OPC Except D&D[a]	OPC, D&D	OPC, Total	TPC
FY2008	850			298			
FY2009	1,045			298			

Preliminary project cost estimate is $21,600,000 to $28,500,000.

[a] Includes conceptual planning and design.

4. Project Description, Justification, and Scope

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 modify (e.g., installation of larger capacity crane) ECF to allow the receipt and handling of M-290 shipping containers.

The project is being conducted in accordance with the NR Implementation Bulletin of DOE O 413.3A and the NR Program and Project Management Manual, and appropriate project management requirements have been met.

5. Financial Schedule

(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED			
FY2008	545	545	425
FY2009	300	300	420
FY2010	200	200	200
Total, PED	1,045	1,045	1,045
Other Project Cost (OPC)			
OPC except D&D			
FY2007	298	298	248
FY2008	0	0	50
Total, OPC except D&D	298	298	298

6. Details of Project Cost Estimate

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED)			
Design	808	765	
Contingency	237	85	
Total, PED	1,045	850	
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	85	N/A	
Conceptual Design	213	N/A	
Contingency	0	N/A	
Total, OPC except D&D	298	N/A	

7. Schedule of Project Costs

For schedule of project costs, see Section 5, "Financial Schedule."

8. Related Operations and Maintenance Funding Requirements

Not applicable for PED.

9. Required D&D Information

Not applicable for PED.

10. Acquisition Approach

Not applicable for PED.

07-D-190, Materials Research and Technology Complex, Bettis Atomic Power Laboratory, Pittsburgh, PA
Project Data Sheet is for Construction

1. Significant Changes

Critical Decision (CD) CD-2, Performance Baseline, was approved November 17, 2007, with a Total Project Cost of $70,680,000.

This PDS is a continuation of a PED PDS proceeding to construction.

This PDS incorporates a 0.91 percent rescission as directed in the FY 2008 Consolidated Appropriations Act (P.L. 110-161).

2. Design, Construction, and D&D Schedule

(fiscal quarter or date)

	CD-0	CD-1 (Design Start)	(Design/PED Complete)	CD-2	CD-3 (Construction Start)	CD-4 (Construction Complete)	D&D Start	D&D Complete
FY2007	2/12/2004	2QFY2005	3QFY2008	TBD	2QFY2009	2QFY2011	1QFY2012	4QFY2042
FY2008	2/12/2004	2QFY2005	3QFY2008	TBD	2QFY2009	2QFY2011	1QFY2012	4QFY2042
FY2009	2/12/2004	4/11/2007	1QFY2009	1QFY2008	1QFY2009	4QFY2011	1QFY2009	4QFY2039

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[a]	OPC, D&D[b]	OPC, Total	TPC
FY2007	3,014	TBD	TBD	930	TBD	TBD	TBD
FY2008	3,014	TBD	TBD	930	TBD	TBD	TBD
FY2009	3,010	26,800	29,810	4,370	36,500	40,870	70,680

[a] Prior to CD-2, OPC only included costs for conceptual planning and design.

[b] D&D is performed in accordance with the Program's 30-year D&D plan.

4. Project Description, Justification, and Scope

Description
The MRTC project will include the construction of an approximately 34,500 gross square feet (GSF) main chemistry building and the modification of the existing 10,500 GSF Cleanroom Technology Facility. The main building will house general chemistry, classical wet chemistry, surface science, electron microprobe, spectroscopy, and radiochemistry laboratories, while the existing CTF building will house the analytical electron microscopy, scanning electron microscopy, and metallography laboratories. The buildings will be constructed outside of the existing perimeter fence in the southwest corner of the ball field at the Bettis Atomic Power Laboratory site in West Mifflin, Pennsylvania.

Justification
The analysis and testing laboratory facilities to be constructed as part of the MRTC project are the focal point for providing the necessary technology to support Bettis-Pittsburgh's efforts to develop, test, and qualify material and processes for supporting a variety of Naval Reactors programs, as well as the operating fleet. The existing testing laboratories currently operate within 50-year-old buildings with aging infrastructure and radiological, asbestos, and PCB legacies. The new complex is needed to replace old and inadequate system utilities; to effectively integrate environmental and radiological requirements to maximize productivity; and to consolidate currently dispersed operations to optimize technical alignment of the test laboratories' organization. Construction of the MRTC will also allow the current facilities to be vacated and turned over to the Decontamination and Decommissioning (D&D) contractor for future deconstruction.

Scope
The MRTC project will consist of two buildings for a total of 45,000 gross square feet. Of the total gross square footage approximately 5% is designated as office or conference facilities while the remaining 95% gross square feet will consist of mechanical rooms and technical laboratory space. The main building (MRTC-2) will house general chemistry, classical wet chemistry, surface science, electron microprobe, spectroscopy, and radiochemistry laboratories, while the existing Cleanroom Technology Facility building will house the analytical electron microscopy, scanning electron microscopy, and metallography laboratories (MRTC-1).

The project is being conducted in accordance with the NR Implementation Bulletin of DOE O 413.3A and the NR Program and Project Management Manual, and appropriate project management requirements have been met.

5. Financial Schedule

(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED			
FY2005	1,079	1,079	1,079
FY2006	0	0	0
FY2007	1,485	1,485	810

	(dollars in thousands)		
	Appropriations	Obligations	Costs
FY2008	446[a]	446	1,011
FY2009	0	0	110
Total, PED	3,010	3,010	3,010
Construction			
FY2009	12,400	12,400	6,000
FY2010	11,700	11,700	14,800
FY2011	2,700	2,700	6,000
Total, Construction	26,800	26,800	26,800
TEC			
FY2005	1,079	1,079	1,079
FY2006	0	0	0
FY2007	1,485	1,485	810
FY2008	446	446	1,011
FY2009	12,400	12,400	6,110
FY2010	11,700	11,700	14,800
FY2011	2,700	2,700	6,000
Total, TEC	29,810	29,810	29,810
Other Project Cost (OPC)			
OPC except D&D			
FY2005	567	567	567
FY2006	363	363	363
FY2007	0	0	0
FY2008	40	40	40
FY2009	95	95	95
FY2010	200	200	200
FY2011	1,605	1,605	1,605
FY2012	1,500	1,500	1,500
Total, OPC except D&D	4,370	4,370	4,370

[a] The FY 2008 appropriated funding was reduced by $4,000 based on a rescission of 0.91 percent in accordance with the FY 2008 Consolidated Appropriations Act (P.L. 110-161).

	(dollars in thousands)		
	Appropriations	Obligations	Costs
D&D			
FY2013 – FY2039[a]	36,500	36,500	36,500
Total, D&D	36,500	36,500	36,500
OPC			
FY2005	567	567	567
FY2006	363	363	363
FY2007	0	0	0
FY2008	40	40	40
FY2009	95	95	95
FY2010	200	200	200
FY2011	1,605	1,605	1,605
FY2012	1,500	1,500	1,500
FY2013 – FY2039	36,500	36,500	36,500
Total, OPC	40,870	40,870	40,870
Total Project Cost (TPC)			
FY2005	1,646	1,646	1,646
FY2006	363	363	363
FY2007	1,525	1,525	810
FY2008	490	490	1,055
FY2009	12,495	12,495	6,205
FY2010	11,900	11,900	15,000
FY2011	4,305	4,305	7,605
FY2012	1,500	1,500	1,500
FY2013 – FY2039	36,500	36,500	36,500
Total, TPC	70,680	70,680	70,680

6. Details of Project Cost Estimate

	(dollars in thousands)		
	Current Total Estimate	Previous Total Estimate	Original Validated Baseline[b]
Total Estimated Cost (TEC)			
Design (PED)			
Design	3,010	3,010	3,010
Contingency	0	0	0
Total, PED	3,010	3,010	3,010
Construction			
Site Preparation	97	N/A	97
Equipment	0	N/A	0
Other Construction	21,373	N/A	21,373
Contingency	5,330	N/A	5,330
Total, Construction	26,800	N/A	26,800
Total, TEC	29,810	N/A	29,810

[a] D&D is performed in accordance with the Program's 30-year D&D plan.

[b] Performance Baseline (CD-2) will be approved in November 2007.

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline[b]
Contingency, TEC	5,330	N/A	5,330
Other Project Cost (OPC)			
OPC except D&D			
Conceptual Planning	567	N/A	567
Conceptual Design	363	N/A	363
Start-Up	420	N/A	420
Temporary Utilities	20	N/A	20
Relocation	3,000	N/A	3,000
Contingency	0	N/A	0
Total, OPC except D&D	4,370	N/A	4,370
D&D			
D&D	36,500	N/A	36,500
Contingency	0	N/A	0
Total, D&D	36,500	N/A	36,500
Total, OPC	40,870	N/A	40,870
Contingency, OPC	0	N/A	0
Total, TPC	70,680	N/A	70,680
Total, Contingency	5,330	N/A	5,330

7. Schedule of Project Costs

For schedule of project costs, see Section 5, “Financial Schedule.”

8. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	1Q2012
Expected Useful Life (number of years)	50
Expected Future Start of D&D of this capital asset (fiscal quarter)	1Q2062

(Related Funding requirements)

(dollars in thousands)

	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	77	N/A	6,668	N/A
Maintenance	290	N/A	24,895	N/A
Total, Operations & Maintenance	367	N/A	31,563	N/A

9. Required D&D Information[a]

Area	Square Feet
Area of new construction	35,000
Area of existing facility(s) being replaced	31,960
Area of additional D&D space to meet the "one-for-one" requirement	3,040

Name(s) and site location(s) of existing facility(s) to be replaced: Materials Evaluation Laboratory and Chemistry Laboratories, Bettis Atomic Power Laboratory, Pittsburgh, PA.

10. Acquisition Approach

The Program's A/E subcontractor will perform construction design to support development of a construction solicitation package. MRTC (1) which includes modification of the existing Cleanroom facility will be a traditional contract placement. MRTC (2) will be accomplished as a phase-funded contract. Both contracts will be designated as a fixed-price contract for procurement and construction and will be awarded on the basis of competitive bidding.

[a] D&D is performed in accordance with the Program's 30-year D&D plan.

Site Funding Summary

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
Chicago Operations Office			
Ames Laboratory	357	488	353
Argonne National Laboratory	24,888	29,967	30,787
Brookhaven National Laboratory	44,322	46,971	40,701
Chicago Operations Office	34,461	34,468	36,122
Lawrence Berkeley National Laboratory	5,113	6,173	4,538
New Brunswick Laboratory	743	1,055	1,010
Idaho Operations Office			
Idaho National Laboratory	96,350	106,219	100,636
Idaho Operations Office	2,501	2,878	2,467
Kansas City Site Office			
Kansas City Plant	427,689	400,737	480,010
Kansas City Site Office	6,040	6,267	6,951
Livermore Site Office			
Lawrence Livermore National Laboratory	1,195,320	1,091,146	1,036,080
Livermore Site Office	21,214	17,591	19,605
Los Alamos Site Office			
Los Alamos National Laboratory	1,544,495	1,578,742	1,545,246
Los Alamos Site Office	17,665	17,674	20,601
NETL			
NETL	4,438	1,850	1,892
NNSA Service Center			
General Atomics	20,463	23,231	17,658
National Renewable Energy Laboratory	705	820	768
Naval Research Laboratory	21,000	23,105	1,500
NNSA Service Center (all other sites)	694,524	905,717	650,353
University of Rochester/LLE	46,399	60,480	58,302
Nevada Site Office			
Nevada Site Office	126,181	107,877	120,490
Nevada Test Site	268,026	292,315	281,109

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
Oak Ridge Operations Office			
Oak Ridge Institute for Science and Engineering	14,450	12,896	14,286
Oak Ridge National Laboratory	182,114	172,005	103,998
Oak Ridge Operations Office	30	0	0
Office of Science and Technical Information	162	81	136
Pacific Northwest National Laboratory	168,982	206,522	172,778
Y-12 National Security Complex	861,814	909,047	858,837
Y-12 Site Office	38,853	47,096	43,900
Lexington	1,987	4,010	0
Pantex Site Office			
Pantex Plant	475,773	510,919	511,744
Pantex Site Office	14,204	12,645	13,330
Pittsburgh Naval Reactors Office			
Bettis Atomic Power Laboratory	382,585	394,490	427,300
Pittsburgh Naval Reactors Office	9,731	10,357	10,905
Richland Operations Office			
Richland Operations Office	1,513	1,328	1,286
Sandia Site Office			
Sandia National Laboratories	1,242,711	1,211,070	1,164,191
Sandia Site Office	13,632	13,681	15,005
Savannah River Operations Office			
Savannah River Operations Office	295,683	13,949	27,797
Savannah River Site	257,597	243,383	272,052
Savannah River Site Office	4,688	23,245	23,977
Schenectady Naval Reactors Office			
Knolls Atomic Power Laboratory	301,587	288,214	302,800
Schenectady Naval Reactors Office	7,217	7,924	8,245
Washington DC Headquarters			
Headquarters	377,669	414,166	668,800
Adjustments	-33,000	-120,514	-1,284
Total, NNSA	**9,222,876**	**9,132,285**	**9,097,262**

Outyear Funding

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
Chicago Operations Office				
Ames Laboratory	466	501	526	538
Argonne National Laboratory	14,982	15,403	16,710	18,738
Brookhaven National Laboratory	34,192	34,817	35,723	36,533
Chicago Operations Office	22,353	34,663	70,822	0
Lawrence Berkeley National Laboratory	6,593	7,047	7,450	7,628
New Brunswick Laboratory	1,341	1,409	1,513	1,557
Idaho Operations Office				
Idaho National Laboratory	75,756	77,374	79,921	83,464
Idaho Operations Office	2,922	3,109	3,265	3,380
Kansas City Site Office				
Kansas City Plant	486,337	466,708	393,072	387,914
Kansas City Site Office	7,250	7,565	7,886	8,226
Livermore Site Office				
Lawrence Livermore National Laboratory	1,043,354	1,010,157	1,027,794	1,046,478
Livermore Site Office	20,413	21,268	22,117	23,034
Los Alamos Site Office				
Los Alamos National Laboratory	1,614,363	1,637,584	1,631,053	1,668,132
Los Alamos Site Office	21,489	22,422	23,373	24,384
NETL				
NETL	1,981	2,120	2,322	0
NNSA Service Center				
Atomic Energy of Canada, Ltd.	0	0	0	0
General Atomics	18,059	16,864	15,805	16,048
National Renewable Energy Laboratory	2,174	2,284	2,462	2,524
Naval Research Laboratory	0	0	0	0
NNSA Service Center (all other sites)	595,547	594,307	607,349	604,757
University of Rochester/LLE	52,980	47,888	46,181	47,401
Nevada Site Office				
Nevada Site Office	112,677	118,844	122,680	126,662
Nevada Test Site	242,382	246,442	266,409	269,961

	(dollars in thousands)			
	FY 2010	FY 2011	FY 2012	FY 2013
Oak Ridge Operations Office				
Oak Ridge Institute for Science and Engineering	15,154	15,860	16,603	17,409
Oak Ridge National Laboratory	84,767	84,088	87,218	90,728
Oak Ridge Operations Office	0	0	0	0
Office of Science and Technical Information	128	120	121	123
Pacific Northwest National Laboratory	160,495	157,056	159,915	159,783
Y-12 National Security Complex	937,252	1,031,312	1,090,849	1,165,688
Y-12 Site Office	40,038	36,487	37,596	38,137
Lexington	0	0	0	0
Pantex Site Office				
Pantex Plant	518,452	534,985	540,427	574,669
Pantex Site Office	13,905	14,510	15,127	15,782
Pittsburgh Naval Reactors Office				
Bettis Atomic Power Laboratory	437,250	441,153	437,813	453,467
Pittsburgh Naval Reactors Office	11,275	11,740	12,160	12,650
Richland Operations Office				
Richland Operations Office	1,350	1,418	1,489	1,563
Sandia Site Office				
Sandia National Laboratories	1,186,338	1,176,892	1,158,890	1,178,348
Sandia Site Office	15,635	16,300	16,968	17,684
Savannah River Operations Office				
Savannah River Operations Office	43,565	56,181	43,103	47,145
Savannah River Site	381,913	461,553	487,927	459,914
Savannah River Site Office	4,257	4,436	4,616	4,809
Schenectady Naval Reactors Office				
Knolls Atomic Power Laboratory	310,837	325,248	336,451	337,317
Schenectady Naval Reactors Office	8,430	8,570	8,785	9,080
Washington DC Headquarters				
Headquarters	788,212	833,758	889,947	1,001,656
Adjustments	0	0	0	0
Total, NNSA	**9,336,864**	**9,580,443**	**9,730,438**	**9,963,311**

BETTIS ATOMIC POWER LABORATORY

TABLES

FUNDING BY PROGRAM:

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
NNSA			
Naval Reactors	382,585	394,490	427,300
Total, NNSA	**382,585**	**394,490**	**427,300**

OUT-YEAR FUNDING:

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
NNSA				
Naval Reactors	437,250	441,153	437,813	453,467
Total, NNSA	**437,250**	**441,153**	**437,813**	**453,467**

EMPLOYMENT:

	FY 2007	FY 2008	FY 2009
Contractor Employment (End of Year)			
Bettis Atomic Power Laboratory	3,156	3,178	3,357
Total Facility	**3,156**	**3,178**	**3,357**

Congressional Items of Interest: None

Major Changes or Shifts: None

Site Description

INTRODUCTION:

Bettis Laboratory is a research and development laboratory operated by Bechtel Bettis, Inc., for the Naval Nuclear Propulsion Program, a joint Department of the Navy-Department of Energy (DOE) organization. The Pittsburgh Naval Reactors Office oversees Bettis operations. Bettis is primarily involved with the design, development, and operational flow of nuclear propulsion plants for naval vessels. The Program ensures the safe operation of reactor plants in nuclear-powered submarines and aircraft carriers (constituting 40 percent of the Navy's combatants), and fulfills the Navy's requirements for new nuclear propulsion plants that meet current and future national defense requirements. The initial efforts of Bettis Laboratory led to the development of the power plant for USS NAUTILUS (SSN 571), the world's first nuclear-powered submarine. The Bettis Atomic Power Laboratory is situated on nearly 202 acres of the former Bettis Airfield in West Mifflin, Pennsylvania, about 7.5 miles southeast of Pittsburgh, Pennsylvania.

ACTIVITIES:

Naval Reactors

The broad spectrum of Bettis' activities has included work on core and component technology and design, thermal and hydraulic systems, materials, and nuclear physics. Bettis also has lead responsibility for the overall program for training Navy personnel in nuclear plant operations, including training at the Naval Nuclear Power Training Command, Charleston, South Carolina; the Moored Training Ships; and Fleet training. Bettis also maintains engineering field offices at numerous shipyards and core contractor facilities and operates the Expended Core Facility at the Naval Reactors Facility near Idaho Falls, Idaho.

KANSAS CITY PLANT

TABLES

FUNDING BY PROGRAM:

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
NNSA			
Weapons Activities			
Directed Stockpile Work	223,103	209,968	254,542
Engineering Campaign	6,737	6,147	6,275
Advanced Simulation and Computing Campaign	250	500	0
Pit Manufacturing and Certification Campaign	450	125	0
Readiness Campaign	33,667	26,692	24,952
Readiness in Technical Base and Facilities	89,106	90,138	128,035
Secure Transportation Asset	32,763	27,951	29,932
Nuclear Weapons Incident Response	7,803	4,706	4,941
Facilities and Infrastructure Recapitalization Program	17,668	15,600	10,000
Environmental Projects and Operations Program/LTS	0	1,000	2,800
Defense Nuclear Security	11,294	10,748	10,843
Cyber Security	2,700	3,678	5,349
Subtotal Weapons Activities	**425,541**	**397,253**	**477,669**
Defense Nuclear Nonproliferation			
Nonproliferation and International Security	2,148	2,499	2,341
Subtotal Defense Nuclear Nonproliferation	**2,148**	**2,499**	**2,341**
Congressionally Direted Projects	0	985	0
Total, NNSA	**427,689**	**400,737**	**480,010**

OUT-YEAR FUNDING:

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
NNSA				
Weapons Activities				
Directed Stockpile Work	217,328	188,739	163,806	178,753
Engineering Campaign	5,993	5,700	6,227	6,464
Readiness Campaign	21,203	20,005	12,110	15,499
Readiness in Technical Base and Facilities	179,500	188,711	145,226	119,174
Secure Transportation Asset	30,096	30,998	31,928	32,885
Nuclear Weapons Incident Response	2,339	2,456	2,579	2,708
Facilities and Infrastructure Recapitalization Program	10,000	10,000	10,000	10,000
Environmental Projects and Operations Program/LTRA	1,821	1,847	1,889	2,218
Defense Nuclear Security	11,334	11,327	12,108	12,430
Cyber Security	4,981	5,095	5,226	5,761
Subtotal Weapons Activities	**484,595**	**464,878**	**391,099**	**385,892**
Defense Nuclear Nonproliferation				
Nonproliferation and International Security	1,742	1,830	1,973	2,022
Subtotal Defense Nuclear Nonproliferation	**1,742**	**1,830**	**1,973**	**2,022**
Congressionally Directed Projects	0	0	0	0
Total, NNSA	**486,337**	**466,708**	**393,072**	**387,914**

EMPLOYMENT:

	FY 2007	FY 2008	FY 2009
Contractor Employment (End of Year)			
NNSA	2,313	2,361	2,379
Other	387	386	386
Total Facility	**2,700**	**2,747**	**2,765**

Congressional Items of Interest: Transformation implementation plans for downsizing and redirection of costs and support of W76 Life Extension Program (LEP).

Major Changes or Shifts: Implementation of Transformation initiatives including increased outsourcing, reduction of indirect overhead, and lease of a new, downsized facility.

Site Description

INTRODUCTION:

The Kansas City Plant (KCP) is situated on approximately 122 acres of the 300-acre Bannister Federal Complex located within city limits, 12 miles south of downtown Kansas City, Missouri.

The KCP is responsible for the development and maintenance of a broad technology base that delivers advanced, integrated, and secure solutions as the Department of Energy/National Nuclear Security Administration (DOE/NNSA) primary nonnuclear production plant.

The site is aligned with Complex Transformation activities for the future of the nuclear weapons complex. The site has an approved critical decision to proceed with planning for a new facility under a General Services Administration (GSA) lease. Elements of this transformation include: (1) reducing the floor space required for non-nuclear production activities by nearly two-thirds through outsourcing and reducing capacity, (2) establishing a supply chain management center for reduced procurement costs across the entire nuclear weapons complex, (3) down-sizing the inventory of stored parts for legacy weapons, and (4) adopting a new oversight model for NNSA sites that increases the use of best industrial practices.

ACTIVITIES:

Directed Stockpile Work (DSW)
KCP activities include production engineering, tooling, material procurement, and production labor associated with continuing production for the W76-1 LEP. Production completes for the B61 Alteration (Alt) 357 LEP and continues for the B61 Alt 356/8/9. Enduring Stockpile System production activities include Joint Test Assembly support, Firing Set, Environmental Sensing Devices, and Lightning Arrestor Connector surveillance rebuilds in addition to laboratory and flight test sampling. Major reservoir production continues for the B61, W76, W78, W80, and W88 Enduring Stockpile Systems. A new mission assignment for the Kansas City Plant is management of NNSA's Supply Chain Management Center which is responsible for implementing tools, processes, and accountability to support enterprise-wide NNSA strategic sourcing. The site is aligned with the NNSA plans for Complex Transformation.

Engineering Campaign
The KCP has a primary role in Enhanced Surveillance by evaluating non-nuclear components and materials for age-related characteristics, which are then used to assist in lifetime assessments and age-aware models. The KCP also supports future system deployment including on-board/embedded components, materials, system sensors, as well as on-board telemetry and communication linkage.

Readiness Campaign
Nonnuclear Readiness: activities include production tester readiness supporting production of nonnuclear components and assemblies, secure engineering and manufacturing information integration capabilities, electronic component and assembly miniaturization, agile machining and inspection, warhead refurbishment of materials, and plant product infrastructure for Process-Prove-In and failure analysis supporting the development, manufacturing, and inspection for production of weapon components.

Advanced Design and Production Technologies (ADAPT): activities include development of manufacturing and electrical processes, advancements in plastics process technology, development of electronic model definition capabilities and development of integrated phase gates for future systems. Model-based tools and processes will be developed for engineering, manufacturing, and acceptance of weapon components. Beginning in FY 2009, the Readiness Campaign will combine both capability development, heretofore funded from the ADAPT subprogram, and capability deployment within the Nonnuclear Readiness, High Explosives and Weapon Operations, and Stockpile Readiness subprograms for increased efficiency, sustainability, and accountability at the sites. Some of the ADAPT projects specifically related to KCP nonnuclear production may be funded from the Nonnuclear Readiness subprogram.

Readiness in Technical Base and Facilities
The RTBF is the primary NNSA direct infrastructure funding source to enable DSW and Campaigns supporting responsiveness, sustaining Environmental Safety and Health, providing rearrangements for production efficiency, and delivering reliable facility, utility, and equipment uptime in support of Stockpile Stewardship production missions. The RTBF provides continual support of fundamental infrastructure services including facilities management and site planning, maintenance, utilities, capital equipment, general plant projects, expense funded projects; facility startup and project support; Environmental, Safety, and Health; and Program Readiness. Specific efforts will be focused on completion of the Supply Chain Management Center and the Kansas City Responsive Infrastructure Manufacturing and Sourcing transformation plan.

Nuclear Weapons Incident Response
Support for the DOE and the NNSA's Office of Emergency Response at KCP involves assistance in operations and capabilities to provide assistance to Federal, state and local government agencies for responding to radiological accidents and incidents. This effort includes the Stabilization Implementation program begun in FY 2008 and will continue in FY 2009.

Secure Transportation Asset
The KCP is the engineering assembly agency and technical systems integrator for Secure Transportation Asset (STA) and their Transportation Safeguards System. The KCP provides engineering support for integrated mobile communications systems for vehicles and convoy operations; manages and supports relay station operations, maintenance and upgrades; operates vehicle production facilities at Kansas City and Albuquerque, conducts quality assurance studies, vehicle and communication upgrades and repairs to the fleet; provides document management and control of the Agent Standard Operating Procedures, maintains the STA secure website, and maintains the Electronic Systems Depot. The KCP provides technical training support, operates Vehicle Maintenance Facilities, and maintains a Mobile Electronics Maintenance Facility to support the training fleet at Fort Chaffee, Arkansas.

Environmental Projects and Operations - Long-Term Stewardship
All legacy environmental cleanup activities at the Kansas City Plant (KCP) were completed at the end of FY 2006 by the Office of Environmental Management (EM). Restoration activities for the 43 release sites at KCP were accomplished under an accelerated cleanup approach, with the 95th Terrace completed as the final release site in FY 2006. In FY 2007, the Long-Term Stewardship (LTS) program was managed by NNSA but funded by EM due to the terms of the Continuing Resolution not allowing functional transfers. For FY 2008 and FY 2009, LTS activities include program management, and continued administration of environmental restoration project activities at the site, as well as the operation and maintenance of treatment and monitoring systems required under KCP's RCRA Post Closure Permit issued by the Missouri Department of Natural Resources.

Facilities and Infrastructure Recapitalization Program (FIRP)
The Kansas City Site Office has demonstrated aggressive execution of FIRP activities by focusing on reducing the deferred maintenance of mission facilities and infrastructure necessary to the Stockpile Stewardship Program. In FY 2006 KCP recommended that NNSA discontinue expenditure of FIRP resources on refurbishing their aged production facility. This recommendation is based on KCP's development of a transformation proposal that will construct a new, modern production facility, known as the Kansas City Responsive Infrastructure Manufacturing and Sourcing or KCRIMS. This has allowed redirection of FIRP resources to other critical priorities. NNSA's Roof Asset Management Program (RAMP) will continue to be managed by the Kansas City Site Office. The RAMP, a best

business practice employed throughout the weapons complex, contracts for an integration manager to oversee an economical roof repair program at six of the eight nuclear weapons sites.

Defense Nuclear Security
The KCP Defense Nuclear Security program provides all aspects of physical security protection for the plant consistent with DOE Order requirements documented in its approved facility Master Security Plan. For FY 2009 KCP should focus on improving the efficiency of the security program, including modernization of the security infrastructure and implementation of technology upgrades to reduce the need for protective force posts and patrols. KCRIMS is considered central to this goal.

Cyber Security
The Cyber Security program will focus on revitalization, which will enable NNSA to respond to its highest priorities and to address current and future risks; certification and accreditation for proper documentation of risks and justification of associated operations for systems at all sites; and, education and awareness that provides training for federal and contractor personnel to meet expanding skill requirements of NNSA cyber security and information environments.

Nonproliferation and International Security
KCP provides International Regimes and Agreements with reviews of export controlled equipment, materials and software, and analytical tools and technical references for use in developing recommendations on U.S. export license applications, including WMD training to Department of Homeland Security and other enforcement agencies.

KNOLLS ATOMIC POWER LABORATORY

TABLES

FUNDING BY PROGRAM:

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
NNSA			
Naval Reactors	301,587	288,214	302,800
Total, NNSA	**301,587**	**288,214**	**302,800**

OUT-YEAR FUNDING:

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
NNSA				
Naval Reactors	310,837	325,248	336,451	337,317
Total, NNSA	**310,837**	**325,248**	**336,451**	**337,317**

EMPLOYMENT:

	FY 2007	FY 2008	FY 2009
Contractor Employment (End of Year)			
Knolls Atomic Power Laboratory	2,518	2,550	2,486
Total Facility	**2,518**	**2,550**	**2,486**

Congressional Items of Interest: None

Major Changes or Shifts: None

Site Description

INTRODUCTION:

The Knolls Atomic Power Laboratory (KAPL) is a research and development laboratory operated by KAPL, Inc. (a Lockheed Martin Company) for the Naval Nuclear Propulsion Program, a joint Department of the Navy-Department of Energy organization. The Schenectady Naval Reactors Office oversees KAPL operations. KAPL's primary function is to support the U.S. Naval Nuclear Propulsion Program through the development of advanced reactor plant designs, while providing design agency support of the operating fleet and training nuclear propulsion plant operators. The Program ensures the safe operation of reactor plants in nuclear-powered submarines and aircraft carriers (which constitute 40 percent of the Navy's combatants), and fulfills the Navy's requirements for new nuclear propulsion plants that meet current and future national defense requirements. The Knolls Site in Niskayuna is situated on approximately 180 acres of land, while the Kesselring Site in West Milton is situated on approximately 3,905 acres. KAPL field personnel also work at shipyards in New Hampshire, Connecticut, Virginia, Hawaii, and Washington, as well as at the Naval Reactors Facility Site in Idaho.

ACTIVITIES:

Naval Reactors

KAPL's efforts focus on designing the world's most technologically advanced nuclear reactor plants for U.S. Navy submarines. Fundamental research is conducted to develop improved materials, chemistry control systems, and components for naval nuclear propulsion technology. KAPL uses its theoretical knowledge, sophisticated testing capabilities, and computational power to design new reactor and propulsion systems and components that will be used on existing and future Navy surface ships and submarines. In addition, KAPL operates two prototype plants located at the Kesselring Site in West Milton, N.Y. The MARF and S8G prototypes began operating in 1976 and 1978, respectively, and are used primarily for naval nuclear propulsion training. These plants are also used to test reactors, reactor plant systems, and reactor steam and electric plant components. Also located at Kesselring, the S3G and D1G prototypes are undergoing inactivation. S3G and D1G, which started operation in 1958 and 1962, respectively, were used for training and testing until their missions were completed in the 1990s. At that time, the plants were shut down and inactivation was started as part of Naval Reactors' continuing commitment to ensure proper dismantlement and environmental remediation of formerly used facilities.

LAWRENCE LIVERMORE NATIONAL LABORATORY

TABLES

FUNDING BY PROGRAM:

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
NNSA			
Weapons Activities			
Directed Stockpile Work	125,147	92,369	115,229
Science Campaign	90,170	80,506	90,508
Engineering Campaign	25,335	25,477	20,687
Inertial Confinement Fusion Ignition and High Yield Campaign	360,235	304,852	285,078
Advanced Simulation and Computing Campaign	235,923	209,987	145,692
Pit Manufacturing and Certification Campaign	21,642	18,981	0
Readiness Campaign	12,822	2,991	8,248
Readiness in Technical Base and Facilities	96,072	93,487	85,862
Nuclear Weapons Incident Response	22,008	23,275	41,939
Facilities and Infrastructure Recapitalization Program	19,911	18,828	19,851
Environmental Projects and Operations Program/LTS	0	6,092	22,274
Transformation Disposition	0	0	6,650
Defense Nuclear Security	81,360	95,475	91,031
Cyber Security	16,184	17,910	17,756
Subtotal Weapons Activities	**1,106,809**	**990,230**	**950,805**
Defense Nuclear Nonproliferation			
Nonproliferation and Verification R&D	38,362	47,934	34,936
Nonproliferation and International Security	20,163	23,460	21,970
International Nuclear Materials Protection and Cooperation	25,756	21,857	19,395
Global Threat Reduction Initiative	4,230	7,665	8,974
Subtotal Defense Nuclear Nonproliferation	**88,511**	**100,916**	**85,275**
Total, NNSA	**1,195,320**	**1,091,146**	**1,036,080**

OUT-YEAR FUNDING:

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
NNSA				
Weapons Activities				
Directed Stockpile Work	102,087	93,910	92,223	92,477
Science Campaign	88,966	85,305	85,533	86,560
Engineering Campaign	22,092	21,869	24,182	25,338
Inertial Confinement Fusion Ignition and High Yield Campaign	299,462	261,533	255,759	257,865
Advanced Simulation and Computing Campaign	130,359	135,098	136,268	138,473
Pit Manufacturing and Certification Campaign	0	0	0	0
Readiness Campaign	12,555	8,714	2311	2759
Readiness in Technical Base and Facilities	84,813	87,161	104,115	106,897
Nuclear Weapons Incident Response	42,461	44,584	46,291	46,906
Facilities and Infrastructure Recapitalization Program	22,771	23,200	23,040	23,000
Environmental Projects and Operations Program/LTRA	20,112	20,826	21,094	19,240
Transformation Disposition	6,650	7,300	7,600	8,250
Defense Nuclear Security	99,436	104,585	107,570	110,426
Cyber Security	17,843	18,446	18,990	20,558
Subtotal Weapons Activities	**949,607**	**912,531**	**924,976**	**938,749**
Defense Nuclear Nonproliferation				
Nonproliferation and Verification R&D	44,598	47,890	50,156	51,379
Nonproliferation and International Security	20,695	21,744	23,441	24,027
International Nuclear Materials Protection and Cooperation	18,835	18,236	18,384	18,958
Global Threat Reduction Initiative	9,619	9,756	10,837	13,365
Subtotal Defense Nuclear Nonproliferation	**93,747**	**97,626**	**102,818**	**107,729**
Total, NNSA	**1,043,354**	**1,010,157**	**1,027,794**	**1,046,478**

EMPLOYMENT:

	FY 2007	FY 2008	FY 2009
Contractor Employment (End of Year)			
NNSA	4,978	4,618	4,477
Other	2,213	2,062	2,072
Total Facility	**7,191**	**6,680**	**6,549**

Congressional Items of Interest: Construction completion of the National Ignition Facility in FY 2009.

Major Changes or Shifts: None

Site Description

INTRODUCTION:

The Lawrence Livermore National Laboratory (LLNL) is located on a one-square-mile site in Livermore, California, with a larger (10-square mile) remote explosives testing site (Site 300) situated 18 miles east of the main Livermore site.

The LLNL has a primary role in the Department of Energy/National Nuclear Security Administration (DOE/NNSA) mission special capabilities, required for stockpile stewardship and nonproliferation activities as well as homeland security, to meet enduring national needs in conventional defense, energy, environment, biosciences, and basic science, as well as enhancing the competencies needed for the national security mission. The site is aligned with Complex Transformation activities. For LLNL, this includes eliminating quantities of special nuclear materials from the Laboratory, planning for disposition of Site 300, and establishing shared user facilities to more efficiently maintain experimental capabilities such as the National Ignition Facility (NIF).

ACTIVITIES:

Directed Stockpile Work (DSW)
The LLNL DSW effort supports three major areas: Life Extension Programs (LEPs), enduring weapon system assessments, and certification and stockpile support. LEPs and enduring systems directly support weapons systems, while the Stockpile Services budget category contains, for instance, activities that support multiple weapons systems, including, plutonium, High Energy Density/Above Ground Experiment (HED/AGEX) experiments, Nuclear Safety Research & Development (R&D), surveillance management and subject matter experts, container design, assessment and certification, and weapons response support to the plants. The W80 LEP effort at LLNL was terminated in FY 2007, requiring transition of personnel, and engineering and development efforts to other DSW activities in FY 2008 and beyond.

In FY 2007, the LLNL design was selected for the Reliable Replacement Warhead-1 (RRW1) or WR1. Although the RRW was cancelled in FY 2008, $5,000,000 in annual funding has been provided to LLNL for FY 2009 - FY 2013. The funding will enable maturation of the RRW to address questions raised by the JASON review of RRW feasibility study activities. Design refinement is necessary to establish parameters for potential impact on certification among other things. Without further design work, there is insufficient detail available to use this design to resolve certification questions raised by the JASON review. This funding will also facilitate continued progress on the Phase 2A RRW concept and design work, and documenting that work to support future administration decisions on options for our nuclear weapons stockpile. The Department of Defense and the Joint DoD-DOE Nuclear Weapons Council fully support continuing efforts to examine how the RRW can address issues of safety, security and long-term reliability of the nation's nuclear deterrent.

In FY 2009, LLNL is responsible for four enduring weapons systems: the W62, W80, B83, and W87; the W84 in the inactive stockpile; and Complex Transformation activities. In addition, LLNL will be supporting numerous nuclear weapons complex and stockpile transformation activities.

Science Campaign
The LLNL has responsibility for developing the tools and methodology to assess and certify (via the Quantification of Margins and Uncertainty [QMU] process) the safety, reliability, and performance of the stockpile systems for which LLNL is responsible. These tools and methodology also support ongoing activities in LEPs, Significant Finding Investigations (SFI), and Laboratory-to-Laboratory Peer Reviews. The Science subprogram activities are:

- *Advanced Certification:* Within the Science Campaign, the Advanced Certification line will continue efforts begun in FY 2008 to review, evaluate and implement key recommendations from the JASON review of RRW regarding approaches to establishing an accredited warhead

certification plan, without nuclear testing, in an era where changes to nuclear components will occur due to aging or design concerns. A report to Congress to be provided in May, as directed by the FY 2008 Consolidated Appropriations Act (P.L. 110-161), will address plans for achieving the Advanced Certification goals.

- *Primary Certification Assessment:* As the QMU tools and methodology developed as part of the subprogram are validated, they will be used in assessment work required to support DSW activities at LLNL. LLNL also has responsibility to execute an experimental program of plutonium experiments that support assessment and certification, and the validation of Advanced Simulation and Computing (ASC) codes and physics-based models for QMU development and application. Using QMU methodology, LLNL will continue to identify and quantify technical areas with the largest uncertainties and impact to stockpile performance and focus future effort to reduce uncertainties and quantify margins. Two major products of these efforts are program plans for the LLNL Hydrotest Program and Plutonium Experiments programs. These plans are to be coordinated with Los Alamos National Laboratory (LANL) in the National Hydrotest Plan and the National Primary Physics and Certification Plan. Another major activity is the development of the project for application to equation of state characterization at very high pressures. The project will conduct a series of isentropic compression experiments (ICEs) that are driven by a High Explosive Pulsed Power (HEPP) system. LLNL will also continue efforts for experiments on the National Ignition Facility.

- *Dynamic Materials Properties:* The LLNL work in this subprogram extends key experimental capabilities, data analysis, and materials models (used by both the Primary Assessment Technology and Secondary Assessment Technology subprograms). The focus is on the experimental activities required to support the development of accurate, predictive, physics-based models of materials properties and behavior under relevant conditions. The development of such models and subsequent code insertion is supported through the closely coordinated ASC Physics and Engineering Models subprogram. This activity supports experiments and data analysis at U1a and the Joint Actinide Shock Physics Experimental Research (JASPER) Facility, and uses a wide range of other experimental tools to create conditions of static and dynamic high pressure and temperature and enable investigations of the dynamic response of materials under ultra-high-pressure conditions of shock loading.

- *Advanced Radiography:* The scope of this subprogram activity is to improve the capability to experimentally infer the integral performance of the primary stage of a nuclear weapon. This supports evaluation of the margins and uncertainties for the continuing certification of reliability and safety of the stockpile (Science Campaign and Directed Stockpile Work). Radiographic hydrotest data are critical to major weapon programs, including the current LEPs, and the development of modern baselines for all weapon systems. In addition to LLNL radiographic facilities, LLNL will also support the Dual-Axis Radiographic Hydrotest (DARHT) Facility, as defined by the DARHT refurbishment and commissioning project execution plan.

- *Secondary Assessment Technologies:* The LLNL subprogram activity has responsibility for developing the tools and capabilities required to understand the factors that control secondary yield and to use these tools to reduce uncertainties in secondary performance. These activities support assessments of the safety, reliability, and performance of the LLNL stockpile weapons, including ongoing activities in LEPs and Significant Finding Investigations (SFIs). Along with advanced simulation and computing capabilities, as these tools and methodology are validated, they will be delivered to the DSW Program for assessments required to support directed stockpile activities at

LLNL. In FY 2009, LLNL will continue to develop high energy density physics platforms of ICF facilities to focus on increased understanding of secondary energy balance and hydrodynamics to develop a more complete understanding of stockpile weapons. Using QMU methodology, LLNL will continue to identify and quantify technical areas with the largest uncertainties and impact to stockpile performance and focus future effort to reduce uncertainties and quantify margins.

- *Transformational Assessment Technologies:* In FY 2008, the LLNL subprogram will continue to provide a unique combination of capabilities for the National Hydrotest Plan. In addition, LLNL will invest in the development of new advanced technology for diagnosing hydrotest experiments, including technology for high-resolution multi-MeV pulsed sources that are not currently available, but may be required, for future experiments. In FY 2009 and beyond, efforts will be refocused on the development of new tools to address the key issues in ignition and boost identified by the Primary Certification subprogram and emphasize development of new innovative pulsed power technology, which enables smaller, more efficient x-ray sources, and unique diagnostics for radiography.

Engineering Campaign
The Engineering Campaign activity provides the Nuclear Weapons Complex with modern tools and capabilities in engineering sciences and technologies to ensure the safety, security, reliability, and performance of the current and future U.S. nuclear weapon stockpile, and a sustained basis for stockpile certification. The LLNL portion of the Engineering Campaign supports the following subprograms: Enhanced Surety, Weapon System Engineering Assessment Technology, Nuclear Survivability and Effects, and Enhanced Surveillance.

Readiness Campaign
The LLNL Advanced Design and Production Technologies (ADAPT) activity is the originator of several systems currently in the nuclear stockpile, and LLNL must ensure and enable the reliable manufacturing and maintenance of its weapon designs by nuclear weapons complex production agencies. As such, LLNL has established unique capabilities in the development and deployment of materials, technologies, techniques, and processes related to weapons production and re-certification that are critical elements of ADAPT. LLNL centers of excellence in design, modeling, simulation, materials processing, high explosives development, non-destructive evaluation, and information technologies enable ADAPT efforts that, in turn, are of direct benefit to DSW, LEPs and Enhanced Surveillance. Beginning in FY 2009, the Readiness Campaign will combine both capability development, heretofore funded from the ADAPT subprogram, and capability deployment within the Nonnuclear Readiness, High Explosives and Weapons Operations, and Stockpile Readiness subprograms for increased efficiency, sustainability and accountability at the sites. Some ADAPT projects may be funded from one of the other subprograms.

Additionally, the LLNL provides support to High Explosives and Weapons Operations for high explosives diagnostics, development and qualification.

Pit Manufacturing and Certification Campaign
In FY 2007, the Pit Manufacturing and Certification Campaign successfully completed its multi-year goal of re-establishing a pit manufacturing capability with the production of 10 war-reserve W88 pits. With the accomplishment of this goal, beginning in FY 2009, the Pit Manufacturing and Certification Campaign will be disestablished and the activities will be realigned with DSW (manufacturing) and the Science Campaign (certification).

Advanced Simulation and Computing (ASC) Campaign
The LLNL ASC activities will focus in three major areas: maintaining the world-class, national supercomputing user facility that enables reliable and responsive computer simulations throughout the laboratory complex; development and application of simulation tools for the: annual certification, the LEPs, SFIs and the mission priorities of the SSP including the continuing improvement of predictivity; and application to national nuclear security mission needs including the NEST, warhead dismantlement, nuclear attribution, effects and emerging threats. In particular, LLNL will continue its leadership in the deployment of Tri-laboratory Productivity On-Demand (TriPoD) capabilities on all newly procured capacity clusters enabling a seamless ASC user environment for capacity computing. LLNL will also be responsible for the forward looking investments in Sequoia, a computing platform to be sited in 2011 that will perform the large number of demanding simulations needed for quantification of uncertainties to meet the long-term programmatic goals as outlined in the ASC Roadmap and ASC Platform Strategy. This work will include bringing to production the initial delivery system, Dawn, which will allow the tri-laboratory to scale weapons applications to make use of the very large Sequoia system, to be delivered in 2011. In 2009, LLNL will continue its work to develop, implement, and apply a suite of physics-based models and high-fidelity databases as embodied in the ASC integrated performance simulation codes to enable predictive simulation of the initial conditions for primary performance – a stretch goal on the ASC Roadmap. ASC software, models, and hardware serve as a central element of the National Boost Initiative. LLNL will also develop, implement, and validate a suite of physics-based models, high-fidelity databases, and integrated codes in support of Full Operational Capability in the Defense Threat Reduction Agency's National Technical Nuclear Forensics Program. LLNL's validated integrated performance codes will continue to support the SSP mission while pursuing the goals of the ASC National Code Strategy under development.

The national ASC Campaign will continue its Complex Transformation process based on Secretary of Energy Advisory Board recommendations and NNSA guidance that requires a reduced computing infrastructure footprint. The transformation includes operating capability platforms under the Capability Computing Campaign (CCC) governance model, in the manner of a national user facility, and the reduction in number of its weapons program computing sites from three to two. This transformation will have an impact on computing demand at LLNL. Although the program seeks to minimize disruption to weapons programmatic work, this transformation will have a cost to ASC in term of both dollars and compute cycles.

Inertial Confinement Fusion Ignition and High Yield (ICF) Campaign
The ICF activity at LLNL is focused on the construction of the National Ignition Facility (NIF) and its use for ignition and other high energy density physics experiments in support of the Stockpile Stewardship Program (SSP). The LLNL is responsible for construction of the NIF and also for oversight of the National Ignition Campaign, an integrated national effort to demonstrate ignition at NIF. LLNL also coordinates complex-wide construction and installation of diagnostics and other experimental equipment required to make NIF a fully functioning user facility for the broader user community.

The NIF is a 192-beam laser due for completion in FY 2009. First NIF ignition experiments are scheduled for mid-FY 2010. The NIF ignition experiments will provide a means to investigate thermonuclear burn related issues central to assessment of the legacy and evolving nuclear stockpile. Ignition and other experiments in areas such as radiation flow, complex hydrodynamics, and material properties support ongoing stockpile assessment via the quantification of margins and uncertainties methodology. Approximately 15 percent of NIF experiments will be made available to the basic science community and other users external to the NNSA. The LLNL effort also executes high energy density

physics experiments in support of the SSP at the University of Rochester Laboratory for Laser Energetics (OMEGA), High Atomic Number Element-Z Accelerator / "Z" Refurbishment Facility (Z/ZR), and other facilities, and develops many of the advanced targets required to support these experiments.

Readiness in Technical Base and Facilities (RTBF)
The Stockpile Stewardship Program at LLNL relies heavily on a wide variety of experimental, computational, fabrication, and special materials-handling facilities, and related support facilities and infrastructure to accomplish the objectives and milestones described in the FY 2008 Campaign and DSW program and implementation plans. Of these "Stockpile Stewardship Mission-Essential Facilities," the subset of direct, programmatic facilities and technical base (i.e. "capabilities"), that are in part or fully direct-funded through the RTBF program includes the Nuclear Materials Technology Program (NMTP) facilities (Superblock), the light gas guns (B341), the High Explosive Applications Facility (HEAF), the open air firing sites and Contained Firing Facility (CFF) at Site 300, the Engineering test facilities at Site 300, the newly generated waste activities at the Radioactive and Hazardous Waste Management (RHWM) facilities, and management and operating (M&O) activities at the Nevada Test Site. Of the total RTBF program at LLNL, the largest program element is Operations of Facilities which includes funding for removal of Category I and II Special Nuclear Materials from the Livermore site.

Environmental Projects and Operations – Long-Term Stewardship
All legacy environmental cleanup activities at LLNL-Main Site were completed at the end of FY 2006 by the Office of Environmental Management. Long-Term Stewardship (LTS) began at LLNL-Main Site in FY 2007. This LTS program was managed by NNSA in FY 2007 but funded by EM due to the terms of the Continuing Resolution not allowing functional transfers. For FY 2008 and FY 2009, LTS activities include, but are not limited to program management, operation and maintenance of contaminated ground water treatment systems; inspection and maintenance of landfill caps (Site 300 only); soil vapor and groundwater monitoring, well field operations and maintenance; modeling; and access controls.

LTS activities are scheduled to begin in FY 2009 at LLNL-Site 300 after the completion of legacy environmental cleanup activities in FY 2008. The LLNL LTS activities are post-remediation activities to assure regulatory compliance and continued protection of public health and the environment.

Nuclear Weapons Incident Response
For the DOE and the NNSA's Office of Emergency Response, LLNL assists in operating, exercising, and maintaining DOE's capability to provide assistance to Federal, state and local government agencies for responding to radiological accidents and incidents. LLNL deploys trained, qualified technical and professional personnel and specialized equipment and provides research and development, training, exercises, operations, maintenance and required coordination with other Federal agencies and foreign governments to effectively address current and projected threats. Support for the National Technical Nuclear Forensics (NTNF) and Stabilization Implementation programs will continue in FY 2009. In addition, LLNL provides research and support to the Office of Emergency Operations with unique expertise in their efforts supporting the Office of Nuclear Counterterrorism.

Facilities and Infrastructure Recapitalization Program (FIRP)
FY 2009 allocated funding for FIRP provides for the recapitalization of aging facilities and infrastructure at the Lawrence Livermore National Laboratory to assure that the quality of the

infrastructure keeps pace with the Laboratory's scientific mission requirements. FIRP funds have reduced LLNL's deferred maintenance to a level consistent with industry standards.

For FY 2009, the recapitalization component of FIRP will continue to fund high-priority projects that restore and rehabilitate mission critical facilities and infrastructure, through the reduction of deferred maintenance, that support the transformation of the complex. Deferred maintenance reduction projects minimize the risks of unscheduled facility outages and improve the safety of personnel and equipment. Projects targeted for FY 2009 will continue to rehabilitate or replace aged and deteriorated equipment, elevators, roofs and the roads infrastructure. Specific examples include replacement and upgrades of high-efficiency particulate air filter housings, ductwork, Heating, Ventilation and Air Conditioning (HVAC) systems, low voltage electrical components, utilities (such as low conductivity water systems), existing capabilities (e.g., fusion target, material fabrication, high density physics and hydrodynamics) and associated equipment to ensure reliability and improve worker safety. The Laboratory aggressively participates in the complex-wide Roof Asset Management Program (RAMP).

Transformation Disposition
Transformation Disposition will fund the elimination of excess facility footprint that is high priority in support of NNSA mission objectives and goals. LLNL will dispose of facilities that align with the goals of transformation of the complex. TD funding will help support the elimination of these excess facilities starting in FY 2009 along with other excess facilities identified in the FY 2008 TYSP. In addition to execution of D&D projects, the FY 2009 request includes planning for FY 2010 TD projects. Planning and design of D&D projects in advance of execution leads to development of solid project cost estimates and schedules.

Defense Nuclear Security
The LLNL Defense Nuclear Security program provides protection measures consistent with the requirements documented in its Site Safeguards and Security Plan (SSSP). For FY 2009 the focus will be preparing for movement of category I/II SNM from the SuperBlock to other NNSA/DOE sites. To meet the 2012 de-inventory goal set by NA-10, LLNL should also continue to focus on improving the efficiency of the security program, including modernization of the security infrastructure and implementation of technology upgrades to reduce the need for protective force posts and patrols.

Cyber Security
The Cyber security program will focus on revitalization, which will enable NNSA to respond to its highest priorities and to address current and future risks; certification and accreditation for proper documentation of risks and justification of associated operations for systems at all sites; and, education and awareness that provides training for federal and contractor personnel to meet expanding skill requirements of NNSA cyber security and information environments.

Nonproliferation and Verification Research and Development
LLNL improves geographic models to locate and identify regional seismic events to support nuclear detonation detection assessments. LLNL will deliver field-calibrated models of the seismic response for additional, specified regions of interest, and will demonstrate prototype tools for the automation of incorporating newly acquired data into these models. LLNL develops and tests gamma and neutron detection materials for future commercial systems to search for and locate special nuclear material; and is a member of an inter-laboratory team to investigate methodologies to establish a scientific basis for attribution to determine the origin of fissile materials. LLNL serves as the inter-laboratory coordinator on testing optical remote sensing techniques for weapons of mass destruction proliferation detection/characterization; and is a recognized national leader in developing hyperspectral analysis

methods for standoff detection of gases and other materials over denied areas. LLNL provides research to develop hand-held sensors for detection of uranium oxide materials, laser vibrometry, state-of-the art research in the use of anti-neutrino detector systems for nuclear reactor monitoring applications, and advanced modeling of uranium enrichment processes. LLNL develops a broad area research electrical optical sensor system that can cover a large area with dynamic operational tasking and real time on-board processing

International Nuclear Materials Protection and Cooperation (MPC&A)
LLNL provides operational experience in civilian and defense nuclear material protection, control, and accounting in combination with institutional expertise in nuclear energy, international and domestic safeguards, and the assessment of the proliferation impacts on U.S. national security of foreign nuclear energy programs. LLNL provides security and engineering expertise in support of international MPC&A activities at several Russian Navy, Civilian, and Rosatom Weapons Complex sites. LLNL supports MPC&A sustainability and infrastructure projects for Ministry of Defense, Rosatom, GAN, Ministry of Transportation, and Russian Shipbuilding Agency with efforts in regulatory development and implementation, and a national accounting system.

Nonproliferation and International Security
LLNL assists the Dismantlement and Transparency Program by providing support for conducting technical exchanges and technology development under the Warhead Safety and Security Exchange Agreement, Highly Enriched Uranium (HEU) Purchase Agreement policy, HEU Transparency Implementation and development, Plutonium Production Reactor Agreement implementation, and development of nuclear transparency measures. In addition, LLNL assists technical analysis and technology development, assists regional security efforts in policymaking and negotiations regarding various nonproliferation and arms control regimes, and supports the nonproliferation activities under the new Global Nuclear Energy Partnership initiative. LLNL also provides International Regimes and Agreements with reviews of export controlled equipment, materials and software, and foreign customers, and analytical tools and technical references for use in developing recommendations on U.S. export licensing applications, international safeguards technology assessment, policy support and nonproliferation assessment, multilateral outreach through support efforts for policymaking and negotiations regarding various nonproliferation control regimes, and international cooperation, primarily in the Former Soviet Union but increasingly in transit states as well. For Global Security Engagement and Cooperation, LLNL supports the safeguards tools and methods development, International Atomic Energy Agency (IAEA) safeguards cooperation and verification of the Democratic People's Republic of Korea (DPRK) and other proliferant states, IAEA environmental sampling needs, vulnerability assessment support for foreign sites of interest, physical protection upgrades, training to foreign nationals as needed, and Additional Protocol outreach and training.

Global Threat Reduction Initiative
LLNL provides significant technical, scientific, and management expertise to one of the three key subprograms of GTRI –Remove—supporting the comprehensive GTRI approach to denying terrorists access to nuclear and radiological materials. The **Nuclear and Radiological Material Removal** subprogram supports the removal or disposal of excess WMD-usable nuclear and radiological materials from civilian sites worldwide.

LOS ALAMOS NATIONAL LABORATORY

TABLES

FUNDING BY PROGRAM:

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
NNSA			
Weapons Activities			
Directed Stockpile Work	246,058	190,234	375,489
Science Campaign	91,936	79,530	90,871
Engineering Campaign	25,520	25,082	24,183
Inertial Confinement Fusion Ignition and High Yield Campaign	12,898	12,659	12,945
Advanced Simulation and Computing Campaign	187,331	209,201	139,711
Pit Manufacturing and Certification Campaign	214,771	185,869	0
Readiness Campaign	7,367	7,069	7,111
Readiness in Technical Base and Facilities	386,422	425,283	461,706
Nuclear Weapons Incident Response	17,049	19,986	36,985
Facilities and Infrastructure Recapitalization Program	27,481	30,336	31,985
Transformation Disposition	0	0	22,000
Defense Nuclear Security	111,659	156,416	151,203
Cyber Security	16,184	17,910	17,727
Subtotal Weapons Activities	**1,344,676**	**1,359,575**	**1,371,916**
Defense Nuclear Nonproliferation			
Nonproliferation and Verification R&D	86,034	117,200	86,502
Nonproliferation and International Security	22,097	25,711	24,077
International Nuclear Materials Protection and Cooperation	51,340	59,661	44,051
Fissile Materials Disposition	28,904	0	0
Global Threat Reduction Initiative	11,444	16,595	18,700
Subtotal Defense Nuclear Nonproliferation	**199,819**	**219,167**	**173,330**
Total, NNSA	**1,544,495**	**1,578,742**	**1,545,246**

OUT-YEAR FUNDING:

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
NNSA				
Weapons Activities				
Directed Stockpile Work	369,266	352,838	328,909	332,262
Science Campaign	82,995	79,032	79,184	80,136
Engineering Campaign	25,495	25,175	27,437	28,557
Inertial Confinement Fusion Ignition and High Yield Campaign	13,253	10,919	10,205	11,999
Advanced Simulation and Computing Campaign	136,966	130,708	131,619	133,533
Pit Manufacturing and Certification Campaign	0	0	0	0
Readiness Campaign	10,865	11,222	6214	11414
Readiness in Technical Base and Facilities	496,600	555,265	597,093	611,891
Nuclear Weapons Incident Response	38,835	40,777	42,294	43,008
Facilities and Infrastructure Recapitalization Program	36,691	37,382	37,124	37,060
Transformation Disposition	28,229	28,000	27,500	23,700
Defense Nuclear Security	186,906	170,450	141,154	144,900
Cyber Security	17,514	18,039	18,362	19,887
Subtotal Weapons Activities	**1,443,615**	**1,459,807**	**1,447,095**	**1,478,347**
Defense Nuclear Nonproliferation				
Nonproliferation and Verification R&D	100,783	106,539	110,619	113,291
Nonproliferation and International Security	18,935	19,895	21,447	21,983
International Nuclear Materials Protection and Cooperation	44,797	45,021	44,870	45,851
Global Threat Reduction Initiative	6,233	6,322	7,022	8,660
Subtotal Defense Nuclear Nonproliferation	**170,748**	**177,777**	**183,958**	**189,785**
Total, NNSA	**1,614,363**	**1,637,584**	**1,631,053**	**1,668,132**

EMPLOYMENT:

	FY 2007	FY 2008	FY 2009
Contractor Employment (End of Year)			
NNSA	6,363	6,071	6,071
Other	2,403	2,293	2,293
Total Facility	**8,766**	**8,364**	**8,364**

Congressional Items of Interest:

Major Changes or Shifts: None

Site Description

INTRODUCTION:

The Los Alamos National Laboratory (LANL) is located on approximately 25,000 acres, adjacent to the town of Los Alamos, New Mexico.

The LANL is a multi-program laboratory, supporting research and a limited production mission predominantly in national security. The laboratory also supports environmental restoration, waste management, general science programs, homeland security, and work for others.

The Record of Decision for a Site-Wide Environmental Impact Statement for the continued operation of LANL was published September 20, 1999.

The site is aligned with Complex Transformation activities. Actions include: (1) reducing facility square footage required for weapons activities, (2) establishing shared user facilities to more cost-effectively manage expensive experimental computational and production capabilities (3) ensuring laboratory plutonium space efficiently supports interim pit manufacturing and complex-wide special nuclear materials consolidation, and (4) demonstrating organizational leadership required to achieve a more integrated, interdependent Nuclear Weapons Complex.

ACTIVITIES:

Directed Stockpile Work (DSW)
The LANL supports the surveillance and assessment of safety, reliability, and performance of the bombs and warheads for which LANL is the responsible Design Agency and for producing some components for all systems. This activity includes the Life Extension Programs (LEPs) for the B61-357 Alteration (Alt) and the W76-1 Modification (Mod).

Science Campaign
In its historic role as a nuclear weapons design laboratory, Los Alamos continues to have a robust science effort supporting science-based stockpile stewardship. A large portion of that effort is reflected in the work supported by the Science Campaign. The science subprogram activities are:

- *Advanced Certification:* Within the Science Campaign, the Advanced Certification line will continue efforts begun in FY 2008 to review, evaluate and implement key recommendations from the JASON review of RRW regarding approaches to establishing an accredited warhead certification plan, without nuclear testing, in an era where changes to nuclear components will occur due to aging or design concerns. A report to Congress to be provided in May, as directed by the FY 2008 Consolidated Appropriations Act (P.L. 110-161), will address plans for achieving the Advanced Certification goals.

- *Primary Certification:* Activities support the science (including theory, experiment, simulation, and analysis) necessary to develop and improve a validated capability for predicting and certifying primary performance, safety, and Quantification of Margins and Uncertainties (QMU) without additional nuclear tests. Approximately half of the effort for this subprogram effort is directed towards boost physics. Efforts in support of Dynamic Plutonium Experiments (DPE) are expected to transition into this sub-campaign.

- *Dynamic Materials Properties:* Develops physics-based, experimentally validated data and models of all stockpile materials, at a level of accuracy required by the Primary Certification and Secondary Assessment Technologies and Engineering Campaign.

- *Advanced Radiography and Transformational Technologies:* Supports development of technologies for three-dimensional imagery of imploding mock primaries, with sufficient time and space resolution to help resolve uncertainties in primary performance. With the completion of the Dual

Axis Radiographic Hydrodynamic Test (DARHT) 2nd axis refurbishment, the focus will turn to operations optimization of Radiographic tools and development of new transformation technologies.

- *Secondary Assessment Technologies*: Responsible for developing the tools and capabilities required to understand the factors that control secondary yield and to use these tools to reduce uncertainties in secondary performance. These activities support assessments of the safety, reliability, and performance of the LANL stockpile weapons, including ongoing activities in LEPs, and Significant Findings Investigation (SFIs). Along with advanced simulation and computing capabilities, as these tools and methodology are validated, they will be delivered to the DSW program for usage in assessment work required to support directed stockpile activities at LANL. In FY 2009, LANL will continue to develop high energy density physics platforms of Inertial Confinement Fusion (ICF) facilities to focus on increased understanding of stockpile weapons. Using Quantification in Margins and Uncertainties (QMU) methodology, LANL will continue to identify and quantify technical areas with largest uncertainties and impact to stockpile performance and focus future effort to reduce uncertainties and quantify margins.

Engineering Campaign
As the design agency for 60 percent of the total stockpile, Los Alamos is focused on the development of engineering-based development in support of the nuclear weapons stockpile. LANL has long recognized that, in addition to ensuring the nuclear stockpile is safe, secure, and reliable, there is a requirement to provide the most modern surety (i.e., safety, security, and use control) possible for nuclear warheads/bombs. The LANL portion of the Engineering Campaign consists of the following subprogram activities: Enhanced Surety, Weapon System Engineering Assessment Technology, Nuclear Survivability and Effects, and Enhanced Surveillance.

Inertial Confinement Fusion Ignition and High Yield (ICF) Campaign
The ICF Campaign provides quantitative experimental data and the physical underpinning needed for validation of advanced modeling required in nuclear weapons certification. It participates in the pursuit of laboratory ignition through utilizing unique Los Alamos scientific and technological capabilities. Los Alamos' major emphasis is to support the National Ignition Campaign developing designs and advanced diagnostics for National Ignition Facility (NIF) and utilizing Z and other High-Energy-Density facilities across the weapons complex.

Advanced Simulation and Computing (ASC) Campaign
The LANL ASC activities will focus in three major areas: maintaining a world-class, national supercomputing user facility at the Metropolis Center, coordinated with and complementing the Terascale Simulation Facility at LLNL to meet prioritized mission needs; annual certification, the LEPs, SFIs, and the mission priorities of the Stockpile Stewardship Program including the continuing improvement of predictivity and certification methodologies QMU; and application to national nuclear security mission needs including dismantlement, nuclear attribution, effects, and emerging threats. Examples of how LANL will contribute to collaborations with the NNSA/Nuclear Non-proliferation (NN) office include modeling work that addresses the neutron spectrum at all relevant times and the Equation of State for nontraditional threat materials. LANL will contribute to the final deployment and operation of Tri-laboratory Productivity On-Demand (TriPoD) capabilities for capacity computing that will enable a seamless ASC user environment. In 2009, LANL will continue to operate the base-Roadrunner capacity platform in general availability for weapon program activities and pending the results of an assessment, will install the Roadrunner Phase 3 platform utilizing accelerated cell technology in hybrid architecture. This advanced architecture system will enable Petaflops-scale

advances in weapons science and the investigation of new programming models for weapons performance codes as needed to scale to this level.

The national ASC Campaign has begun its Complex Transformation process based on Secretary of Energy Advisory Board recommendations and NNSA guidance that requires a reduced computing infrastructure footprint. The transformation includes operating capability platforms similar to that of a large-scale experimental facility and the reduction in number of its weapons program capability computing user facility sites from three to two. LANL will play a significant role in carrying out this transition as one of the two designated capability computing user facility sites, and is dedicated to a smooth transition that minimizes disruption to tri-laboratory weapons programmatic work.

Pit Manufacturing and Certification Campaign
In FY 2007, LANL produced and shipped the first Diamond-Stamped W88 pit manufactured since the Rocky Flats Plant ceased production. The Pit Manufacturing and Certification Campaign will deliver a final physics assessment titled "Certification and Qualification Report for the W88/Mk5 with a LANL-Built Pit" by the end of FY 2007, which supports an update to the W88 Major Assembly Release (MAR).

In FY 2007, the Pit Manufacturing and Certification Campaign also successfully completed its multi-year goal of re-establishing a pit manufacturing capability with the production of 10 war-reserve W88 pits. With the accomplishment of this goal, beginning in FY 2009, the Pit Manufacturing and Certification Campaign will be disestablished and the activities will be realigned with DSW (manufacturing) and the Science Campaign (certification).

Readiness Campaign
At LANL, two Readiness subprogram activities are performed: Advanced Design and Production Technologies (ADAPT) and Nonnuclear Readiness. Additionally, Los Alamos provides support to Stockpile Readiness activities in cast technology development and insertion, as well as to High Explosives and Weapons Operations (HEWO) for high explosives diagnostics, development and qualification.

LANL's ADAPT activities reflect both design and production technology development – both major activities at LANL. The scope of work includes all LANL production activities plus supporting capabilities, such as secure networking and certain technical business practices. Activities are principally organized according to the product(s) they are intended to support (e.g., Detonators, Tritium, Pits / Mock Pits, and experimental hardware). Beginning in FY 2009, the Readiness Campaign will combine both capability development, heretofore funded from the ADAPT subprogram, and capability deployment within the Nonnuclear Readiness, HEWO, and Stockpile Readiness subprograms for increased efficiency, sustainability and accountability at the sites. LANL has a significant nonnuclear production activity in developing capabilities for Los Alamos and other facilities. Scope includes deployment of processes, capabilities, and infrastructure required to meet directive schedule requirements for production and surveillance of nonnuclear components. Activities at LANL support detonator manufacturing and component fabrication readiness.

Readiness in Technical Base and Facilities (RTBF)
The RTBF program supports a broad base of activities and facilities that enable the laboratory to meet its mission obligations to the NNSA and the nation. The LANL RTBF mission is to ensure that the site is implementing the technologies and methods necessary to make construction, operation, and maintenance of Defense Program (DP) facilities safe, secure, compliant, and cost effective. The

objective is to ensure that DP facilities and infrastructure are available to conduct the scientific, computational, engineering, and manufacturing activities of the Stockpile Stewardship Program. The LANL RTBF program effort will maintain facilities and technologies in an appropriate condition, such that they are not limiting factors in the accomplishment of the DP mission. The LANL Operations of Facilities activity includes the DP share of the cost to operate and maintain DP-owned programmatic facilities in mission capable mode, a state of readiness in which each facility is prepared to execute programmatic tasks identified in the subprograms. At LANL, DP direct-funded facilities include facilities supporting weapons engineering, tritium, weapons physics (DARHT, etc), neutron accelerator sciences Los Alamos Neutron Science Center (LANSCE), waste management, nuclear materials research and manufacturing (Technical Area (TA)-55 & Chemical and Metallurgical Research (CMR)) beryllium technology, and machining and fabrication shops. Mission capable work scope includes conventional facility management, infrastructure support, operation and maintenance of real property and special equipment, and compliance with security, environmental, safety and health requirements. Appropriate support for the long term viability of LANL's plutonium facilities (TA-55 and CMR) and waste processing activities requires incremental funding from users, both DP and non-DP. Initiation of cost recovery models in these areas is on track for FY 2009. Scope transfers that were established in FY 2006 should be eliminated with the implementation of the cost recovery models.

This activity also includes infrastructure support: Specific project activities to support consolidation and footprint reduction and out-year risk and/or cost redirection strategies, Line Item Other Project Costs (OPCs), general plant project construction, seismic studies, authorization basis, beryllium rule, and program management. The RTBF activity at LANL also includes landlord costs associated with the conveyance and transfer of land at LANL to the County of Los Alamos and San Ildefonso Pueblo.

Program activities in support of nuclear materials recycle and recovery operations are also contained within RTBF. The LANL support within this program activity is central to the material consolidation activities across the complex.

RTBF Construction

There are a number of line item projects in RTBF per the Integrated Construction Program Plan (ICPP). One key element of long-range planning is Integrated Nuclear Planning (INP). The INP project is a high-level effort to plan the future nuclear facilities within TA-55. The INP presently includes the integration of the Chemical and Metallurgy Research Facility Replacement (CMRR) project; infrastructure upgrades at TA-55, including a new radiography capability; proposed safeguards and security upgrades; and two new waste management facilities for treatment of radiological liquid waste and processing of transuranic solid waste. These new and refurbished facilities provide a long-term, flexible infrastructure to support current and future plutonium missions.

Facilities and Infrastructure Recapitalization Program (FIRP)

Recapitalization funded projects are providing improvements to mission facilities and infrastructure that are supporting Transformation of the Complex. These improvements are accomplished by reducing legacy deferred maintenance resulting in improved worker safety and improved facility reliability. Mission facilities and infrastructure improvements directly support Defense Programs (DP) activities and priorities within both Directed Stockpile Work and Stockpile Stewardship Campaigns.

For FY 2009, system reliability through electrical system upgrades; Heating, Ventilation and Air Conditioning (HVAC) upgrades; and general construction deficiencies repair projects highlight the facilities management approach to revitalizing the site. The FY 2009 request includes GPP projects that support transformation of the complex by either replacing obsolete facilities or renovating existing

facilities to meet current and future mission requirements. LANL continues to participate in the complex-wide Roof Asset Management Program (RAMP) and is achieving improved cost efficiencies and improved life extension of NNSA's roofing assets. In addition to Recapitalization and RAMP projects, the FY 2009 request includes planning for FY 2010 Recapitalization projects. Design of general plant and expense projects in advance of construction is leading to development of solid project cost estimates and schedules thereby leading to better project execution.

Transformation Disposition (TD)
Transformation Disposition will fund the elimination of excess facility footprint that is high priority in support of NNSA mission objectives and goals. LANL initiated a footprint reduction activity in FY 2007 with a reduction goal commitment to reduce the overall footprint at the site by two million square feet. TD funding will help support the elimination of these excess facilities starting in FY 2009 along with other excess facilities identified in the FY 2008 TYSP. In addition to execution of D&D projects, the FY 2009 request includes planning for FY 2010 TD projects. Planning and design of D&D projects in advance of execution leads to solid project cost estimates and schedule.

Nuclear Weapons Incident Response
For the DOE and the NNSA's Office of Emergency Response, LANL assists in operating, exercising, and maintaining DOE's capability to provide assistance to Federal, state and local government agencies for responding to radiological accidents and incidents. LANL deploys trained, qualified technical and professional personnel and specialized equipment and provides research and development, training, exercises, operations, maintenance and required coordination with other Federal agencies and foreign governments to effectively address current and projected threats. Support for the National Technical Nuclear Forensics (NTNF) and Stabilization Implementation program which began in FY 2008 and will continue in FY 2009. In addition, LANL provides research and support to the Office of Emergency Operations with unique expertise in their efforts supporting the Office of Nuclear Counterterrorism.

Defense Nuclear Security
The LANL Defense Nuclear Security program provides laboratory protection measures consistent with requirements documented in its Site Safeguards and Security Plan (SSSP). During FY 2009, the laboratory will continue the Nuclear Materials Safeguards and Security Upgrade Project (NMSSUP) Phase II, completion; to upgrade access control systems begun in FY 2005. LANL should also continue to focus on improving the efficiency of the security program, including modernization of the security infrastructure and implementation of technology upgrades to reduce the need for protective force posts and patrols.

Cyber Security
The Cyber security program will focus on revitalization, which will enable NNSA to respond to its highest priorities and to address current and future risks; certification and accreditation for proper documentation of risks and justification of associated operations for systems at all sites; and, education and awareness that provides training for federal and contractor personnel to meet expanding skill requirements of NNSA cyber security and information environments.

Nonproliferation and Verification Research and Development
LANL provides the U.S. Government with improved analytic tools and sensors to discriminate earthquakes and industrial activities from nuclear detonations. LANL continues to deliver the next generation of satellite based electromagnetic pulse sensors and radiation sensors for nuclear detonation detection systems. The laboratory will develop expert unattended methods and handheld radiation detection systems to support monitoring operations for compliance to future nonproliferation policies.

LANL will continue developing innovative algorithms and specialized processors to process voluminous quantities of remote sensing data into the specific information required by decision makers. LANL provides leadership in the definition of low-frequency signals to support nonproliferation mission areas and collection of nuclear materials signatures in nuclear fuel cycle facilities. LANL continues to conduct the Cibola Flight Experiment (CFE). The Cibola payload system has a science mission to study lightning, ionospheric disturbances, and other sources of radio frequency (RF) atmospheric noise. Additionally, the CFE provides a testbed to study on-orbit reconfigurable hardware and software. The CFE will help develop scientists' understanding of ionospheric weather morphology, along with developing a predictive capability in determining the effects on communications and other space operations. LANL has successfully developed a low light imaging photon count sensor.

Global Threat Reduction Initiative
LANL provides significant technical, scientific, and management expertise to two of the three key subprograms of GTRI –Remove, and Protect—supporting the comprehensive GTRI approach to denying terrorists access to nuclear and radiological materials. The Nuclear and Radiological Material Removal subprogram supports the removal or disposal of excess WMD-usable nuclear and radiological materials from civilian sites worldwide. The Nuclear and Radiological Material Protection subprogram supports the protection of at-risk WMD-usable nuclear and radiological materials worldwide from theft and sabotage until a more permanent threat reduction solution can be implemented.

International Nuclear Protection and Cooperation (MPC&A)
LANL provides a wealth of expertise to the MPC&A program through material accounting methodologies, specialized material verification techniques, project and construction management for storage facilities, and language specialization. LANL has designed and developed computerized accounting systems that are currently operating at several Russian enterprises. LANL is working with the NNSA in the use of material controls, particularly with the active-nonviolent insider threats when completing MPC&A upgrades at all Russian enterprises. Furthermore, LANL experts provide technical solutions to Second Line of Defense Core and Megaports programs including scientific analysis and testing of radiation detection systems. In addition, LANL provides support to other FSU countries.

Nonproliferation and International Security
LANL supports safeguards efforts, especially safeguards cooperation and verification of the DPRK nuclear weapons program dismantlement, and the nonproliferation activities under the new Global Nuclear Energy Partnership initiative. LANL supports export control work with operation of the Proliferation Information Network System (PINS), reviews of export controlled equipment, materials and software, and analytical tools and technical references to use in developing recommendations on U.S. export license applications, policy support in the development of nuclear transparency measures, fuel cycle analysis and international safeguards technology assessments, and policy support and nonproliferation assessments in the areas of international regimes and regional security. In addition, LANL provides support for commercialization efforts globally and efforts to downsize the Russian Nuclear Weapons complex and helps create business opportunities for displaced weapons workers.

NEVADA TEST SITE

TABLES

FUNDING BY PROGRAM:

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
NNSA			
Weapons Activities			
Directed Stockpile Work	43,011	49,796	41,459
Science Campaign	39,703	29,702	30,700
Inertial Confinement Fusion and High Yield Campaign	0	3,000	0
Pit Manufacturing and Certification Campaign	433	0	0
Readiness in Technical Base and Facilities	118,597	124,260	142,338
Secure Transportation Asset	179	180	195
Nuclear Weapons Incident Response	37,316	40,459	44,007
Facilities and Infrastructure Recapitalization Program	13,228	13,211	13,929
Transformation Disposition	0	0	950
Subtotal Weapons Activities	**252,467**	**260,608**	**273,578**
Defense Nuclear Nonproliferation			
Nonproliferation and Verification R&D	6,210	8,485	6,138
Nonproliferation and International Security	0	0	0
International Nuclear Materials Protection and Cooperation	5,031	3,405	393
Fissile Materials Disposition	1,967	300	200
Global Threat Reduction Initiative	2,351	1,787	800
Subtotal Defense Nuclear Nonproliferation	**15,559**	**13,977**	**7,531**
Congressionally Directed Projects	0	17,730	0
Total, NNSA	**268,026**	**292,315**	**281,109**

OUT-YEAR FUNDING:

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
NNSA				
Weapons Activities				
Directed Stockpile Work	36,951	36,592	35,762	38,436
Science Campaign	30,561	28,418	28,496	28,790
Pit Manufacturing and Certification Campaign	0	0	0	0
Readiness in Technical Base and Facilities	102,444	106,674	124,582	122,341
Secure Transportation Asset	201	207	213	219
Nuclear Weapons Incident Response	45,708	47,995	50,395	52,914
Facilities and Infrastructure Recapitalization Program	15,978	16,279	16,166	16,139
Transformation Disposition	950	0	0	0
Subtotal Weapons Activities	**232,793**	**236,165**	**255,614**	**258,839**
Defense Nuclear Nonproliferation				
Nonproliferation and Verification R&D	8,103	8,713	9,145	9,368
Nonproliferation and International Security	667	701	755	774
International Nuclear Materials Protection and Cooperation	329	343	347	355
Fissile Materials Disposition	200	225	225	225
Global Threat Reduction Initiative	290	295	323	400
Subtotal Defense Nuclear Nonproliferation	**9,589**	**10,277**	**10,795**	**11,122**
Congressionally Directed Projects	0	0	0	0
Total, NNSA	**242,382**	**246,442**	**266,409**	**269,961**

NOTE: Funding for Defense Nuclear Security and Cyber Security is provided through the Nevada Site Office.

EMPLOYMENT:

	FY 2007	FY 2008	FY 2009
Contractor Employment (End of Year)			
NNSA	2,323	2,042	2,085
Other	885	918	840
Total Facility	**3,208**	**2,960**	**2,925**

Congressional Items of Interest:

Major Changes or Shifts: None

Site Description

INTRODUCTION:

The Nevada Test Site (NTS) is located 65 miles northwest of Las Vegas and is approximately 1,375 square miles. The NTS is surrounded by the Department of Defense Nevada Test and Training Ranges and unpopulated land controlled by the U.S. Bureau of Land Management. In addition to the NTS, the National Nuclear Security Administration (NNSA) Nevada Site Office assets include facilities in North Las Vegas; Nellis Air Force Base (AFB), NV; Andrews AFB, MD; Livermore, CA; Los Alamos, NM; and Santa Barbara, CA.

The NTS is aligned with Complex Transformation activities. For NTS, this includes supporting the consolidation of Category I/II quantities of special nuclear materials at other sites and long-term consolidation of hydrodynamic testing and other high-hazard experiments. The current Environmental Impact Statement and the associated Record of Decision allow for the execution of a variety of complex and unique projects and experiments, while ensuring the protection of the workers, the public, and the environment. The existing assets of the NTS represent a unique and indispensable extension of the National Weapons Laboratories experimental capabilities, and are essential to the NNSA Office of Defense Programs and the nation's ability to return to underground nuclear testing, should the President direct it.

The current and future missions at the NTS are consistent with the Stockpile Stewardship and Management Programmatic Environmental Impact Statement, December 1996; the NTS Site-Wide Environmental Impact Statement (SWEIS), December 1996; and the Supplemental Analysis to the NTS EIS, July 2002.

ACTIVITIES:

Directed Stockpile Work (DSW)

The NTS DSW scope falls within the DSW Stockpile Services activities, which support multiple weapons systems, studies, and other Research and Development (R&D) activities to support future stockpile requirements. The NTS primarily supports DSW by developing and executing Equation of State (EOS) experiments and other highly diagnosed dynamic experiments as defined in the Dynamic Plutonium Experiment (DPE) Plan. The work scope includes support for DPEs and high explosive pulse power experiments, test bed construction development and design, and procurement and operation of diagnostics systems. Also included are diagnostic development activities required to support future experiments, including research and development, control systems, data acquisition, and data analysis.

In FY 2008, Congress provided funding for the Device Assembly Facility (DAF) at the Nevada Test Site for the upgrade of the facility to support additional missions.

In FY 2009, the NTS will continue to support the National Weapons Laboratories by supporting Lawrence Livermore National Laboratory (LLNL) in defining and executing the series of High Explosive Pulse Power (HEPP) experiments and supporting Los Alamos National Laboratory (LANL) in fielding the large bore powder gun experiments at U1a and execute the "Barolo" series of DPEs. For the Sandia National Laboratories (SNL), the NTS will provide technical input, analysis and interpretation of time-resolved experiments fielded at NTS as part of the National Hydrotest plan.

Science Campaign

The NTS participates in the following Science Campaign activities:

- *Primary Assessment Technology:* Conduct scientific experiments to support the experimental study and improvement of material models with emphasis on Pu. Nevada will continue to assist LLNL in defining and executing a series of High Explosive Pulse Power (HEPP) experiments as part of the Phoenix project. The NTS provides support in the area of test-bed engineering and construction, diagnostics fielding, controls, and data reduction for the DPEs. In FY 2009, the NTS will provide diagnostic development support to LLNL B-Division. The NTS will support both LLNL and LANL reanalysis of underground test (UGT) data using modern statistical analysis methods in support of the Stockpile Stewardship Program Weapons Activities.

- *Transformational Assessment:* Within Primary Assessment Technology, the NTS supports Transformational Assessment by supporting the LANL Dual Axis Radiographic Hydrodynamics Test (DARHT) and the proton radiography experiments at the Los Alamos Neutron Science Center (LANSCE) and Brookhaven National Laboratory. In FY 2009, the NTS will continue to provide accelerator diagnostics for DARHT II activities, focusing on LANL experiments. The Proton Radiography (PRad) group will support experiments at LANSCE Line C by providing diagnostics equipment, machined hardware, and personnel for troubleshooting, and support during the experiments, conducting image analyses, and providing reports to LANL.

- *Dynamic Materials Properties:* The NTS supports the National Weapons Laboratories subprograms by developing diagnostics and fielding experiments. In FY 2009, the NTS will continue to support dynamic materials experiments data collection at the Special Technologies Laboratory (STL) Boombox. Special Nuclear Material (SNM) experiment series and diagnostic advancements at the Joint Actinide Shock Physics Experimental Research (JASPER) Facility are planned with LLNL. The NTS will also support dynamic experiments and diagnostic development leveraging gas gun at LANL and large bore powder gun capabilities at U1a. The NTS will also provide support to SNL in experiments (e.g., ICE - EOS experiments on weapon materials), pulsed power source development, and diagnostic advancements (e.g., VISAR, Pyrometry, and X-ray diffraction).

- *Secondary Assessment Technology Subprogram:* The NTS provides diagnostic development, calibration, fielding, and experiment data collection related to radiation flow studies performed by LLNL and SNL, including advances in optical, x-ray, and neutron detector development. In addition, the NTS Livermore Technical Facility provides National Institute of Standards and Technology-traceable calibration facilities for radiation-flow diagnostics needed for High Energy Density (HED) physics experiments, the laser at the University of Rochester Laboratory for Laser Energetics (OMEGA) and LLNL lasers in support of LLNL. The NTS will also continue to support SNL in core diagnostic support and advanced diagnostics development and characterization on experiments, including x-ray, optical, neutron, other diagnostic-related capabilities, and sources and processes for improving their absolute calibration.

Readiness in Technical Base and Facilities (RTBF)

The NTS RTBF program provides the Stockpile Stewardship Program with the essential physical and operational infrastructure required to conduct the engineering, scientific, and technical activities of the Stockpile Stewardship Program. The objective of the NTS RTBF program is to ensure the correct program-related facilities and activities are maintained in a mission capable state to allow experimental operations to occur in a safe, secure, reliable, and cost effective manner. At the NTS, facilities and activities that are direct-funded are contained in two subprogram elements: Operations of Facilities and Program Readiness. The Operation of Facilities element includes the operation and maintenance of the following NNSA-owned programmatic facilities: Device Assembly Facility (DAF), U1a Complex, JASPER, Control Point Complex, High Explosive Facility, and the North Las Vegas Complex. The Atlas Pulse Power Facility will continue to be maintained in a cold-standby condition. Activities supported under Program Readiness include logistical support to the National Laboratories; support to Other Federal Agencies; Environmental Compliance and Restoration with respect to Defense legacy issues, which includes the Borehole Management Program; and Equipment Revitalization.

Nuclear Weapons Incident Response

For the DOE and the NNSA Office of Emergency Response, NTS assists in operating, exercising, and maintaining DOE's capability to provide assistance to Federal, state and local government agencies for responding to radiological accidents and incidents as well as support assistance for any DOE or National

emergency. NTS deploys trained, qualified technical and professional personnel and specialized equipment and provides research and development, training, exercises, operations, maintenance and required coordination with other Federal agencies and foreign governments to effectively address current and projected threats. Support for the National Technical Nuclear Forensics (NTNF) and Stabilization Implementation programs will continue in FY 2009. The NNSA Nuclear Emergency Support Team (NEST) is based at Nellis AFB, Las Vegas, NV, for West Coast response and Andrews AFB, MD, for East Coast response. The NEST can respond to any type of emergency involving radioactive materials in the U.S. or abroad.

Facilities and Infrastructure Recapitalization Program (FIRP)
FIRP activities planned for FY 2009 emphasize mission facility and infrastructure projects to meet state and federal requirements. Specific to this year's program are electrical improvements that support OSHA standards. In addition, more reliable power will be distributed to site facilities and introduction of new electrical boiler replacements will improve air quality. The upgrade and refurbishment of water system tanks and distribution systems will provide reliable water supply to mission dependent facilities. The refurbishment of site facilities will restore compliance with life safety codes. Roadway improvement projects will enhance the safe operation of vehicles for normal operations and emergency response at the NTS. Roadway improvements will reduce escalating maintenance costs and interruption of service. The Nevada Site Office continues to participate in the complex-wide Roof Asset Management Program (RAMP) and is achieving improved cost efficiencies and life extension of NNSA's roofing assets.

Defense Nuclear Security
The NTS Defense Nuclear Security program is funded through the Nevada Site Office and provides site security consistent with requirements documented in its Site Safeguards and Security Plan. For FY 2009 the focus for NTS will be on achieving compliance with the 2005 DBT policy, including full implementation of all upgrades identified in the site's approved vulnerability analyses documents and the DNS-approved DBT implementation plan. NTS should also continue to focus on improving the efficiency of the security program, including modernization of the security infrastructure and implementation of technology upgrades to reduce the need for protective force posts and patrols.

Cyber Security
The NTS Cyber Security program is funded through the Nevada Site Office. The Cyber security program will focus on revitalization, which will enable NNSA to respond to its highest priorities and to address current and future risks; certification and accreditation for proper documentation of risks and justification of associated operations for systems at all sites; and, education and awareness that provides training for federal and contractor personnel to meet expanding skill requirements of NNSA cyber security and information environments.

Secure Transportation Asset
The NSTEC provides management, quality assurance, personnel training, and preventative and corrective maintenance services in support of the Maryland Relay Station. The facility is part of the Transportation Command and Control System, a vital communications system dedicated to the tracking and safeguarding of special nuclear material shipments.

Nonproliferation and Verification Research and Development
The NPTEC provides capabilities to facilitate test and evaluation of nonproliferation detection technologies under realistic scenarios.

PANTEX PLANT

TABLES

FUNDING BY PROGRAM:

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
NNSA			
Weapons Activities			
Directed Stockpile Work	165,132	157,035	176,424
Engineering Campaign	2,995	4,260	2,818
Readiness Campaign	11,699	8,663	4,892
Readiness in Technical Base and Facilities	135,864	158,389	152,683
Secure Transportation Asset	6,271	5,489	5,815
Nuclear Weapons Incident Response	1,335	890	935
Facilities and Infrastructure Recapitalization Program	22,443	21,041	22,184
Environmental Projects and Operations Program/LTRA	0	0	8,262
Transformation Disposition	0	0	4,900
Defense Nuclear Security	121,960	150,679	125,397
Cyber Security	3,150	4,096	7,081
Subtotal Weapons Activities	**470,849**	**510,542**	**511,391**
Defense Nuclear Nonproliferation			
Nonproliferation and International Security	324	377	353
Fissile Materials Disposition	4,600	0	0
Subtotal Defense Nuclear Nonproliferation	**4,924**	**377**	**353**
Total, NNSA	**475,773**	**510,919**	**511,744**

OUT-YEAR FUNDING:

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
NNSA				
Weapons Activities				
Directed Stockpile Work	167,456	171,647	180,454	175,630
Engineering Campaign	2,689	2,637	2,881	2,992
Readiness Campaign	14,434	8,135	1935	14,594
Readiness in Technical Base and Facilities	139,919	151,606	153,375	174,163
Secure Transportation Asset	5,989	6,169	6,354	6,546
Nuclear Weapons Incident Response	982	1,031	1,083	1,137
Facilities and Infrastructure Recapitalization Program	25,448	25,927	25,748	25,704
Environmental Projects and Operations Program/LTRA	8,328	8,098	8,358	8,314
Transformation Disposition	4,750	4,639	3,800	4,663
Defense Nuclear Security	141,056	147,048	147,960	151,888
Cyber Security	6,532	7,134	7,495	8,030
Subtotal Weapons Activities	**517,583**	**534,071**	**539,443**	**573,661**
Defense Nuclear Nonproliferation				
Nonproliferation and International Security	869	914	984	1,008
Fissile Materials Disposition	0	0	0	0
Subtotal Defense Nuclear Nonproliferation	**869**	**914**	**984**	**1,008**
Total, NNSA	**518,452**	**534,985**	**540,427**	**574,669**

EMPLOYMENT:

	FY 2007	FY 2008	FY 2009
Contractor Employment (End of Year)			
NNSA	3,316	3,404	3,309
Other	48	32	31
Total Facility	**3,364**	**3,436**	**3,340**

Congressional Items of Interest: In FY 2009, the Pantex Plant is continuing to support the President's dismantlement goals and W76 Full-Production Rates.

Major Changes or Shifts: None

Site Description

INTRODUCTION:

The Pantex Plant (Pantex) is situated on 16,000 acres in the Texas Panhandle, approximately 17 miles northeast of Amarillo. Pantex has five primary operational missions: 1) Weapons Assembly, 2) Weapons Disassembly, 3) Weapons Evaluation, 4) High Explosive Research and Development, and 5) Interim Plutonium Pit Storage. The site is also aligned with Complex Transformation activities. For Pantex, this includes actions to improve throughput capacity, accelerate dismantlements, and support consolidation of special nuclear materials.

ACTIVITIES:

Directed Stockpile Work (DSW)
Pantex is the assembly/disassembly plant for all nuclear weapons. Pantex supports the Life Extension Program (LEP) First Production Unit (FPU) schedules, Seamless Safety for the 21st Century (SS-21) projects; weapon system surveillance, sustained retired systems dismantlement, and required production support. In FY 2007, the site exceeded the President's dismantlement goal and declared ready to start the W76-1 FPU.

In FY 2008, Congress transferred the funding for the Pit Disassembly and Conversion Facility (PDCF) construction project from the Office of Defense Nuclear Nonproliferation to DSW Weapons Dismantlements and Disposition within the NNSA Office of Defense Programs. The Pantex Plant stores surplus pits pending shipment to the Los Alamos National Laboratory in support of the PDCF technology demonstration. The Pantex Plant also packages and stores surplus pits for future shipment to the Savannah River Site for conversion in the PDCF prior to fabrication into mixed-oxide fuel.

Engineering Campaign
Pantex supports the Enhanced Surveillance subprogram by performing aging studies on explosives and non-nuclear materials and components and providing the results to the Design Agencies. Pantex also works with the Design Agencies to develop and deploy new diagnostics tools for implementation into DSW. Pantex will develop and maintain resolution upgrade for Pit Computed Tomography.

Readiness Campaign
Pantex supports the following Readiness Campaign subprograms:

Advanced Design and Production Technologies (*ADAPT)*: assesses advanced technologies that have the potential for use in design and manufacturing and demonstrates new process tools and capabilities that will provide safety, quality, and productivity enhancements as well as reduce cycle time. The Pantex Plant will continue its work in high explosive chemistry process development and testing capabilities. Beginning in FY 2009, the Readiness Campaign will combine both capability development, heretofore funded from the ADAPT subprogram, and capability deployment within the Nonnuclear Readiness, High Explosives and Weapons Operations (HEWO), and Stockpile Readiness subprograms for increased efficiency, sustainability and accountability at the sites. Some of the ADAPT projects specifically related to Pantex production of high explosives and assembly and disassembly of weapons may be funded from the HEWO subprogram.

High Explosives and Weapons Operations (HEWO): assures that the complex is ready to support mission and workload requirements associated with production of high explosive components, the requalification of components for reuse to support Stockpile Management requirements, and the assembly and disassembly of war reserve nuclear weapons. Specifically, the work addresses the gaps that exist in operations in support of the Base Workload, B61and W76 LEPs, and 36-month test readiness. Work will continue on demonstration of high explosive chemistry processes and fabrication techniques and high explosives diagnostics, development and qualification as well as other activities in support of the continuing LEPs and Base Workload.

Readiness in Technical Base and Facilities (RTBF)
The RTBF Program provides the physical infrastructure and operational capabilities required to conduct the DSW and Campaign activities. This includes ensuring that facilities are operational, safe, secure, and compliant, and that a defined level of readiness is sustained to perform the current and future Pantex

mission. In addition to the RTBF program elements, the companion programs and construction work cooperatively with the RTBF elements and the Facilities and Infrastructure Recapitalization Program.

Secure Transportation Asset (STA)
Pantex provides facilities and support for the Federal Agent Force Central Command for the STA program. The plant operates a Vehicle Maintenance Facility and a Mobile Electronics Maintenance Facility to support convoy operations to include specialized and secure maintenance and repair of the entire vehicle fleet and communications equipment. The plant also maintains facilities for Agent training and mission operations.

Facilities and Infrastructure Recapitalization Program (FIRP)
Pantex will prioritize projects for execution that align with the NNSA initiative to consolidate footprint, demolish obsolete buildings, and modernize infrastructure systems and facilities. The Pantex FIRP Program will continue to bolster Site efforts on energy systems performance and execute deferred maintenance reduction projects in mission critical and mission dependent facilities. This strategy will improve facility system reliability, minimize the risk of unscheduled facility outages and improve safety. Over the past two years, this strategy has contributed to the increased throughput on NNSA mission objectives for Stockpile Stewardship, Life Extension Program and Retired Weapons Systems. Completion of the FIRP Utility Line Item projects to upgrade the electrical distribution system and the gas main and distribution system are also anticipated in FY 2009.

Environmental Projects and Operations – Long-Term Stewardship
The Pantex Plant legacy environmental cleanup program has historically consisted of a decontamination and decommissioning project which was completed by the end of FY 2007; and an environmental restoration project scheduled for completion by the Office of Environmental Management at the end of FY 2008. NNSA Long-Term Stewardship (LTS) activities which include long-term surveillance and maintenance, monitoring, and reporting will begin in FY 2009 and will continue to assure protection of public health and the environment.

Transformation Disposition
Transformation Disposition will fund the elimination of excess facility footprint that is high priority in support of NNSA mission objectives and goals. Pantex will dispose of WWII-era facilities that have been identified as excess. TD funding will help support the elimination of these excess facilities starting in FY 2009 along with other excess facilities identified in the FY 2008 Ten Year Site Plan. In addition to execution of D&D projects, the FY 2009 request includes planning for FY 2010 TD projects. Planning and design of D&D projects in advance of execution leads to solid project cost estimates and schedule.

Defense Nuclear Security
The Pantex Defense Nuclear Security program provides protection measures consistent with requirements documented in the Site Safeguards and Security Plan (SSSP). During FY 2009, the site will ensure sustainment of implementation of the 2005 Design Basis Threat. The program will also focus heavily on life cycle replacement of aging intrusion detection and assessment systems and other protection systems with the focus on utilization of new technologies to minimize protective force staffing costs.

Cyber Security
The Cyber security program will focus on revitalization, which will enable NNSA to respond to its highest priorities and to address current and future risks; certification and accreditation for proper

documentation of risks and justification of associated operations for systems at all sites; and, education and awareness that provides training for federal and contractor personnel to meet expanding skill requirements of NNSA cyber security and information environments.

Fissile Materials Disposition
In FY 2008, Congress transferred the funding for the Pit Disassembly and Conversion Facility (PDCF) construction project from the Office of Defense Nuclear Nonproliferation to DSW Weapons Dismantlements and Disposition within the NNSA Office of Defense Programs.

Nonproliferation and International Security
For International Regimes and Agreements, Pantex conducts a Pit-Out Review during disassembly to classify weapon parts and components for U.S. national security and export controls for nonproliferation concerns, and maintains a computer data base jointly funded with Defense Programs.

SANDIA NATIONAL LABORATORIES

TABLES

FUNDING BY PROGRAM:

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
NNSA			
Weapons Activities			
Directed Stockpile Work	371,612	341,022	379,134
Science Campaign	25,137	31,538	43,663
Engineering Campaign	89,765	97,353	81,068
Inertial Confinement Fusion Ignition and High Yield Campaign	16,205	30,578	42,000
Advanced Simulation and Computing Campaign	156,982	122,768	108,121
Pit Manufacturing and Certification Campaign	1,400	1,450	0
Readiness Campaign	20,357	12,654	14,620
Readiness in Technical Base and Facilities	182,612	177,973	168,020
Secure Transportation Asset	23,130	18,465	17,797
Nuclear Weapons Incident Response	13,312	14,539	27,266
Facilities and Infrastructure Recapitalization Program	22,254	17,567	18,521
Environmental Projects and Operations Program/LTS	0	1,500	7,251
Transformation Disposition	0	0	1,900
Defense Nuclear Security	70,379	67,883	68,244
Cyber Security	16,011	17,910	19,558
Subtotal Weapons Activities	**1,009,156**	**953,200**	**997,163**
Defense Nuclear Nonproliferation			
Nonproliferation and Verification R&D	61,611	88,314	65,407
Nonproliferation and International Security	15,720	18,291	17,129
International Nuclear Materials Protection and Cooperation	151,816	142,967	74,992
Global Threat Reduction Initiative	4,408	8,298	9,500
Subtotal Defense Nuclear Nonproliferation	**233,555**	**257,870**	**167,028**
Total, NNSA	**1,242,711**	**1,211,070**	**1,164,191**

OUT-YEAR FUNDING:

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
NNSA				
Weapons Activities				
Directed Stockpile Work	412,935	398,587	399,334	398,281
Science Campaign	38,214	31,452	32,347	32,512
Engineering Campaign	83,890	82,702	80,771	81,342
Inertial Confinement Fusion Ignition and High Yield Campaign	44,000	39,130	40,338	39,829
Advanced Simulation and Computing Campaign	98,694	92,406	92,404	92,486
Pit Manufacturing and Certification Campaign	0	0	0	0
Readiness Campaign	11,437	8,972	5,416	6,382
Readiness in Technical Base and Facilities	168,308	187,085	168,300	174,108
Secure Transportation Asset	18,332	18,880	19,447	20,030
Nuclear Weapons Incident Response	28,629	30,060	30,672	32,556
Facilities and Infrastructure Recapitalization Program	21,246	21,646	21,497	21,460
Environmental Projects and Operations Program/LTRA	7,027	8,255	6,127	6,268
Transformation Disposition	1,900	1,900	2,608	4,750
Defense Nuclear Security	71,683	71,995	69,649	71,497
Cyber Security	17,551	18,131	19,038	20,525
Subtotal Weapons Activities	**1,023,846**	**1,011,201**	**987,948**	**1,002,026**
Defense Nuclear Nonproliferation				
Nonproliferation and Verification R&D	74,786	78,929	81,811	83,811
Nonproliferation and International Security	19,225	20,200	21,788	22,320
International Nuclear Materials Protection and Cooperation	62,986	60,988	61,152	62,556
Global Threat Reduction Initiative	5,495	5,574	6,191	7,635
Subtotal Defense Nuclear Nonproliferation	**162,492**	**165,691**	**170,942**	**176,322**
Total, NNSA	**1,186,338**	**1,176,892**	**1,158,890**	**1,178,348**

EMPLOYMENT:

	FY 2007	FY 2008	FY 2009
Contractor Employment (End of Year)			
NNSA	4,437	4,398	4,307
Other	4,041	4,002	3,921
Total Facility	**8,478**	**8,400**	**8,228**

Congressional Items of Interest:

Major Changes or Shifts: None

Site Description

INTRODUCTION:

Sandia National Laboratories/New Mexico (SNL/NM) is located on the 75,520-acre Kirtland Air Force Base military reservation in Albuquerque, New Mexico. It occupies nearly 9,000 acres of the Kirtland reservation and has additional facilities in Livermore, California (400 acres); Kauai, Hawaii (120 acres);

and Tonopah, Nevada (600 square miles). SNL is aligned with Complex Transformation activities. Evaluations are underway by way of the National Environmental Policy Act (NEPA) process for the Complex Transformation Supplemental Programmatic Environmental Impact Statement that could affect Sandia relative to Operations at Tonopah Test Range (TTR), Environmental testing, and a few other areas discussed in the NEPA documents that are expected to conclude with a Record of Decision in 2008.

The SNL's Science, Technology, and Engineering program conducts a large variety of research and development programs that support five key areas: 1) Nuclear Weapons, 2) Nonproliferation and Assessments, 3) Military Technologies and Applications, 4) Energy and Infrastructure Assurance, and 5) Homeland Security.

ACTIVITIES:

Directed Stockpile Work (DSW)
The SNL supports DSW activities to ensure the reliability, safety, and security of the current and future nuclear weapons stockpile. Sandia supports the Life Extension Program (LEP) activities for the B61-Alteration (Alt) 357 and the W76-Modification (Mod) 1. SNL supports Retired Systems activities, including required characterization of stockpile weapon components. SNL DSW activities support multiple systems in the enduring stockpile including: surety assessments, the Annual Assessment Report, the semi-annual weapon reliability reports, support to the Nuclear Explosive Safety Studies (NESS), laboratory and flight surveillance, neutron generator design and development, cross-cutting subjects in Significant Finding Investigations (SFIs), aircraft compatibility, and military liaison with the Department of Defense (DoD). Sandia has production mission assignment for Neutron Generators and a dozen other technologies that require extensive engineering oversight to produce. SNL activities will continue to develop technology and sub-systems that will be options for the future sustainable stockpile, such as the LEPs.

Although the RRW was cancelled in FY 2008, $5,000,000 in annual funding has been provided to SNL for FY 2009 - FY 2013. The funding will enable maturation of the RRW to address questions raised by the JASON review of RRW feasibility study activities. Design refinement is necessary to establish parameters for potential impact on certification among other things. Without further design work, there is insufficient detail available to use this design to resolve certification questions raised by the JASON review. This funding will also facilitate continued progress on the Phase 2A RRW concept and design work, and documenting that work to support future administration decisions on options for our nuclear weapons stockpile. The Department of Defense and the Joint DoD-DOE Nuclear Weapons Council fully support continuing efforts to examine how the RRW can address issues of safety, security and long-term reliability of the nation's nuclear deterrent.

Science Campaign
The SNL leverages its unique capabilities in Pulsed Power Science and Materials and Process Science to support the Science Campaign. In pulsed power, these capabilities include design, development, and deployment of state-of-the-art, compact, reliable, and high-intensity flash x-ray radiographic sources for SubCritical Experiments at the Nevada Test Site (NTS), and for above-ground dynamic experiments at the Los Alamos National Laboratory (LANL) and Atomic Weapons Establishment (AWE). At the Z facility, SNL also develops intense energetic radiation sources, sophisticated x-ray diagnostics, Z-Beamlet-Laser-radiography capability, and supports their utilization by LANL for Secondary Assessment Technology in radiation transport, complex hydrodynamics, and integrated implosions. The Z pulsed power facility also provides a unique capability to isentropically (i.e. shockless) compress

and/or to accelerate flyer plates to shock-compress materials to high pressures, thus providing equation-of-state and constitutive property data to SNL, LANL, and the Lawrence Livermore National Laboratory (LLNL) material communities for inclusion in models and the quantification of margins process. In addition, SNL provides the science basis for developing new non-nuclear materials, improving fabrication processes, and characterizing the performance of materials based on composition, processing, and microstructure to advance the state of the art.

- Within the Science Campaign, the Advanced Certification line will continue efforts begun in FY 2008 to review, evaluate and implement key recommendations from the JASON review of RRW regarding approaches to establishing an accredited warhead certification plan, without nuclear testing, in an era where changes to nuclear components will occur due to aging or design concerns. A report to Congress to be provided in May, as directed by the FY 2008 Consolidated Appropriations Act (P.L. 110-161), will address plans for achieving the Advanced Certification goals.

Engineering Campaign
The Engineering Campaign is a key element to realize the Complex Transformation goals for the nuclear weapons complex with a sustainable stockpile. The SNL Engineering Campaign develops the modern engineering tools, capabilities, and technologies needed to ensure the safety, security, survivability, reliability, and performance of the existing and future stockpile, and to provide a sustained engineering science basis, through the use of quantified margins and uncertainties, for stockpile assessment and certification. The SNL portion of the Engineering Campaign supports the following subprograms: Enhanced Surety, Weapon System Engineering Assessment Technology, Nuclear Survivability, and Enhanced Surveillance.

Inertial Confinement Fusion Ignition and High Yield (ICF) Campaign
The SNL ICF activities support the High Energy Density Physics (HEDP) experimental program on the Z pulsed power facility. In FY 2006, Sandia operated with partial second shift operations of the Z Facility, and performed over 200 Z shots per year, which represents approximately half of the requested stockpile stewardship experiments (Dynamic Materials, Secondary Assessment Technology, and Nuclear Survivability subprograms and DSW), pulsed-power-ICF and x-ray-source-development experiments, and a combination of basic science, z-pinch physics, power flow, and Inertial Fusion Energy experiments. This ICF Campaign activity also develops, maintains, and operates the diagnostics capability associated with the Z-Beamlet backlighter facility that is coupled to the Z pulsed-power facility; design, fabricates, and assembles the majority of the load and target hardware; develops, maintains, and operates all of the x-ray, particle, and laser-based diagnostics; develops, maintains, and operates multi-dimensional simulation codes, and supports the staff who design, perform, and analyze the experiments. Research on Z and Z-Beamlet is performed in cooperation and collaboration with the other national laboratories, Defense Threat Reduction Agency laboratories, universities, and the Atomic Weapons Establishment. Sandia is bringing the refurbished Z machine back on line in FY 2008 to support the ICF mission.

Advanced Simulation and Computing (ASC) Campaign
The SNL ASC activities focus on development and application of simulation tools for supporting the SNL NNSA Defense Programs mission in annual certification, the LEPs, Significant Finding Investigations (SFIs), and the mission priorities of the Stockpile Stewardship Program (SSP), including the continuing improvement of predictivity and certification methodologies (e.g., Quantification of Margins and Uncertainties--QMU). Opportunities will also be sought to leverage ASC technology in support of other national nuclear security mission needs including secure transportation and emerging

threats; A foundational element of the SNL ASC program will be development of the toolset needed to quantify the uncertainty in the predictions of the NNSA weapons codes including the effective use of supercomputing and forward looking cost-effective architectures. Specific activities include the development of computer simulation technology to enable Special Nuclear Material (SNM) removal from site operations, implementation of new algorithms and models into high-fidelity simulation codes and application of new methodologies for demonstrating credibility of simulation results. SNL will contribute to the final deployment of Tri-laboratory Productivity On-Demand (TriPoD) capabilities for capacity computing that will enable a seamless ASC user environment.

The national ASC campaign has begun the planning process to implement Secretary of Energy Advisory Board recommendations to reduce the computing infrastructure footprint. The transformation includes operating capability platforms in a manner similar to that of a large-scale experimental facility and the reduction in number of its weapons program capability computing sites from three to two. The outcome of this process could have a significant effect on the siting and support of supercomputing at SNL and could have a cost to Defense Programs in term of both dollars and response time.

Readiness Campaign

The Readiness Campaign supports development of advanced design and production technologies as required to support production at SNL and some of the other Production Agencies. Readiness Campaign activities at SNL involve three of the five subprograms within the Campaign.

- *Advanced Design and Production Technologies (ADAPT)*: ongoing areas include micro-modular telemetry, transformation of Technical Business Practices and supporting standards. FY 2008 planning will address technology maturation supporting the future LEPs including advanced firing system options (e.g., direct optical initiation, integrated micro-firing systems) and will revisit technology options for a more integrated model-based design and development capability across the NWC. Beginning in FY 2009, the Readiness Campaign will combine both capability development, heretofore funded from the ADAPT subprogram, and capability deployment within the Nonnuclear Readiness, High Explosives and Weapon Operations, and Stockpile Readiness subprograms for increased efficiency, sustainability and accountability at the sites. Some ADAPT projects specifically related to nonnuclear production may be funded from the Nonnuclear Readiness subprogram.

- *Nonnuclear Readiness*: the principal Sandia focus has been achieving "Readiness" through continued modernization of neutron-generator testers.

- *Tritium Readiness*: Sandia continues to model the design of the Tritium Producing Burnable Absorber Rods (TPBARs) for comparison against experimental data gathered during the initial irradiation cycles in order to understand the permeation performance of the TPBARs.

Readiness in Technical Base and Facilities (RTBF)

The RTBF Program supports a broad base of activities that enable the laboratory to meet its mission and obligations to the NNSA and the nation. The activities are derived from the staffing and operation of a number of critical Nuclear Weapon Program capabilities and facilities, operation of test capabilities and test ranges, supporting development work and studies in weapons materials, waste management, education, and high energy density physics readiness. The SNL RTBF projects range from the staffing and operation of complex experimental capabilities (e.g., Tech Area V reactors, Tonopah Test Range, and Environmental Test Facilities) to production and support capabilities (e.g. Microelectronics Development Laboratory, Neutron Generator equipment maintenance, and the Primary Standards

Laboratory). Sandia provides the primary standards capabilities for the Nuclear Weapons Complex. Evaluations are underway by way of the NEPA process for the Complex Transformation Supplemental Programmatic Environmental Impact Statement that could affect Sandia relative to Operations at Tonopah Test Range (TTR), Environmental testing, and a few other areas discussed in the NEPA documents that are expected to conclude with a Record of Decision in 2008. Also critical within the RTBF program are efforts to develop programs to maintain key nuclear weapons critical skills and develop the critical capabilities for the next generation of program needs.

Secure Transportation Asset (STA)
The SNL provides the research, design, and engineering development, and operational support for new technology, mobile communications, and vehicle production. The SNL conducts safety and security studies and analyzes risks involving nuclear weapons transportation. The SNL maintains the STA safety and security authorization basis, and designs, analyzes tests, and documents all nuclear weapon and material cargo tie-down systems for STA ground and air transportation, engineering production, configuration management, and field support for the Safeguards Transporter (SGT), Safe Secure Trailer (SST), Next Generation Armored Tractor (NGAT), and Escort Vehicles (EVs), and maintains a "24X7" emergency response capability for convoy missions.

Defense Nuclear Security
The SNL Defense Nuclear Security program provides laboratory protection measures consistent with requirements documented in its Site Safeguards and Security Plan (SSSP). For FY 2009, SNL will continue to focus on improving the efficiency of the security program, including modernization of the security infrastructure and implementation of technology upgrades to reduce the need for protective force posts and patrols.

Cyber Security
The Cyber security program will focus on revitalization, which will enable NNSA to respond to its highest priorities and to address current and future risks; certification and accreditation for proper documentation of risks and justification of associated operations for systems at all sites; and, education and awareness that provides training for federal and contractor personnel to meet expanding skill requirements of NNSA cyber security and information environments.

Nuclear Weapons Incident Response
For the DOE and the NNSA's Office of Emergency Response, SNL assists in operating, exercising, and maintaining DOE's capability to provide assistance to Federal, state and local government agencies for responding to radiological accidents and incidents. SNL deploys trained, qualified technical and professional personnel and specialized equipment and provides research and development, training, exercises, operations, maintenance and required coordination with other Federal agencies and foreign governments to effectively address current and projected threats. Support for the National Technical Nuclear Forensics (NTNF) and Stabilization Implementation programs will continue in FY 2009. SNL activities include the conduct of operations and technical integration in support of the Joint Technical Operations Team (JTOT), Accident Response Group (ARG), and Home Team (HT) in the form of technical support, research and development, intelligence support, field operations, and training and exercises. In addition, SNL provides research and support to the Office of Emergency Operations with unique expertise in their efforts supporting the Office of Nuclear Counterterrorism.

Facilities and Infrastructure Recapitalization Program (FIRP)
The SNL uses FIRP funding for projects that support refurbishment of building systems and utilities for mission-critical Defense Programs facilities and infrastructure. In FY 2009, the Heating System

Modernization (HSM) project receives a third year of FIRP funding to continue converting the centralized, fifty year old steam system to a more efficient distributed system for heating and process related hot water requirements. This project supports facilities within Sandia's Technical Area I involved in directed stockpile work, neutron generator production, surveillance and engineering campaigns, and advance computing systems supporting modeling and simulation activities in support of the stewardship mission. Recapitalization projects planned for FY 2009 will fund projects to include chiller replacements supporting Sandia's scientific and classified computing resources, mechanical and electrical upgrades in facilities involved with thermal power source R&D and production, and machining of critical classified components for weapons subsystems. Facility footprint reduction is especially important at SNL because any modernization is confined to existing boundaries.

Transformation Disposition (TD)
Transformation Disposition will fund the elimination of excess facility footprint that is high priority in support of NNSA mission objectives and goals. TD funding will help support the elimination of these excess facilities starting in FY 2009 along with other excess facilities identified in the FY 2008 TYSP. In addition to execution of D&D projects, the FY 2009 request includes planning for FY 2010 TD projects. Planning and design of D&D projects in advance of execution leads to development of solid project cost estimates and schedules.

Environmental Projects and Operations – Long-Term Stewardship
The legacy environmental cleanup activities at the SNL were completed in FY 2006 for 259 of 265 release sites by the Office of Environmental Management (EM). In addition, five release sites were completed in FY 2007 for a current total of 263 of 265 being complete. In FY 2007, the Long-Term Stewardship (LTS) program was implemented to continue to support remedial actions at the completed release sites. The LTS activities were managed by NNSA but funded by EM in FY 2007 due to the terms of the Continuing Resolution not allowing functional transfers. For FY 2008 and FY 2009, LTS activities include program management, the maintenance of remedies at a number of environmental restoration sites at SNL/New Mexico, and groundwater monitoring at SNL/California.

Nonproliferation and Verification Research and Development
SNL will develop, demonstrate, and validate improvements to data processing and analysis tools in support of ground-based nuclear detonation detection. SNL will design, develop, and produce new optical detectors for the next generation of U.S. satellite-based monitoring nuclear/radiation detection nuclear detonation detection program. SNL serves as the national center on research on Synthetic Aperture Radar systems and analysis methods for national security applications. SNL will continue field-testing a remote chemical detection system for stand-off detection of nuclear weapon production activities. SNL will continue to develop radiation algorithms to improve performance of commercially available hand-held and portal nuclear/radiation detection systems. SNL research includes definition and testing of components for future UAV-based effluent collection systems to support proliferation detection requirements. SNL conducts state-of-the-art research in the use of anti-neutrino detector systems for nuclear reactor monitoring applications.

International Nuclear Materials Protection and Cooperation
Based on their extensive work for the NNSA, Department of Defense, and other federal agencies, SNL provides experience with the design and installation of physical protection systems and has specific technical expertise in access delay systems; intrusion detection and assessment systems and associated display systems; access control systems; and vulnerability analysis procedures, processes and associated computer codes. SNL also provides technical expertise to advise Russian institutes, enterprises, and

government agencies as they develop and implement physical protection systems, regulations, and sustainability and training programs and to support the Second Line of Defense program. Additionally, SNL supports installation of radiation detection equipment at border crossings and airports/seaports within both Russia and the Former Soviet Union States under the Second Line of Defense Core Program and at major container shipping terminals within the global maritime cargo transportation system under the Second Line of Defense Program's Megaport Initiative.

Nonproliferation and International Security

SNL provides support for Global Security Engagement and Cooperation regional security efforts, conducts technical exchanges and technology development under the U.S. Russian Warhead Safety and Security Exchange Agreement, development of nuclear transparency measures, including through technical analysis and technology development, policymaking and negotiations regarding various arms control and nonproliferation regimes, and export control activities and, NNSA regional security objectives, particularly with Cooperative Monitoring Center. For International Regimes and Agreements, SNL supports licensing operations through reviews of export controlled equipment, materials and software, and analytical tools and technical references for use in developing recommendations on U.S. export license applications, international safeguards technology assessment, policy support and nonproliferation assessment, multilateral outreach through support efforts for policymaking and negotiations regarding various nonproliferation control regimes, and international cooperation, primarily in the Former Soviet Union but increasingly in transit states as well. In addition, SNL supports safeguards cooperation, provides vulnerability assessment support for foreign sites of interest, training to foreign nationals as needed, Additional Protocol outreach and training, and safeguards agreement implementation. Furthermore, SNL provides support for commercialization efforts globally and efforts to downsize the Russian Nuclear Weapons complex and helps create business opportunities for displaced weapons workers. SNL also supports the nonproliferation activities under the new Global Nuclear Energy Partnership initiative.

Global Threat Reduction Initiative

SNL provides significant technical, scientific, and management expertise to one of the three key subprograms of GTRI – Protect—supporting the comprehensive GTRI approach to denying terrorists access to nuclear and radiological materials. The **Nuclear and Radiological Material Protection** subprogram supports the protection of at-risk WMD-usable nuclear and radiological materials worldwide from theft and sabotage until a more permanent threat reduction solution can be implemented.

SAVANNAH RIVER SITE

TABLES

FUNDING BY PROGRAM:

	FY 2007	FY 2008	FY 2009
NNSA			
Weapons Activities			
Directed Stockpile Work	30,206	73,653	86,249
Engineering Campaign	2,274	1,809	1,669
Pit Manufacturing and Certification Campaign	1,375	425	0
Readiness Campaign	36,020	28,948	30,923
Readiness in Technical Base and Facilities	98,914	92,112	114,178
Nuclear Weapons Incident Response	2,043	2,221	2,332
Transformation Disposition	0	0	1,275
Defense Nuclear Security	11,463	10,842	12,420
Cyber Security	1,144	2,124	3,835
Subtotal Weapons Activities	**183,439**	**212,134**	**252,881**
Defense Nuclear Nonproliferation			
Nonproliferation and Verification R&D	7,139	9,754	7,057
Nonproliferation and International Security	2,950	3,432	3,214
Fissile Materials Disposition	62,450	16,400	7,000
Global Threat Reduction Initiative	1,619	1663	1,900
Subtotal Defense Nuclear Nonproliferation	**74,158**	**31,249**	**19,171**
Total, NNSA	**257,597**	**243,383**	**272,052**

OUT-YEAR FUNDING:

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
NNSA				
Weapons Activities				
Directed Stockpile Work	209,454	281,738	296,573	287,241
Engineering Campaign	1,600	1,516	1,656	1,719
Pit Manufacturing and Certification Campaign	0	0	0	0
Readiness Campaign	28,775	29,731	29,651	2538
Readiness in Technical Base and Facilities	102,511	109,620	120,617	127,409
Nuclear Weapons Incident Response	2,449	2,571	2,700	2,835
Transformation Disposition	0	0	0	0
Defense Nuclear Security	12,994	13,002	12,110	12,431
Cyber Security	4,371	4,447	4,775	5,340
Subtotal Weapons Activities	**362,154**	**442,625**	**468,082**	**439,513**
Defense Nuclear Nonproliferation				
Nonproliferation and Verification R&D	9,315	10,016	10,517	10,765
Nonproliferation and International Security	3,664	3,850	4,151	4,254
Fissile Materials Disposition	6,000	4,272	4,300	4,300
Global Threat Reduction Initiative	780	790	877	1,082
Subtotal Defense Nuclear Nonproliferation	**19,759**	**18,928**	**19,845**	**20,401**
Total, NNSA	**381,913**	**461,553**	**487,927**	**459,914**

EMPLOYMENT:

	FY 2007	FY 2008	FY 2009
Contractor Employment (End of Year)	1,422	1,398	1,382
Other	8,105	7,924	7,840
Total Facility	**9,527**	**9,322**	**9,222**

Congressional Items of Interest: Construction of the Mixed-Oxide Fuel Fabrication Facility and the Pit Disassembly and Conversion Facility.

Major Changes or Shifts: None

Site Description

INTRODUCTION:

The Savannah River Site (SRS) covers approximately 310 square miles bordering the Savannah River in western South Carolina. The Department of Energy Office of Environmental Management is the site landlord. The Savannah River Site is designated as a National Environmental Research Park and covers a small portion of Aiken, Barnwell, and Allendale counties.

The SRS Tritium Facilities, which occupy a portion the total site, are supporting the National Nuclear Security Administration (NNSA) Stockpile Stewardship and Stockpile Evaluation programs, and are executing a plan to meet the challenges of the future through the following core missions:

- Provide tritium and non-tritium loaded reservoirs to meet Nuclear Weapons Stockpile Plan requirements.
- Conduct Stockpile Evaluation Program.
- Extract tritium produced at TVA reactors.

The SRS Tritium Facilities are aligned with Complex Transformation activities.

ACTIVITIES:

Directed Stockpile Work (DSW)
The SRS DSW activities include processing tritium and inert reservoirs and associated components in support of Life Extension Programs (LEPs) and Stockpile Systems. The LEP activity includes production and evaluation associated with the refurbishment of the B61 and W76-1. Stockpile Systems categories include Limited Life Component Exchange (LLCE), Gas Transfer System (GTS) Surveillance, Stockpile Laboratory Tests (SLTs), and Life Storage Program (LSP) activities. Reservoirs and associated parts will be processed as necessary to support LLCE schedules per production directive requirements for the enduring stockpile. Retired Systems includes reservoirs returned from retired weapons that will be unloaded, welded closed for disposal, or managed per SLT requirements.

In FY 2008, Congress transferred the funding for the Pit Disassembly and Conversion Facility (PDCF) construction project from the Office of Defense Nuclear Nonproliferation to DSW Weapons Dismantlements and Disposition within the NNSA Office of Defense Programs. SRS is the site selected for disposition of U.S. plutonium and, as such, provides design authority for the Pit Disassembly and Conversion Facility (PDCF). During the construction phases of the PDCF, SRS will be responsible for site integration and construction of site infrastructure including electric power, water & sewer, roads, communications, waste management, fire protection, security and related services. SRS will provide project and contract management support for the U.S. plutonium disposition program, which includes the Pit Disassembly and Conversion Facility (PDCF). During construction, SRS will continue to provide contract management services such as funding direction and authority to contractors, overseeing contract performance, and providing legal and accounting services in support of NNSA Headquarters. SRNL is supporting the Pit Disassembly and Conversion Facility by developing glovebox manipulator equipment and automated sealing systems for the 3013 storage system.

Engineering Campaign
The Enhanced Surveillance subprogram activities develop the tools, techniques, and procedures to advance the capabilities of the Nuclear Weapons Complex to measure, analyze, calculate, and predict the effects of aging on weapons materials, components, and systems to determine if and/or when these effects will impact weapon reliability, safety, or performance. The SRS role in this campaign is to develop methods for surveillance of tritium reservoirs and other GTS components.

Pit Manufacturing and Certification Campaign
The Savannah River National Laboratory is supporting development of an improved plutonium purification process and is a member of the Technology Working Group.

In FY 2007, the Pit Manufacturing and Certification Campaign successfully completed its multi-year goal of re-establishing a pit manufacturing capability. Beginning in FY 2009, the Pit Manufacturing and Certification Campaign will be disestablished and the activities will be realigned with DSW (manufacturing) and the Science Campaign (certification).

Readiness Campaign
The SRS role in support of the Readiness Campaign encompasses two subprograms:

- *Tritium Readiness:* activities include operation of the Tritium Extraction Facility (TEF). The TEF provides the capability to receive and extract tritium-containing gases from tritium producing burnable absorber rods. This will provide sufficient tritium to support stockpile requirements per the baseline schedule. The TEF project was completed in FY 2007 and extraction operations began in January 2007.

- *The Advanced Design and Production Technologies (ADAPT):* serves as a catalyst to change the way the NNSA creates its nuclear weapon products through development, demonstration, and deployment of new information, design, and manufacturing technologies. ADAPT at SRS has been organized into projects including the Reservoir Development project, the Tritium Processing project and the Automated Reservoir Management System Replacement project.

In addition to these site-specific projects, the SRS is leading an ADAPT project to deploy digital radiography standards and image management across the complex. Beginning in FY 2009, the Readiness Campaign will combine both capability development, heretofore funded from the ADAPT subprogram, and capability deployment within the Nonnuclear Readiness, High Explosives and Weapons Operations, and Stockpile Readiness subprograms for increased efficiency, sustainability and accountability at the sites. SR- specific projects, such as Reservoir Development, Tritium Processing, and ARMS will be moved to either the Stockpile Readiness Subprogram or the Nonnuclear Readiness Subprogram.

Readiness in Technical Base and Facilities (RTBF)
The RTBF program maintains the facilities and infrastructure in a state of readiness in support of the DSW missions, including LEPs, Stockpile Services, and Production Support. Operations of Facilities include facilities management and support activities that maintain the facilities and infrastructure in a state of readiness for mission operations. Preventive, predictive, and corrective maintenance of process and infrastructure equipment/facilities are performed. Environmental, safety, and health activities are conducted to ensure the well being of SRS workers, the public, and the environment, as well as developing and providing updates to the Authorization Bases. Contracted costs of providing utilities to the SRS Tritium Facilities are included. Capital equipment and general plant projects that meet base maintenance and infrastructure needs are planned and executed to maintain the safety, utility, and capability of the process facilities. Material Recycle and Recovery involves recovery and purification of tritium, deuterium, and helium-3 gases from reservoir recycle gas, hydride storage vessels, and facility effluent-cleanup systems. The SRS performs physical maintenance of various shipping containers, and provides operational, regulatory, and technical support of Pressure Vessels. The SRS also designs and tests replacement shipping containers for use within the DOE Complex.

Defense Nuclear Security
The SRS Defense Nuclear Security program provides security for the Tritium Facility consistent with requirements documented in its approved facility Master Security Plan. For FY 2009 the security program should also focus on ensuring NNSA's role in MOX and PDCF security are fully supported.

Cyber Security
The Cyber security program will focus on revitalization, which will enable NNSA to respond to its highest priorities and to address current and future risks; certification and accreditation for proper documentation of risks and justification of associated operations for systems at all sites; and, education

and awareness that provides training for federal and contractor personnel to meet expanding skill requirements of NNSA cyber security and information environments.

Facilities and Infrastructure Recapitalization Program (FIRP)
Savannah River Site's program contributions derive from Recapitalization projects that complete roofing repair projects on mission critical budgets. The SRS has achieved a steady reduction of deferred maintenance and improvements to facilities and infrastructure, including roof repairs, renovations of electrical distribution systems, HVAC upgrades and associated building monitoring and control systems.

Transformation Disposition (TD)
Transformation Disposition will fund the elimination of excess facility footprint that is high priority in support of NNSA mission objectives and goals. TD funding will help support the elimination of these excess facilities in FY 2009 along with other excess facilities identified in the FY 2008 TYSP.

Fissile Materials Disposition
SRS is the site selected for disposition of U.S. plutonium and, as such, provides site coordination services for the Mixed-Oxide (MOX) Fuel Fabrication Facility (FFF). SRS also supports design review of the MOX FFF and integration of the two plutonium disposition facilities with other site support services (actual design of facilities is contracted to private sector firms). In addition, SRS provides down-blending services for off-specification highly enriched uranium (HEU). During the construction phases of the MOX FFF, SRS will be responsible for site integration and construction of site infrastructure including electric power, water & sewer, roads, communications, waste management, fire protection, security and related services. The H-Canyon is being used to down blend HEU fuel assemblies to Low Enriched Uranium for transfer to the Tennessee Valley Authority (TVA) for use in nuclear power plants. In addition, other forms of HEU are being transferred directly to TVA for conversion to reactor fuel. This is reducing the HEU inventory and the threat of HEU being used for weapons and reduces the long-term storage cost of HEU. SRS will provide project and contract management support for the U.S. plutonium disposition program, which includes the Mixed Oxide (MOX) Fuel Fabrication Facility. During construction, SRS will continue to provide contract management services such as funding direction and authority to contractors, overseeing contract performance, and providing legal and accounting services in support of NNSA Headquarters.

Nonproliferation and Verification Research and Development
SRNL provides nuclear materials analysis efforts (advance mass spectrometry developments, ultra-sensitive separation, and detection techniques) and characterization of nuclear materials. SRNL also provides state-of-the-art scientific research to define improved effluent collection systems and research for development of a Field Guide of Environmental Accumulators. SRNL has developed physical model software hosted on a desktop that quickly and directly derives total heat flux through the surface of a cooling lake from statistical measures of temperature variability of convective cells obtained from thermal images. This model's information could be used to estimate plutonium production in nuclear reactors.

Nonproliferation and International Security
SRS provides safeguards and export control support for the International Regimes and Agreements Program specifically in the area of vulnerability assessment support for foreign sites of interest, training to foreign nationals as needed, Additional Protocol outreach and training, and safeguards agreement implementation. SRS supports licensing operations through reviews of export controlled equipment, materials and software, and analytical tools and technical references for use in developing recommendations on U.S. export license applications, including managing and providing WMD training

to Department of Homeland Security and other enforcement agencies, and technical reach back on enforcement investigations with ANL, KCP, LANL, LLNL, ORNL, PNNL, and SNL.

Global Threat Reduction Initiative

SRS provides significant technical, scientific, and management expertise to one of the three key subprograms of GTRI – Remove — supporting the comprehensive GTRI approach to denying terrorists access to nuclear and radiological materials. The Nuclear and Radiological Material Removal subprogram supports the removal or disposal of excess WMD-usable nuclear and radiological materials from civilian sites worldwide.

Y-12 NATIONAL SECURITY COMPLEX

TABLES

FUNDING BY PROGRAM:

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
NNSA			
Weapons Activities			
Directed Stockpile Work	199,439	210,598	184,667
Engineering Campaign	3,907	3,460	3,795
Advanced Simulation and Computing Campaign	250	500	0
Pit Manufacturing and Certification Campaign	250	25	0
Readiness Campaign	21,270	16,672	23,157
Readiness in Technical Base and Facilities	410,678	425,857	388,413
Secure Transportation Asset	3,888	3,381	3494
Nuclear Weapons Incident Response	1,353	1,159	1,217
Facilities and Infrastructure Recapitalization Program	43,187	49,748	44,601
Transformation Disposition	0	0	35,216
Defense Nuclear Security	130,114	167,461	150,513
Cyber Security	5,085	6,048	7,587
Subtotal Weapons Activities	**819,421**	**884,909**	**842,660**
Defense Nuclear Nonproliferation			
Nonproliferation and International Security	1,935	2,251	2,108
International Nuclear Materials Protection and Cooperation	0	0	1,495
Fissile Materials Disposition	39,973	20,143	10,574
Global Threat Reduction Initiative	485	1,744	2,000
Subtotal Defense Nuclear Nonproliferation	**42,393**	**24,138**	**16,177**
Total, NNSA	**861,814**	**909,047**	**858,837**

OUT-YEAR FUNDING:

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
NNSA				
Weapons Activities				
Directed Stockpile Work	178,412	184,335	194,131	199,811
Engineering Campaign	3,656	3,500	3,820	3,965
Advanced Simulation and Computing Campaign	0	0	0	0
Pit Manufacturing and Certification Campaign	0	0	0	0
Readiness Campaign	32,577	23,788	15,713	33662
Readiness in Technical Base and Facilities	436,264	536,640	599,083	647,199
Secure Transportation Asset	0	0	0	0
Nuclear Weapons Incident Response	1,278	1,342	1,409	1,479
Facilities and Infrastructure Recapitalization Program	51,163	52,126	51,766	51,677
Transformation Disposition	42,478	42,250	42,000	42,000
Defense Nuclear Security	169,262	167,459	161,953	166,252
Cyber Security	6,697	7,199	7,956	8,508
Subtotal Weapons Activities	**921,787**	**1,018,639**	**1,077,831**	**1,154,553**
Defense Nuclear Nonproliferation				
Nonproliferation and International Security	2,523	2,651	2,856	2,929
International Nuclear Materials Protection and Cooperation	1,936	1,797	1,817	1,796
Fissile Materials Disposition	9,991	7,195	7,200	5,000
Global Threat Reduction Initiative	1,015	1,030	1,145	1,410
Subtotal Defense Nuclear Nonproliferation	**15,465**	**12,673**	**13,018**	**11,135**
Total, NNSA	**937,252**	**1,031,312**	**1,090,849**	**1,165,688**

EMPLOYMENT:

	FY 2007	FY 2008	FY 2009
Contractor Employment (End of Year)			
NNSA	4,178	3,820	3,820
Other	174	230	230
Total Facility	**4,352**	**4,050**	**4,050**

Congressional Items of Interest: Construction of the Highly Enriched Uranium Materials Facility and the Uranium Processing Facility.

Major Changes or Shifts: This site is undergoing a major transformation that is closely aligned with the NNSA Complex Transformation planning.

Site Description

INTRODUCTION:

B&W Y-12, operates the Y-12 National Security Complex (Y-12) that is located on the Department of Energy (DOE) Oak Ridge Reservation (ORR), which covers approximately 35,000 acres. Most of the ORR lies within the corporate limits of the city of Oak Ridge, Tennessee, and is located approximately

2 miles southwest of its population center. In addition to Y-12, the ORR is home to Oak Ridge National Laboratory (ORNL) and East Tennessee Technology Park. The ORR is bordered on the north and east by the city and on the south and west by the Clinch River/Melton Hill Lake impoundment.

The Y-12 role includes the following activities:
- Manufacturing and assessing nuclear-weapon secondaries, cases, and other weapons components;
- Dismantling weapons returned from the stockpile;
- Providing safe and secure storage and management of special nuclear material;
- Supplying special nuclear material for use in naval reactors;
- Promoting international nuclear safety and nonproliferation;
- Reducing global dangers from weapons of mass destruction; and
- Supporting U.S. leadership in science and technology.

This site is undergoing a major transformation that is closely aligned with the NNSA Complex Transformation activities. This transformation reflects consolidation, footprint reduction, and revitalization and includes construction of the Highly Enriched Uranium Materials Facility (HEUMF) to consolidate storage of special nuclear materials (SNM) and construction of the Uranium Processing Facility (UPF) to consolidate SNM manufacturing operations. In addition, the Protected Area Reduction Project (PARP) will complete the high security area perimeter and the Consolidated Manufacturing Complex (CMC) will consolidate all non-enriched uranium manufacturing operations. The completion of both these near-term and long-term actions will enable:

- Reducing by nearly 90% the site "footprint" that requires high levels of security for special nuclear materials;
- Reducing the overall site footprint to less than one-half the size of the current footprint;
- Consolidating manufacturing and processing operations to reduce the number of facilities and amount of square footage required, improve workflow efficiencies, and facilitate reduction of high-security perimeter;
- Consolidating material storage operations to reduce the number of buildings, square footage, and long-term maintenance operating cost;
- Consolidating administrative and technical operations into permanent and new facilities based on functional, security, and workflow requirements; and,
- Consolidating plant support operations into permanent new facilities to improve workflow efficiency and reduce long-term maintenance, operation, and security costs.

ACTIVITIES:

Directed Stockpile Work (DSW)

Y-12 is the NNSA home for all aspects of the Nuclear Weapons Complex (Complex) secondary manufacturing, quality evaluation, disposition, and case manufacturing. Changes in the Complex mission have resulted in increased emphasis on conducting surveillance of the existing stockpile, predicting its life, performing refurbishments Life Extension Programs (LEPs), dismantling the weapons removed from the stockpile under treaty provisions, and providing safe, secure management, and storage of the nation's inventory of highly enriched uranium (HEU) and other weapons materials. Significant FY 2009 tasks will include the steady-state production of the W76-1 LEP. Stockpile Systems quality evaluations will also continue, as will dismantlement of selected retired weapon systems.

Engineering Campaign
The Y-12 Enhanced Surveillance subprogram activity provides lifetime prediction and improved surveillance diagnostics and methods, including non-destructive techniques for canned sub-assemblies, cases, and non-nuclear components to the DSW program for transforming surveillance to be more predictive in finding defects in weapons. Lifetime-prediction efforts include work to improve knowledge of weapon materials, materials interactions, and aging phenomena. Y-12 work also includes development of tools to predict the future condition of the stockpile with enough lead-time to enable preventive maintenance of the stockpile. Diagnostic activities include full deployment of new quality-evaluation technologies, focused on evaluating the condition and aging behavior of canned sub-assemblies, cases, and non-nuclear components. The behavior of materials and components as they age beyond past experience must be defined in terms that can facilitate preventive maintenance of the stockpile.

Readiness Campaign
Two subprograms are supported by Y-12:

- *Stockpile Readiness:* examines modern and emerging technologies and applies them to the development of new or replacement design and production capabilities in those cases for which modern technology would lead to cost-effective, lean processes, shortened cycle times, built-in quality and acceptance, closer integration of activities across the nuclear weapons complex, a more productive workforce, and agile processes that enhance responsiveness to future national security needs. These efforts will revitalize the Y-12 ability to meet its mission requirements in a more efficient and cost-effective manner, and provide new or enhanced capabilities to meet the future needs of the nuclear weapons complex.

- *Advanced Design and Production Technologies (ADAPT):* continues and accelerates the development of advanced, cost-effective, and environmentally acceptable nuclear weapons-production technologies and design processes required to maintain an affordable and reliable nuclear weapons stockpile. The ADAPT technologies will result in reduced operating costs, improved manufacturing flexibility, and improved quality. Beginning in FY 2009, the Readiness Campaign will combine both capability development, heretofore funded from the ADAPT subprogram, and capability deployment within the Nonnuclear Readiness, High Explosives and Weapons Operations, and Stockpile Readiness subprograms for increased efficiency, sustainability and accountability at the sites. Some of the ADAPT projects specifically related to production capabilities may be funded from the Stockpile Readiness subprogram.

Readiness in Technical Base and Facilities (RTBF)
The RTBF program ensures the readiness of the facilities, infrastructure, materials, and personnel to support Defense Programs mission objectives at Y-12.

The elements of the Y-12 RTBF Program include the following:
- Maintaining base operation support for approximately 350 Y-12 buildings, as well as the entire site infrastructure; base operations include maintenance, utilities, and compliance;
- Providing construction line item management, including all pre-conceptual planning and other project costs (OPC) for all RTBF-funded line items;
- Developing and updating the master site plan and Ten Year Site Plan (TYSP);
- Providing inter- and intra-site containers for the transportation of special nuclear material and waste;
- Providing for the management and storage of HEU and other special nuclear materials;

- Managing legacy material disposition to promote footprint reduction and compliance with Design Basis Threat requirements;
- Providing for the recycle and recovery of HEU and Lithium;
- Managing responsibilities associated with the Chronic Beryllium Disease Prevention Program (CBDPP);
- Providing for management and disposition of newly generated waste from production operations; and
- Consolidating and disposing of excess uranium and other nuclear materials from the Y-12 Plant.

As noted earlier, two major RTBF projects, the Highly Enriched Uranium Materials Facility (HEUMF) and the Uranium Processing Facility (UPF) are underway to provide modern, consolidated enriched uranium storage and production and to enable the 90% reduction of the high security area.

Facilities and Infrastructure Recapitalization Program (FIRP)
The facility conditions of Y-12 are noticeably improved due in large measure to the aggressive execution of the Facilities and Infrastructure Recapitalization Program. Y-12 has established a deferred maintenance reduction program that is focused on mission facilities and infrastructure projects that directly support Directed Stockpile Work (DSW), Campaigns, and support transformation of the complex. For FY 2009, recapitalization projects will address deficiencies for electrical, mechanical, utility, specialty and structural systems across the site. Y-12 also continues to participate in the complex-wide Roof Asset Management Program (RAMP) to correct priority deficiencies and extend the life on the roofing assets. Y-12 is executing two Line Item projects that address the most demanding utility issues at Y-12 – (1) Steam Plant Life Extension and (2) Potable Water System Upgrade.

Transformation Disposition (TD)
Transformation Disposition will fund the elimination of excess facility footprint that is high priority to NNSA mission objective and goals and to support transformation initiatives at Y-12. The goal of the footprint reduction commitment is reducing the overall footprint at the site as well as decreasing security and energy costs. In FY 2009, Y-12 will eliminate excess facilities identified in the FY 2008 TYSP with TD funding. In addition to execution of D&D projects, the FY 2009 request includes planning for FY 2010 TD projects. Planning and design of D&D projects in advance of execution leads to development of solid project cost estimates and schedules.

Secure Transportation Asset
Y-12 provides mechanical and electrical support to the STA for the Fleet Management Program at Oak Ridge, TN. Support for STA equipment includes annual on-site preventive maintenance inspections, on-site surveillance, and electrician efforts to support incidental communications repair work that arises out of trip support activity.

For Engineering Armored Tractor (AT) Maintenance, Y-12 provides readied ATs in support of weekly mission requirements, as specified by STA. A Fleet of ATs will be maintained to STA specifications including preventive maintenance (Preparation-for-Use, Type 1, Type 2, Type 3, and DOE annual inspections) repair maintenance, and program-specified modifications. Material and effort of garage mechanics, electricians, and mobile equipment service persons to accomplish the maintenance objections are included. Y-12 will also provide effort for planning, training, and documentation of STA On-the-Job Training Program and provides fuel for operations of vehicles.

For Engineering Oak Ridge Escort Vehicles (EV) Maintenance – Mechanical & Vehicle Fuel, Y-12 provides readied EVs in support of weekly mission requirements as specified by AOEC. A fleet of EVs Escort Vehicles w/C Chassis (EV-Cs), Special Response Vehicles (SRVs), and Operational Enhancement Support (OES) vehicles will be maintained to STA specifications including preventive maintenance, repair maintenance, and STA specified modifications.

For Engineering Oak Ridge Safe Secure Transportation (SST)/Safeguard Transporter (SGT) mechanical maintenance, Y-12 provides readied trailers in support of weekly mission requirements as specified by STA. A fleet of trailers will be maintained to STA specification including preventive maintenance (Preparation-for-Ship, Preparation-for-Use, Annual Inspection, 120 Day generator inspection, and DOE annual inspection) repair maintenance, and program specified modifications.

Defense Nuclear Security
The Y-12 Defense Nuclear Security program provides protection measures consistent with protection requirements documented in the facility Site Safeguards and Security Plan (SSSP). For FY 2009 activities will focus on accomplishment of specific upgrades included in the DNS approved DBT implementation plan, including consolidation of Special Nuclear Material, adding protective force posts and redeploying protective force personnel to lengthen adversary delay times, implement new vehicle delay measures, and other interim barrier features. Y-12 should continue to focus on improving the efficiency of the security program, including modernization of the security infrastructure and implementation of technology upgrades to reduce the need for protective force posts and patrols

Cyber Security
The Cyber security program will focus on revitalization, which will enable NNSA to respond to its highest priorities and to address current and future risks; certification and accreditation for proper documentation of risks and justification of associated operations for systems at all sites; and, education and awareness that provides training for federal and contractor personnel to meet expanding skill requirements of NNSA cyber security and information environments.

Fissile Materials Disposition
Y-12 serves as the lead for all surplus highly enriched uranium (HEU) disposition activities through the HEU Disposition Program Office. Y-12 is also providing storage and repackaging for surplus HEU pending shipment to down-blending contractors.

ORO/Y-12 provides for the planning and implementation of HEU disposition activities, which includes blending and transfer of off-specification materials to the Tennessee Valley Authority, transfer of materials to Nuclear Fuel Services for down-blending associated with the Reliable Fuel Supply initiative, tracking and evaluation of surplus HEU inventories, and planning for disposition of unallocated surplus HEU material. The NNSA Y-12 Site Office and the Y-12 National Security Complex HEU Disposition Program Office assist the Office of Fissile Materials Disposition in planning and implementing the disposition program in the areas of strategic and tactical planning, oversight, technical analyses, regulatory coordination, business development and marketing, and coordination of interfaces among key participants and stakeholders. Y-12 also manages the design, certification, and procurement of shipping containers for surplus HEU and plutonium.

ARGONNE NATIONAL LABORATORY

FUNDING BY PROGRAM:

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
NNSA			
Weapons Activities			
Advanced Simulation and Computing Campaign	203	200	0
Readiness in Technical Base and Facilities	1,005	760	0
Nuclear Weapons Incident Response	1,897	2,084	2,188
Subtotal Weapons Activities	**3,105**	**3,044**	**2,188**
Defense Nuclear Nonproliferation			
Nonproliferation and International Security	6,339	7,376	6,907
International Nuclear Materials Protection and Cooperation	692	695	692
Fissile Materials Disposition	250	0	0
Global Threat Reduction Initiative	14,502	18,852	21,000
Subtotal Defense Nuclear Nonproliferation	**21,783**	**26,923**	**28,599**
Total, NNSA	**24,888**	**29,967**	**30,787**

OUT-YEAR FUNDING:

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
NNSA				
Weapons Activities				
Advanced Simulation and Computing Campaign	0	0	0	0
Readiness in Technical Base and Facilities	0	0	0	0
Nuclear Weapons Incident Response	2,297	2,412	2,533	2,660
Subtotal Weapons Activities	**2,297**	**2,412**	**2,533**	**2,660**
Defense Nuclear Nonproliferation				
Nonproliferation and International Security	5,130	5,390	5,811	5,956
International Nuclear Materials Protection and Cooperation	825	775	784	772
Fissile Materials Disposition	0	0	0	0
Global Threat Reduction Initiative	6,730	6,826	7,582	9,350
Subtotal Defense Nuclear Nonproliferation	**12,685**	**12,991**	**14,177**	**16,078**
Total, NNSA	**14,982**	**15,403**	**16,710**	**18,738**

EMPLOYMENT: Data not available, site is not NNSA landlord responsibility.

Congressional Items of Interest: None

Major Changes or Shifts: None

Site Description

INTRODUCTION:

The Argonne National Laboratory (ANL) is not a National Nuclear Security Administration (NNSA) managed site. The Office of Science is the site landlord for the Department of Energy. However, significant NNSA work is conducted at the site.

ACTIVITIES:

Global Threat Reduction Initiative
ANL provides significant technical, scientific, and management expertise to two of the three key subprograms of GTRI –Convert, and Remove—supporting the comprehensive GTRI approach to denying terrorists access to nuclear and radiological materials. The HEU Reactor Conversion subprogram supports the conversion of domestic and international civilian research reactors and isotope production facilities from the use of WMD-usable HEU fuel to LEU fuel. The Nuclear and Radiological Material Removal subprogram supports the removal or disposal of excess WMD-usable nuclear and radiological materials from civilian sites worldwide.

Nonproliferation and International Security
ANL supports export control work in the areas of licensing and international cooperation; safeguards work, especially in the non-Russian republics of the Former Soviet Union, fuel cycle analysis, and policymaking and negotiations regarding various arms control and nonproliferation regimes. For International Regimes and Agreements, ANL supports licensing operations through reviews of export controlled equipment, materials and software, and analytical tools and technical references for use in developing recommendations on U.S. export license applications, including WMD training to Department of Homeland Security and other enforcement agencies with specialized expertise in the control of nuclear reactor technology, and international safeguards technology assessment, policy support and nonproliferation assessment. In addition, ANL supports the activities involving International Emergency Management and Cooperation program. ANL supports the nonproliferation activities under the new Global Nuclear Energy Partnership initiative.

BROOKHAVEN NATIONAL LABORATORY

TABLES

FUNDING BY PROGRAM:

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
NNSA			
Weapons Activities			
Readiness in Technical Base and Facilities	199	165	0
Nuclear Weapons Incident Response	2,074	1,621	1,702
Subtotal Weapons Activities	**2,273**	**1,786**	**1,702**
Defense Nuclear Nonproliferation			
Nonproliferation and Verification R&D	1,350	1,845	1,335
Nonproliferation and International Security	3,011	3,503	3,281
International Nuclear Materials Protection and Cooperation	36,991	39,162	33,616
Global Threat Reduction Initiative	697	675	767
Subtotal Defense Nuclear Nonproliferation	**42,049**	**45,185**	**38,999**
Total, NNSA	**44,322**	**46,971**	**40,701**

OUT-YEAR FUNDING:

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
NNSA				
Weapons Activities				
Readiness in Technical Base and Facilities	0	0	0	0
Nuclear Weapons Incident Response	1,787	1,876	1,970	2,069
Subtotal Weapons Activities	**1,787**	**1,876**	**1,970**	**2,069**
Defense Nuclear Nonproliferation				
Nonproliferation and Verification R&D	1,762	1,894	1,989	2,036
Nonproliferation and International Security	5,692	5,980	6,447	6,608
International Nuclear Materials Protection and Cooperation	24,584	24,695	24,903	25,310
Global Threat Reduction Initiative	367	372	414	510
Subtotal Defense Nuclear Nonproliferation	**32,405**	**32,941**	**33,753**	**34,464**
Total, NNSA	**34,192**	**34,817**	**35,723**	**36,533**

EMPLOYMENT: Data not available, site is not NNSA landlord responsibility.

Congressional Items of Interest: None

Major Changes or Shifts: None

Site Description

INTRODUCTION:

The Brookhaven National Laboratory (BNL) is not a National Nuclear Security Administration (NNSA) managed site. The Office of Science is the site landlord for the Department of Energy. However, significant NNSA work is conducted at the site.

ACTIVITIES:

International Nuclear Materials Protection and Cooperation (MPC&A)
BNL provides experience in the design and implementation of MPC&A upgrades on Russian facilities by virtue of their actual work at such facilities and by their involvement with developing MPC&A approaches for such facilities. BNL provides experience in contracting with various Russian vendors, including government-run institutes, and contracts all of the down blending activities for material conversion and consolidation. BNL provides support in the development and delivery of MPC&A training courses. BNL is the lead laboratory that provides support for the MPC&A Operations Monitoring Project, the Technical Survey Team Project, the Insider Threat Review Project, and for the Project Planning and Effectiveness Project.

Nonproliferation and International Security
For International Regimes and Agreements, BNL supports international safeguards technology assessment, policy support and nonproliferation assessment. BNL supports international cooperation (sister laboratories) efforts and the activities in the Russian closed cities in the area of economic development, and the nonproliferation activities under the new Global Nuclear Energy Partnership initiative.

Nonproliferation and Verification Research and Development
BNL develops radiation detection, scientific foundations, and instrumentation to improve the technical foundations of radiation detection through demonstrations of advanced concepts and systems to detect and track fissile materials. BNL is using the National Synchrotron Light Source to characterize the electrical, structural, and transport properties of advanced detector materials at the micron scale to identify defects that correlate with poor detector performance.

CHICAGO OPERATIONS OFFICE

TABLES

FUNDING BY PROGRAM:

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
NNSA			
Weapons Activities			
Directed Stockpile Work	951	0	0
Advanced Simulation and Computing Campaign	4,001	4815	0
Readiness Campaign	29,509	29,653	36,122
Subtotal Weapons Activities	**34,461**	**34,468**	**36,122**
Total, NNSA	**34,461**	**34,468**	**36,122**

OUT-YEAR FUNDING:

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
NNSA				
Weapons Activities				
Directed Stockpile Work	0	0	0	0
Advanced Simulation and Computing Campaign	0	0	0	0
Readiness Campaign	22,353	34,663	70,822	0
Subtotal Weapons Activities	**22,353**	**34,663**	**70,822**	**0**
Total, NNSA	**22,353**	**34,663**	**70,822**	**0**

EMPLOYMENT: Data not available, site is not NNSA landlord responsibility.

Congressional Items of Interest: None

Major Changes or Shifts: None

Site Description

INTRODUCTION:

The Chicago Operations Office (CHO) is not a National Nuclear Security Administration (NNSA) managed operation within the Department of Energy. However, significant NNSA work is conducted through CHO using the office's technical and administrative expertise, and funding and contracting arrangements.

ACTIVITIES:

Readiness Campaign
CHO supports the Tritium Readiness activity to re-establish and operate the Department's capability for producing tritium to maintain the national inventory of tritium to support the nuclear weapons stockpile. The activity is being implemented at the Tennessee Valley Authority's Watts Bar reactor.

IDAHO NATIONAL LABORATORY

TABLES

FUNDING BY PROGRAM:

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
NNSA			
Weapons Activities			
Directed Stockpile Work	120	105	0
Readiness Campaign	3,200	3,167	8,500
Readiness in Technical Base and Facilities	2,136	2515	0
Nuclear Weapons Incident Response	196	558	586
Defense Nuclear Security	0	14713	0
Subtotal Weapons Activities	**5,652**	**21,058**	**9,086**
Defense Nuclear Nonproliferation			
Nonproliferation and Verification R&D	3,790	5,178	3,747
Nonproliferation and International Security	837	974	912
International Nuclear Materials Protection and Cooperation	0	0	591
Global Threat Reduction Initiative	22,554	22,648	26,000
Subtotal Defense Nuclear Nonproliferation	**27,181**	**28,800**	**31,250**
Naval Reactors	**63,517**	**56,361**	**60,300**
Total, NNSA	**96,350**	**106,219**	**100,636**

OUT-YEAR FUNDING:

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
NNSA				
Weapons Activities				
Pit Manufacturing and Certification Campaign	0	0	0	0
Readiness Campaign	400	0	0	0
Readiness in Technical Base and Facilities	0	0	0	0
Nuclear Weapons Incident Response	615	646	678	712
Defense Nuclear Security	0	0	0	0
Subtotal Weapons Activities	**1,015**	**646**	**678**	**712**
Defense Nuclear Nonproliferation				
Nonproliferation and Verification R&D	4,945	5,317	5,583	5,712
Nonproliferation and International Security	622	653	704	722
International Nuclear Materials Protection and Cooperation	499	482	485	488
Global Threat Reduction Initiative	7,075	7,176	7,971	9,830
Subtotal Defense Nuclear Nonproliferation	**13,141**	**13,628**	**14,743**	**16,752**
Naval Reactors	**61,600**	**63,100**	**64,500**	**66,000**
Total, NNSA	**75,756**	**77,374**	**79,921**	**83,464**

EMPLOYMENT: Data not available, site is not NNSA landlord responsibility.

Congressional Items of Interest: None

Major Changes or Shifts: None

Site Description

INTRODUCTION:

The Idaho National Laboratory (INL) is not a National Nuclear Security Administration (NNSA) managed site. The Office of Nuclear Energy is the site landlord for the Department of Energy. However, significant NNSA work is conducted at the site.

ACTIVITIES:

Global Threat Reduction Initiative
INL provides significant technical, scientific, and management expertise to the three key subprograms of GTRI –Convert, Remove, and Protect—supporting the comprehensive GTRI approach to denying terrorists access to nuclear and radiological materials. The HEU Reactor Conversion subprogram supports the conversion of domestic and international civilian research reactors and isotope production facilities from the use of WMD-usable HEU fuel to LEU fuel. The Nuclear and Radiological Material Removal subprogram supports the removal or disposal of excess WMD-usable nuclear and radiological materials from civilian sites worldwide. The Nuclear and Radiological Material Protection subprogram supports the protection of at-risk WMD-usable nuclear and radiological materials worldwide from theft and sabotage until a more permanent threat reduction solution can be implemented.

Nonproliferation and Verification Research and Development
INL provides research to assess alternative fissile material production methods and advanced nuclear fuel cycle development. INL also provides research in improved mass spectrometry applications and nondestructive measurement technologies to obtain micro-structural information on the quality of advanced detector materials.

Naval Reactors (NR)
The Advance Test Reactor (ATR) is designed to evaluate the effects of intense radiation on material samples, especially nuclear fuels. The principal customer for the ATR over most of its lifetime has been the NR program. The ATR produces very high neutron flux, which allows the effects of many years of operation in other reactor environments to be simulated in as short as one-tenth the time. Subsequent evaluations of test specimens in the NR Expended Core Facility and the Knolls Atomic Power Laboratory Radioactive Materials Laboratory facilities are the main source of data on the performance of reactor fuel, poison, and structural materials under irradiated conditions. NR continues to develop enhanced systems for high temperature irradiation testing with precise temperature control and environmental monitoring in the ATR.

OAK RIDGE NATIONAL LABORATORY

TABLES

FUNDING BY PROGRAM:

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
NNSA			
Weapons Activities			
Directed Stockpile Work	707	3	0
Advanced Simulation and Computing Campaign	700	808	0
Readiness in Technical Base and Facilities	6,243	4,050	0
Nuclear Weapons Incident Response	786	1,142	1,199
Subtotal Weapons Activities	**8,436**	**6,003**	**1,199**
Defense Nuclear Nonproliferation			
Nonproliferation and Verification R&D	9,164	12,521	9,059
Nonproliferation and International Security	13,493	15,700	14,703
International Nuclear Materials Protection and Cooperation	141,822	129,278	69,537
Fissile Materials Disposition	2,060	0	0
Global Threat Reduction Initiative	7,139	8,503	9,500
Subtotal Defense Nuclear Nonproliferation	**173,678**	**166,002**	**102,799**
Total, NNSA	**182,114**	**172,005**	**103,998**

OUT-YEAR FUNDING:

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
NNSA				
Weapons Activities				
Directed Stockpile Work	0	0	0	170
Advanced Simulation and Computing Campaign	0	0	0	0
Readiness in Technical Base and Facilities	0	0	0	0
Nuclear Weapons Incident Response	1,259	1,322	1,388	1,457
Subtotal Weapons Activities	**1,259**	**1,322**	**1,388**	**1,627**
Defense Nuclear Nonproliferation				
Nonproliferation and Verification R&D	11,958	12,857	13,500	13,819
Nonproliferation and International Security	16,043	16,856	18,173	18,625
International Nuclear Materials Protection and Cooperation	49,160	46,615	47,006	47,837
Fissile Materials Disposition	0	0	0	0
Global Threat Reduction Initiative	6,347	6,438	7,151	8,820
Subtotal Defense Nuclear Nonproliferation	**83,508**	**82,766**	**85,830**	**89,101**
Total, NNSA	**84,767**	**84,088**	**87,218**	**90,728**

EMPLOYMENT: Data not available, site is not NNSA landlord responsibility.

Congressional Items of Interest: None

Major Changes or Shifts: None

Site Description

INTRODUCTION:

The Oak Ridge National Laboratory (ORNL) is not a National Nuclear Security Administration (NNSA) managed site. The Office of Science is the site landlord for the Department of Energy. However, significant NNSA work is conducted at the site.

ACTIVITIES:

International Nuclear Materials Protection and Cooperation (MPC&A)
ORNL subject matter experts have unique working experience in the development of vulnerability assessments; personnel reliability program development for insider protection; the design and application of physical security and material control and accounting systems; performance assurance; sustainability; and life cycle management; transportation security and packaging; storage; and response force training for Ministry of Defense, Rosatom, and civilian Russian sites. ORNL's experience in defense conversion, and the handling, processing and safeguard of extremely large and varied inventories of enriched uranium and related materials, provides unique experience to the Material Conversion and Consolidation efforts. In addition, ORNL provides expertise in the areas of transportation security, acceptance testing, performance assurance, maintenance, and procedures to the national programs. ORNL also provides training expertise and technical support to Second Line of Defense program. ORNL also serves as the laboratory intermediary for complementary DOE and Defense Threat Reduction Agency project areas related to sustainability.

Nonproliferation and International Security
ORNL supports safeguards work verification of nuclear weapons program dismantlement; licensing activities, and export control cooperation with international partners and the nonproliferation activities under the new Global Nuclear Energy Partnership initiative. ORNL supports the development of nuclear transparency measures. The facility also provides expertise on various arms control and nonproliferation agreements and treaties. ORNL further provides technical support to the Subcommittee on Technical Programs and Cooperation and the U.S.-Russia-IAEA Working Group on the Trilateral Initiative (TI). The facility provides further technical support related to safeguards and verification measures and uranium enrichment processing facilities, and supports work with Russia to negotiate and implement transparent nuclear reductions. For International Regimes and Agreements, ORNL supports licensing operations through reviews of export controlled equipment, materials and software, and analytical tools and technical references for use in developing recommendations on U.S. export license applications, including WMD training to Department of Homeland Security and other enforcement agencies, specialized expertise in the control of nuclear reactor-related technology, prepares analyses to revise U.S. and international nuclear export control lists, studies of export control implications of the development of advanced fuel cycle technologies, and tracks global machine tool supply trends. ORNL also supports international safeguards technology assessment, policy support and nonproliferation assessment. ORNL provides the HEU TI program one segment of the Blend Down Monitoring System (BDMS) that measures the flow of HEU as it is blended-down at Russian uranium processing facilities and traceability of HEU converted to LEU. ORNL personnel support the development, shipping, installation, licensing and maintenance of BDMS equipment, as well as training of both Russian and U.S. personnel on BDMS equipment, operations and maintenance. Additionally,

ORNL provides technical experts to serve as permanent and special monitors at Russian facilities and to interpret resultant BDMS data.

Fissile Materials Disposition
ORNL conducts R&D associated with the irradiation of MOX fuel in domestic and commercial reactors to include post irradiation examination of MOX fuel, advise on reactor licensing, and supervises fuel qualification R&D. ORNL supports the Parallex and Gas Turbine-Modular Helium Reactor (GT-MHR) projects and disposition of Russian plutonium.

Nonproliferation Verification Research and Development
ORNL conducts research to address the threat from nuclear weapons and radiological disposal devices. ORNL also provides leading-edge research into candidate materials, which could replace exiting nuclear detectors used for gamma spectroscopy and neutron detection. ORNL provides nuclear material analysis efforts using advanced mass spectrometry and characterization of nuclear materials. ORNL leads research efforts to better understand and detect uranium enrichment operations and contributes to understanding associated effluents associated with those processes.

Global Threat Reduction Initiative
ORNL provides significant technical, scientific, and management expertise to two of the three key subprograms of GTRI –Remove, and Protect—supporting the comprehensive GTRI approach to denying terrorists access to nuclear and radiological materials. The Nuclear and Radiological Material Removal subprogram supports the removal or disposal of excess WMD-usable nuclear and radiological materials from civilian sites worldwide. The Nuclear and Radiological Material Protection subprogram supports the protection of at-risk WMD-usable nuclear and radiological materials worldwide from theft and sabotage until a more permanent threat reduction solution can be implemented.

PACIFIC NORTHWEST NATIONAL LABORATORY

TABLES

FUNDING BY PROGRAM:

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
NNSA			
Weapons Activities			
Directed Stockpile Work	0	23	0
Readiness Campaign	14,428	6,689	9,000
Nuclear Weapons Incident Response	1,278	1,912	3,628
Subtotal Weapons Activities	**15,706**	**8,624**	**12,628**
Defense Nuclear Nonproliferation			
Nonproliferation and Verification R&D	37,023	61,755	40,144
Nonproliferation and International Security	14,984	17,434	16,327
International Nuclear Materials Protection and Cooperation	87,558	100,085	82,479
Fissile Materials Disposition	860	0	0
Global Threat Reduction Initiative	12,851	18,624	21,200
Subtotal Defense Nuclear Nonproliferation	**153,276**	**197,898**	**160,150**
Total, NNSA	**168,982**	**206,522**	**172,778**

OUT-YEAR FUNDING:

(dollars in thousands)

	FY 2010	FY 2011	FY 2012	FY 2013
NNSA				
Weapons Activities				
Directed Stockpile Work	0	0	0	0
Readiness Campaign	10,000	6,000	6,000	0
Nuclear Weapons Incident Response	2,990	3,139	3,296	3,461
Subtotal Weapons Activities	**12,990**	**9,139**	**9,296**	**3,461**
Defense Nuclear Nonproliferation				
Nonproliferation and Verification R&D	38,783	39,841	40,054	41,088
Nonproliferation and International Security	17,435	18,319	19,748	20,242
International Nuclear Materials Protection and Cooperation	83,561	81,922	82,112	84,252
Fissile Materials Disposition	0	0	0	0
Global Threat Reduction Initiative	7,726	7,835	8,705	10,740
Subtotal Defense Nuclear Nonproliferation	**147,505**	**147,917**	**150,619**	**156,322**
Total, NNSA	**160,495**	**157,056**	**159,915**	**159,783**

EMPLOYMENT: Data not available, site is not NNSA landlord responsibility.

Congressional Items of Interest: Construction of the Pacific Northwest National Laboratory Replacement Facility.

Major Changes or Shifts: None

Site Description

INTRODUCTION:

The Pacific Northwest National Laboratory (PNNL) is not a National Nuclear Security Administration (NNSA) managed site. The Office of Science is the site landlord for the Department of Energy. However, significant NNSA work is conducted at the site.

ACTIVITIES:

Nonproliferation and Verification Research and Development
PNNL provides tools for radionuclide detection and statistical expertise (seismic discrimination) in the ground-based portion of the nuclear detonation detection program. PNNL plays a key role in the identification of detection signatures and observables, nonproliferation data exploitation, leading edge research and in development of "spectral signatures library" to aid in proliferation signatures detection. The spectral measurements being conducted at PNNL are state-of-the-art in accuracy and sensitivity. PNNL is providing nuclear materials analysis efforts (advanced mass spectrometry developments, ultra-sensitive separation and detection techniques) and in radiation detection R&D (HEU detection, long-range SNM detection, and new room-temperature, high-resolution materials).

Construction: PNNL provides capabilities replacement efforts for NNSA in the 300 Area and in the new triangle area. The acceleration of Environment Management clean-up activities, with respect to the River Corridor Contract, forces the evacuation of most of the 300 Area facilities by 2009. This project supports a joint effort with the DOE Office of Science and the Department of Homeland Security to construct the 300 Area PNNL Capabilities Replacement Facilities at Hanford. PNNL provides significant research in the development of methods and tools for enhanced detection of uranium enrichment and plutonium reprocessing facilities using both ground-based effluent collectors and remote sensing systems. PNNL provides tools for nuclear forensics sample collection efforts in post-detonation environments.

Nonproliferation and International Security
PNNL assists the Dismantlement and Transparency program by providing support for conducting technical exchanges and technology development under the Warhead Safety and Security Exchanges Agreement, HEU Purchase Agreement policy and transparency development, Plutonium Production Reactor Agreement implementation, development of nuclear transparency measures, technical analysis and technology development, and regional security efforts in policymaking and negotiations regarding various nonproliferation and arms control regimes. In addition, PNNL provides the International Regimes and Agreements program with licensing operations through reviews of export controlled equipment, materials and software, and analytical tools and technical references for use in developing recommendations on U.S. export license applications, including Chemical/ Biological Weapons related training to Department of Homeland Security, multilateral outreach through support efforts for policymaking and negotiations various nonproliferation control regimes, international safeguards technology assessment, policy support and nonproliferation assessments, and international cooperation, primarily in the Former Soviet Union but increasingly in transit states as well. For the Global Security Engagement and Cooperation program, PNNL supports the safeguards tools and methods development, IAEA safeguards cooperation and verification of DPRK and other proliferant states, IAEA environmental sampling QA/QC, vulnerability assessment support for foreign sites of interest, physical

protection upgrades, training to foreign nationals as needed, Additional Protocol implementation. In addition, PNNL provides support for commercialization efforts globally and efforts to downsize the Russian nuclear weapons complex and helps create business opportunities for displaced weapons workers. PNNL also supports the nonproliferation activities under the new Global Nuclear Energy Partnership initiative.

International Nuclear Materials Protection and Cooperation
PNNL provides technical, contracting, and management expertise for DOE's INMP&C Program. In particular, this includes the efforts of experts in physical security, material control and accounting, and protective forces, as well as experienced project managers. PNNL also manages several projects related to MPC&A infrastructure in Russia, including physical protection, material, control and accounting, and protective forces training, regulatory development, and inspections/oversight. In addition, PNNL management and technical experts provide project management support and training expertise to the Second Line of Defense program.

Global Threat Reduction Initiative (GTRI)
PNNL provides significant technical, scientific, and management expertise to two of the three key subprograms of GTRI –Remove, and Protect—supporting the comprehensive GTRI approach to denying terrorists access to nuclear and radiological materials. The Nuclear and Radiological Material Removal subprogram supports the removal or disposal of excess WMD-usable nuclear and radiological materials from civilian sites worldwide. The Nuclear and Radiological Material Protection subprogram supports the protection of at-risk WMD-usable nuclear and radiological materials worldwide from theft and sabotage until a more permanent threat reduction solution can be implemented.

GENERAL PROVISIONS

SEC. 301. CONTRACT COMPETITION.
(a) None of the funds in this or any other appropriations Act for fiscal year **[**2008 **]***2009* or any previous fiscal year may be used to make payments for a noncompetitive management and operating contract, or a contract for environmental remediation or waste management in excess of $100,000,000 in annual funding at a current or former management and operating contract site or facility, or award a significant extension or expansion to an existing management and operating contract, or other contract covered by this section, unless such contract is awarded using competitive procedures or the Secretary of Energy grants, on a case-by-case basis, a waiver to allow for such a deviation. The Secretary may not delegate the authority to grant such a waiver.
(b) *In this section:*
(*1*) *The term "noncompetitive management and operating contract" means a contract that was awarded more than 50 years ago without competition for the management and operation of Ames Laboratory, Argonne National Laboratory, Lawrence Berkeley National Laboratory, Livermore National Laboratory, and Los Alamos National Laboratory.*
(*2*) The term "competitive procedures" has the meaning provided in section 4 of the Office of Federal Procurement Policy Act (41 U.S.C. 403) and includes procedures described in section 303 of the Federal Property and Administrative Services Act of 1949 (41 U.S.C. 253) other than a procedure that solicits a proposal from only one source.
(*c*) *For all management and operating contracts other than those listed in subsection (b)(1), none of the funds appropriated by this Act may be used to award a management and operating contract, unless such contract is awarded using competitive procedures or the Secretary of Energy grants, on a case-by-case basis, a waiver to allow for such a deviation. The Secretary may not delegate the authority to grant such a waiver. At least 60 days before a contract award for which the Secretary intends to grant such a waiver, the Secretary shall submit to the Committees on Appropriations of the House of Representatives and the Senate a report notifying the Committees of the waiver and setting forth, in specificity, the substantive reasons why the Secretary believes the requirement for competition should be waived for this particular award.*
[(c) Within 30 days of formally notifying an incumbent contractor that the Secretary intends to grant such a waiver, the Secretary shall submit to the Subcommittees on Energy and Water Development of the Committees on Appropriations of the House of Representatives and the Senate a report notifying the Subcommittees of the waiver and setting forth, in specificity, the substantive reasons why the Secretary believes the requirement for competition should be waived for this particular award.**]**
SEC. 302. UNFUNDED REQUESTS FOR PROPOSALS. None of the funds appropriated by this Act may be used to prepare or initiate Requests For Proposals (RFPs) for a program if the program has not been funded by Congress.
SEC. 303. WORKFORCE RESTRUCTURING. None of the funds appropriated by this Act may be used to—
(1) develop or implement a workforce restructuring plan that covers employees of the Department of Energy; or

(2) provide enhanced severance payments or other benefits for employees of the Department of Energy, under section 3161 of the National Defense Authorization Act for Fiscal Year 1993 (Public Law 102-484; 42 U.S.C. 7274h).

SEC. 304. SECTION 3161 ASSISTANCE. None of the funds appropriated by this Act may be used to augment the funds made available for obligation by this Act for severance payments and other benefits and community assistance grants under section 3161 of the National Defense Authorization Act for Fiscal Year 1993 (Public Law 102-484; 42 U.S.C. 7274h) unless the Department of Energy submits a reprogramming **[**request**]** *notification* to the appropriate congressional committees.

SEC. 305. UNEXPENDED BALANCES. 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. 306. BONNEVILLE POWER AUTHORITY SERVICE TERRITORY. None of the funds in this or any other Act for the Administrator of the Bonneville Power Administration may be used to enter into any agreement to perform energy efficiency services outside the legally defined Bonneville service territory, with the exception of services provided internationally, including services provided on a reimbursable basis, unless the Administrator certifies in advance that such services are not available from private sector businesses.

SEC. 307. USER FACILITIES. When the Department of Energy makes a user facility available to universities or other potential users, or seeks input from universities or other potential users regarding significant characteristics or equipment in a user facility or a proposed user facility, the Department shall ensure broad public notice of such availability or such need for input to universities and other potential users. When the Department of Energy considers the participation of a university or other potential user as a formal partner in the establishment or operation of a user facility, the Department shall employ full and open competition in selecting such a partner. For purposes of this section, the term "user facility" includes, but is not limited to: (1) a user facility as described in section 2203(a)(2) of the Energy Policy Act of 1992 (42 U.S.C. 13503(a)(2)); (2) a National Nuclear Security Administration Defense Programs Technology Deployment Center/User Facility; and (3) any other Departmental facility designated by the Department as a user facility.

SEC. 308. INTELLIGENCE ACTIVITIES. 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 **[**2008 **]***2009* until the enactment of the Intelligence Authorization Act for fiscal year **[**2008 **]***2009*.

[SEC. 309. LABORATORY DIRECTED RESEARCH AND DEVELOPMENT. Of the funds made available by the Department of Energy for activities at government-owned, contractor-operator operated laboratories funded in this Act or subsequent Energy and Water Development Appropriations Acts, the Secretary may authorize a specific amount, not to exceed 8 percent of such funds, to be used by such laboratories for laboratory-directed research and development: *Provided*, That the Secretary may also authorize a specific amount not to exceed 4 percent of such funds, to be used by the plant manager of

a covered nuclear weapons production plant or the manager of the Nevada Site Office for plant or site-directed research and development: *Provided further*, That notwithstanding Department of Energy order 413.2A, dated January 8, 2001, beginning in fiscal year 2006 and thereafter, all DOE laboratories may be eligible for laboratory directed research and development funding.**]**

[SEC. 310. YIELD RATE. For fiscal year 2008, except as otherwise provided by law in effect as of the date of this Act or unless a rate is specifically set by an Act of Congress thereafter, the Administrators of the Southeastern Power Administration, the Southwestern Power Administration, and the Western Area Power Administration, shall use the "yield" rate in computing interest during construction and interest on the unpaid balance of the costs of Federal power facilities. The yield rate shall be defined as the average yield during the preceding fiscal year on interest-bearing marketable securities of the United States which, at the time the computation is made, have terms of 15 years or more remaining to maturity.**]**

[SEC. 311. USE PERMIT. The Use Permit granted to the contractor for activities conducted at the Pacific Northwest National Laboratory by Agreement DE-GM05-00RL01831 between the Department of Energy and the contractor shall continue in effect during the term of the existing Operating Contract and the extensions or renewals thereof and shall be incorporated into any future management and operating contract for the Pacific Northwest National Laboratory and such Use Permit may not be waived, modified or terminated unless agreed to by both contractor and the Department of Energy.**]**

[SEC. 312. (a) ACROSS-THE-BOARD RESCISSIONS.—There is hereby rescinded—

(1) from discretionary accounts in this title that contain congressionally directed projects, an amount equal to 1.6 percent of the budget authority provided for fiscal year 2008 for such projects; and

(2) from all discretionary accounts in this title, an amount equal to 0.91 percent of the other budget authority provided for fiscal year 2008.

(b) DEFINITIONS.—For purposes of this section: (1) The term "congressionally directed project" means a congressional earmark or congressionally directed spending item specified in the list of such earmarks and items for this division that is included in the explanatory statement described in section 4 (in the matter preceding division A of this consolidated Act).

(2) The term "other budget authority" means an amount equal to all discretionary budget authority, less the amount provided for congressionally directed projects.

(c) PROPORTIONATE APPLICATION TO OTHER PROGRAMS, PROJECTS, AND ACTIVITIES.—Any rescission made by subsection (a)(2) shall be applied proportionately—

(1) to each discretionary account; and

(2) within each such account, to each program, project, and activity (with programs, projects, and activities as delineated in the appropriation Act or accompanying reports for the relevant fiscal year covering such account).

(d) REPORT.—Within 30 days after the date of the enactment of this section, the Director of the Secretary of Energy shall submit to the Committees on Appropriations of the House of Representatives and the Senate a report specifying the account and amount of each rescission made pursuant to this section.**]**

SEC. *309. Section 312 of the Energy and Water Development Appropriations Act, 2004 (Pub. L. 108-137), is amended as follows: (1) In the first sentence by inserting between "the material" and "in the concrete silos", the words "formerly stored", by inserting before the period: "when such material is disposed at an Nuclear Regulatory Commission-regulated or Agreement State-regulated facility"; and (2) In the second sentence, striking "for the purpose" and everything that follows, and inserting; "after the material has been disposed at an NRC-regulated or Agreement materials being disposed as NRC-regulated or Agreement State-regulated facilities and shall not preclude the materials from otherwise being disposed at facilities operated by the Department of Energy so long as the materials meet the disposal facility's waste acceptance criteria." Not to exceed 5 per centum of any appropriation made available for Department of Energy activities funded in this Act or subsequent Energy and Water Development Appropriations Acts, not to exceed $5,000,000, may hereafter be transferred between such appropriations, but no such appropriation, except as otherwise provided, shall be increased or decreased by more than 5 per centum by any such transfers, and any such proposed transfers: Provided, That 15 days in advance of such transfer, notice shall be submitted to the Committees on Appropriations of the House and Senate.*

SEC. *310. Not to exceed 5 per centum of any appropriation made available for Department of Energy activities funded in this Act or subsequent Energy and Water Development 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 per centum by any such transfers, and notification of such transfers shall be submitted promptly to the Committees on Appropriations of the House and Senate.*

SEC. *311. Section 311 of the Energy and Water Development Appropriations Act, 2008 is repealed. (Energy and Water Development and Related Agencies Appropriations Act, 2008.)*