Directed Stockpile Work

Program Mission

The Directed Stockpile Work (DSW) mission encompasses a broad range of activities that directly support weapons in the enduring U.S. nuclear stockpile, and disposal of retired weapons in accordance with the Nuclear Weapons Stockpile Plan. Major activities supporting the enduring stockpile include warhead maintenance and evaluation, military liaison, production support, and research & development including engineering and certification activities. General workload activities include refurbishment, limited life component exchange (LLCE), laboratory and flight tests, military training, maintenance of field manuals and documents, lifetime surety, reliability assessments, and sustaining DSW capabilities for the future. Weapon-specific activities include procurement of non-nuclear materials for fabrication of components, qualification and purchase of commercial off the shelf (COTS) components, assembly/ disassembly of weapons for maintenance activities, annual certification of weapons in the stockpile, and dismantlement/disposal of retired weapons and excess components.

Deliverables are defined/scheduled in several classified Nuclear Weapons Complex directives, including the current Nuclear Weapons Production and Planning Directive (P&PD), Master Nuclear Schedule, Integrated Weapons Activity Plan (IWAP), and specific weapon Program Control Documents (PCDs), Component Description Documents, and program planning documents. Current priority for general DSW support is to ongoing Life Extension Programs (LEPs) and to other ongoing refurbishments. Two major responsibilities of the DSW Program are to: annually report the reliability of the stockpile and to annually report the surety of the stockpile to the President and, subsequently, to the Congress.

The DSW Program consists of six subprograms: Stockpile Research & Development; Stockpile Maintenance; Stockpile Evaluation; Dismantlement and Disposal; Field Engineering, Training and Manuals; and Production Support.

Program Strategic Performance Goal

NS 1-1: A program of warhead evaluation, maintenance, refurbishment, research and development, and production, planned in partnership with the Department of Defense.

Performance Indicators

Approved Annual Nuclear Weapons Stockpile Certification and Report to the President and subsequently to Congress

Approved Annual Nuclear Weapons Stockpile Surety Assessment and Report to the President

Percentage of directive scheduled activities supporting First Production Unit (FPU) of the Life Extension Programs (LEPs), other approved refurbishments, and Advanced Concepts Initiative completed

The number of reliable and safe nuclear stockpile weapons available to respond to national security requirements

Number of significant finding investigations (SFI) closeouts

Percent of warhead/bomb alterations (ALTs) completed on/ahead of schedule

Percent of laboratory tests conducted
Percent of weapons dismantled on/ahead of schedule.

Annual Performance Results and Targets

FY 2002 Results	FY 2003 Targets	FY 2004 Targets
Completed the Annual Stockpile Certification and Report to the President and, subsequently, to Congress.	Complete by March 2003 the Annual (FY 2002) Stockpile Certification and Report to the President and, subsequently, to Congress.	Complete by March 2004 the Annual (FY 2003) Stockpile Certification and Report to the President and, subsequently, to Congress.
Forwarded the 2000 Nuclear Weapons Council Report on Nuclear Weapons Surety to the President on February 14, 2002.	Complete by June 30, 2003 the Annual (FY 2002) Surety Assessment and Report to the President.	Complete by June 30, 2004 the Annual (FY 2003) Surety Assessment and Report to the President.
Maintained the Stockpile in the required state of readiness.	Maintain the Stockpile in the required state of readiness.	Maintain the Stockpile in the required state of readiness.
Completed all directive scheduled: Significant Findings Investigations Closeouts; Nuclear Explosive Safety Studies; Operational Safety Reviews; Disassembly & Inspections; Major Testing, evaluation, and production support Milestones.	Complete all directive scheduled: Significant Findings Investigations Closeouts; Nuclear Explosive Safety Studies; Operational Safety Reviews; Disassembly & Inspections; Major Testing, evaluation, and production support Milestones.	Complete all directive scheduled Significant Findings Investigations Closeouts.

FY 2002 Results	FY 2003 Targets	FY 2004 Targets
Completed 100% of major milestones supporting: B61 refurbishment First Production Unit (FPU) in FY 2006; W76 refurbishment FPU in FY 2007; W80 refurbishment FPU in FY 2006; W87 and other weapon system refurbishments	Complete 100% of major milestones supporting: B61 refurbishment First Production Unit (FPU) in FY 2006; W76 refurbishment FPU in FY 2007; W80 refurbishment FPU in FY 2006; W87 and other weapon system refurbishments; Begin Advanced Concepts Initiative.	Complete 100% of major milestones scheduled for this year to support B61 refurbishment First Production Unit (FPU) in FY 2006; W76 refurbishment FPU in FY 2007; W80 refurbishment FPU in FY 2006; and Advanced Concepts Initiative.
Completed 100% of the major scheduled milestones in the Production & Planning Directive, Integrated Weapons Activity Plan, and Master Nuclear Schedule.	Complete 100% of the major scheduled milestones in the Production & Planning Directive, Integrated Weapons Activity Plan, and Master Nuclear Schedule.	Complete 100% of the W87 ALT 342 deliveries. Complete 100% of the W78 ALT 351 deliveries.
Overall, met 101% of Production and Planning Directive Goal for Dismantlement and Disposal, including: W56: 100%; W79: 95%; and Quality Assurance and Miscellaneous: 132%.	Meet 100 % of Production and Planning Directive Goal for weapon dismantlements, disposals, and stored components.	Complete 100% of scheduled weapons dismantlements. Complete 90% of the scheduled major component laboratory tests
Meet all annual weapons maintenance, refurbishment, and dismantlement schedules developed jointly by the DOE and DoD.	Meet all annual weapons maintenance, refurbishment, and dismantlement schedules developed jointly by the DOE and DoD.	Meet all annual weapons maintenance, refurbishment, and dismantlement schedules developed jointly by the DOE and DoD.

Note: NNSA is working with the Air Force to balance the programmatic surety issues with the availability of Flight Test Assets. The first production unit schedule may be earlier for the Advanced Cruise Missile than the Air Launched Cruise Missile's initial operating capability in FY 2008.

Significant Program Shifts

Implementation of the Nuclear Posture Review is underway, the resulting nuclear stockpile will satisfy the requirement that nuclear forces remain safe, reliable and effective. As in the previous years, the plan is to

maintain a safe and reliable stockpile in the absence of nuclear testing. The NNSA has recommended, and the Department of Defense (DoD) agrees, that the refurbishment of four warhead types is needed to support our future nuclear deterrence posture. The near-term investment in the basic capacity and capability of the production complex to carry out these refurbishments is largely independent of the total number of warheads to be refurbished. NNSA believes that maintaining current nuclear weapons capabilities, and restoring lost capabilities, will require substantial additional investment in R&D and production infrastructure and, most importantly, people. R&D activities have been refocused as part of the Advanced Concepts Initiative (ACI) to ensure that current nuclear weapons capabilities are maintained or restored.

The NNSA must be able to address multiple DSW issues including significant activities supporting future weapon refurbishments; maintenance of an aging stockpile; the need for intensive internal and external review to ensure that the program will achieve its goals; preserving the institutional viability of the laboratories, production plants, and the test site; and issues surrounding an aging workforce in the nuclear weapons complex. The FY 2004 Request places a high priority on accomplishing the near-term workload to support the stockpile; however, long-term science and technology investments must also continue to ensure capability to support ongoing missions.

The FY 2002 DSW program supported the National Nuclear Security Administration (NNSA) strategic goal to maintain and enhance the safety, security, and reliability of the nation's nuclear weapons stockpile. The program conducted warhead evaluations through surveillance, assessment and certification; maintenance activities including replacement of limited life components, continued the refurbishment activities for the W87, continued pre-refurbishment design and planning for the W76, W80, and B61 warheads; and conducted dismantlements in accordance with the Retire and Disposal Program Control Document.

NNSA successfully responded to a number of new and significant DoD requirements, including Non-Destructive Evaluation (NDE) of B61-11 units as a risk mitigation while developing the more comprehensive B61-7/11 Life Extension Program (LEP) and augmented NDE of B61-7 units to ensure continued high reliability. Work leading to a major decision point (approval of Phase 6.3) in November 2002 for the B61-7/11 LEP was performed, such as the program's material "make or reuse" decision. NNSA and DoD agreed on a "life-of-type buy" plan for the W76 and W80 LEPs. The NNSA has also evolved the W76 and W80 Block 2 start points into decision points for determining if changes to technical scope would be required.

During the Programming and Budgeting Phase of the FY 2004 process, NNSA performed a review between sites in the way activities were budgeted and accounted. Inconsistencies affecting Directed Stockpile Work (DSW) were of particular concern. This review resulted in a decision to move some activities between DSW subprograms and some between DSW and Readiness in Technical Base and Facilities. Specifically, at the Kansas City Plant, some funding was moved from Production Support to Stockpile Maintenance and Stockpile Evaluation to appropriately align the cost of engineers' time engaged in general process improvement, training, and leave with the weapon system they typically support. This was consistent with the costing practices at all other sites. At the Y-12 National Security Complex, funding was moved from Program Readiness to Production Support in the areas of capability of manufacturing processes, manufacturing systems support and maintenance, and product quality assurance-based processes. At Savannah River, some funding was moved from Production Support to Stockpile Maintenance for war reserve parts specific to weapon systems. At the Pantex Plant, funding was moved from Stockpile Maintenance, Stockpile Evaluation and

Dismantlement/Disposal to Production Support for radiation technician support, metrology support, and the Quality Inspection organization. At Sandia National Laboratories, funding was moved from Operations of Facilities into Production Support for process engineering, materials management, tooling, information systems, test engineers and technicians, and industrial engineering.

Comparabilities have been made to the FY 2002 and FY 2003 columns to reflects these changes as well. FY 2003 comparabilities are detailed in the footnotes to the Funding Profile.

Weapons Systems Cost Data

The Weapons Activities budget will be supplemented with a classified annex that will contain the Selected Acquisition Reports, a weapon systems funding table for FY 2002 - FY 2004, narrative supporting the enduring stockpile, and a section describing the implementation of the transition in FY 2004 to manage and budget by weapon system.

Providing budget and cost by weapon systems has been requested by Congress and, for the FY 2004 budget, the four life extension programs (B61, W76, W80, and W87) will be reported in Selected Acquisition Reports. The Selected Acquisition Reports will be developed in a format consistent with those submitted by the DoD, and will be certified by the Nuclear Weapons Council to be in the correct format. NNSA's commitment includes providing performance measures, schedules, and deliverables for warheads undergoing life extension.

The classified annex will include a multi-year funding table and a narrative description for the enduring stockpile systems. Managing and budgeting by weapons system will improve management focus and allow better traceability and visibility into weapon systems budget and cost.

NNSA established a team to review the management and budgeting by weapon systems. As a result of their effort, a major portion of the budget will be distributed as part of the life extension programs and enduring weapon systems based on the first user concept or other appropriate allocation. The development of and pathforward pilot for FY 2004 is underway and will be used to assist the NNSA in modifying management and accounting systems for full implementation in FY 2005, consistent with language in the House Report 107-681 accompanying H.R. 5431, Energy & Water Development Appropriations Act, FY 2003. This pilot will allow us to fully identify and address potential issues associated with managing, budgeting, and reporting by weapon system in time to prepare for the FY 2005 budget submission to Congress.

Funding Profile

(dollars in thousands)

Directed Stockpile Work	FY 2002 Comparable Appropriation	FY 2003 Request	FY 2004 Request	$ Change	% Change
Stockpile Research & Development	312,514[a]	425,669[a]	433,150	7,481	1.8%
Stockpile Maintenance	347,543[bc]	411,200[d]	405,746	-5,454	-1.3%
Stockpile Evaluation	170,444[e]	186,061[f]	202,885	16,824	9.0%
Dismantlement	23,752[g]	24,801[h]	37,722	12,921	52.1%

[a]Includes a comparability adjustment of $-44,500,000 for FY 2002 and $-41,480,000 for FY 2003 for the transfer of subcritical experiments which support the certification of the W88 pit from Directed Stockpile Work-Research and Development to the Pit Manufacturing and Certification Campaign in FY 2004.

[b]Does not reflect a reprogramming of $1,050,000 to project 98-D-125, Tritium Extraction Facility, which was requested in FY 2002, but not approved until December 2002.

[c]Includes a comparability adjustment of $8,533,000 associated with the realignment of DSW and RTBF activities to ensure consistencies among “production” sites.

[d]Includes a comparability adjustment of $10,043,000 associated with the realignment of DSW and RTBF activities to ensure consistencies among “production” sites.

[e]Includes a comparability adjustment of $-9,816,000 associated with the realignment of DSW and RTBF activities to ensure consistencies among “production” sites.

[f]Includes a comparability adjustment of $-11,123,000 associated with the realignment of DSW and RTBF activities to ensure consistencies among “production” sites.

[g]Includes a comparability adjustment of $410,000 associated with the realignment of DSW and RTBF activities to ensure consistencies among “production” sites.

[h]Includes a comparability adjustment of $423,000 associated with the realignment of DSW and RTBF activities to ensure consistencies among “production” sites.

(dollars in thousands)

Directed Stockpile Work	FY 2002 Comparable Appropriation	FY 2003 Request	FY 2004 Request	$ Change	% Change
Production Support	248,264[i]	246,324[j]	278,113	31,789	12.9%
Field Engineering, Training & Manuals	6,270	6,893	7,170	277	4.0%
Total, Directed Stockpile Work	1,108,787 [kl]	1,300,948	1,364,786	63,838	4.9%

The FY 2003 Request column includes comparability adjustments as detailed in the footnotes for consistency with the FY 2004 Request.

Public Law Authorization:
Public Law 107-314, Bob Stump National Defense Authorization Act for FY 2003

[i]Does not reflect a reprogramming of $450,000 to project 98-D-125, Tritium Extraction Facility, which was requested in FY 2002, but not approved until December 2002. Includes a comparability adjustment of $110,830,000 associated with the realignment of DSW and RTBF activities to ensure consistencies among "production" sites. .

[j]Includes a comparability adjustment of $108,618,000 associated with the realignment of DSW and RTBF activities to ensure consistencies among "production" sites.

[l]Reflects adjustment for rescission of funds in the Weapons Activities account required by the FY 2002 Supplemental Appropriations Act for further Recovery From and Response to Terrorist Attacks on the United States (P.L. 107-206).

Funding by Site

(dollars in thousands)

Directed Stockpile Work	FY 2002	FY 2003	FY 2004	$ Change	% Change
Kansas City Site Office					
Kansas City Plant	163,779	170,022	174,684	4,662	2.7%
Livermore Site Office					
Lawrence Livermore National Laboratory	81,710	100,164	101,925	1,761	1.8%
Los Alamos Site Office					
Los Alamos National Laboratory	177,220	222,695	208,157	-14,538	-6.5%
Nevada Site Office					
Nevada Site Office	3,544	17,480	17,171	-309	-1.8%
Oak Ridge Operations Office					
Oak Ridge National Laboratory	1,711	1,789	1,320	-469	-26.2%
Y-12 National Security Complex	191,506	197,334	218,989	21,655	11.0%
Total, Oak Ridge Operations Office	193,217	199,123	220,309	21,186	10.6%
Pantex Site Office					
Pantex Plant	112,159	118,981	127,731	8,750	7.4%
Sandia Site Office					
Sandia National Laboratories	338,279	423,116	446,279	23,163	5.5%
Savannah River Operations Office					
Savannah River Site	34,204	35,352	30,584	-4,768	-13.5%
Washington Headquarters	4,675	14,015	37,946	23,931	170.8%
Total, Directed Stockpile Work	**1,108,787**	**1,300,948**	**1,364,786**	**63,838**	**4.9%**

Site Description

Los Alamos National Laboratory

Conducts weapon system evaluation and certification activities in support of Annual Certification; conducts refurbishment activities for the W76 and B61 warheads; produces pits, detonators, and loads neutron tubes.

Sandia National Laboratories

Conducts weapon system evaluation and certification activities in support of Annual Certification; conducts refurbishment activities for the W80, W76, and B61 warheads; produces neutron generators.

Nevada Test Site

Conducts subcritical experiment activities in support of weapon system certification.

Lawrence Livermore National Laboratory

Conducts weapon system evaluation and certification activities in support of Annual Certification; conducts refurbishment activities for the W80 and W87 warheads.

Kansas City Plant

Produces and procures non-nuclear electrical, electronic, electro-mechanical, plastic and non-fissionable metal components.

Pantex Plant

Produces and procures high-explosive components, assembles life extended nuclear weapons and Joint Test Assemblies, and disassembles weapons returned for life extension, evaluation, and those retired from the stockpile.

Y-12 National Security Complex

Produces nuclear components and subassemblies, recovers and recycles uranium, lithium, and deuterium-bearing scrap.

Savannah River Site

Loads tritium reservoirs and supports surveillance activities.

Stockpile Research & Development

Mission Supporting Goals and Measures

The Directed Stockpile Work (DSW) Stockpile Research & Development (R&D) applies the core capability of a science-based stockpile stewardship. Its mission objectives include activities that are performed and conducted by the national laboratories and supported by the test site and production plants in the following areas: *R&D - Assessment and Certification* maintains system certification, and assesses the safety and reliability of the nuclear weapon stockpile as a basis for the Annual Certification and Report to the President, and subsequently, to the Congress; *R&D - Maintenance* supports directive schedules; *R&D - Surveillance* responds to emerging problems or issues in a timely manner, including Significant Finding Investigations; *R&D - Baselining* integrates and documents activities that contribute to updated weapon system understanding; *R&D - Refurbishment* applies modern physics and engineering to support refurbishments approved by the Nuclear Weapons Council; and *Supporting R&D* maintains flexibility to respond to new requirements, and maintains the development capability to refurbish and design new weapons, as required.

Subprogram Goal

Oversee development, assessment, certification and refurbishment activities; and provide technical expertise support to maintenance, surveillance, and production activities required to ensure the readiness of the weapons in the stockpile to respond to National Security requirements.

Performance Indicators

Approved Annual Nuclear Weapons Stockpile Certification and Report to the President and to the Congress.
Approved Annual Nuclear Weapons Stockpile Surety Assessment and Report to the President.
Number of Significant Findings Investigation (SFI) closeouts through assessment processes. (Estimates are based on the October 2002 Monthly SFI report. The estimates will be updated during the next cycle).
Percentage completed of Safety Studies to support work at the Production Sites.
Percent completed in development studies/experiments/tests/work to support upgrades, Alterations (Alts), and Modifications (Mods) to the stockpile.
Percent progress in completing for Advanced Concepts Initiatives and Life Extension Program (LEP) Concept Study (Phase 6.1 or Phase 1).
Percent progress in completing for Advanced Concepts Initiatives and Life Extension Program (LEP) Feasibility Study, Option Downselect, Design Definition, and Cost Studies (Phase 6.2/6.2A); [the LEP efforts support refurbishment First Production Units (FPUs) for the B61-7/11 of FY 2006, W80 of FY 2006 and W76 of FY 2007].
Percent progress in completing Life Extension Program (LEP) tests/evaluations/experiments/work for Development Engineering (Phase 6.3).
Percent of completing Life Extension Program (LEP) tests/evaluations/experiments/work for Production Engineering, Refurbishment First Production Unit, and Full-Scale Production (Phases 6.4, 6.5, and 6.6).

Annual Performance Results and Targets

FY 2002 Results	FY 2003 Targets	FY 2004 Targets
Completed the Annual (FY 2001) Stockpile Certification and Report to the President and, subsequently, to the Congress. Conducted "racklet" experiments Vito and Mario. Commenced activities associated with Rocco experiment. Conducted W76, W80, and B61 baseline hydrodynamic tests. Supported safety studies, including Nuclear Explosive Safety Studies (NESSs), Operational Safety Reviews (OSRs), and Hazard Analysis Reports. Completed: NESSs for W62 and B83; OSRs for F-15E and F-16C/D; completed Over-the-Road Transportation study. Closed 30 Significant Finding Investigations (SFIs). Supported development of small neutron generator. Completed qualification of MC4380A neutron generator for the W76. Commenced B61 Spin Rocket Motor Phase 6.2/2A. Conducted oversight of disassembly and inspection of	Complete the Annual (FY 2002) Stockpile Certification and Report to the President and, subsequently, to the Congress. Conduct subcritical experiments in support of weapon system certification. Conduct W78 hydrodynamic tests. Conduct B61, W76, and W80 baseline hydrodynamic tests. Support directive scheduled safety studies, including NESSs, OSRs, and Hazard Analysis Reports. Close scheduled Significant Finding Investigations (SFIs). Continue development of a small neutron generator with a FPU in FY 2005 to support the W80 refurbishment. Complete support activities for B61 Alteration (Alt) 335/339. Support the fielding of an upgrade to the B83 gas transfer system. Complete B61 Spin Rocket Motor Phase 6.2/6.2A. Support production of additional	Perform assessments and provide input to complete by March 2004 the Annual (FY 2003) Stockpile Certification and Report to the President and, subsequently, to Congress. Complete by June 2004 the Annual (FY 2003) Stockpile Surety Assessment and Report to the President. Close approximately 8 of the existing Significant Finding Investigations (SFIs) and Unsatisfactory Reports (URs). Complete 100% of the Nuclear Explosive Safety Studies (NESSs), Operational Safety Reviews (OSRs), and Hazard Analysis Reports (HARs) in accordance with the Integrated Weapons Activities Plan (IWAP). Complete 100% of Production and Planning Directive (P&PD) and warhead/bomb Program Control Document (PCD) requirements to support upgrades, Alterations (Alts), and Modifications (Mods). Complete an additional 30% for a total of 55% of the scheduled work for Phase 6.2/6.2A of the Robust Nuclear Earth Penetrator (RNEP), subject to Secretary of Defense Report.

weapon systems.

Support development of enhanced high-fidelity instrumented joint test assemblies.

Commenced limited scope baselining of the B61 family, focused on B61-7/11.

For W76, conducted material studies in support of component reuse/remake decisions. Developed draft material specifications. Conducted dynamic response test JT4A-2B. Developed draft component specifications.

For W76, delivered hardware for flight test DASO-18.

For W76, conducted conceptual design reviews for some components (stronglinks, launch accelerometer, terminal protection device, cables and connectors).

Completed Phase 6.2/6.2A (Feasibility Study and Option Downselect) for B61-7/11 refurbishment. Conducted peer review. Released the Test and Evaluation Plan and the NNSA Program Plan.

Conducted first Baseline Design Review for W80 LEP.

For W80, conducted activities in support of Captive Carry test scheduled for FY03.

B83 Alt 355 Retrofit Evaluation System Test units.

Complete the B61 family Baselining final report.

For W76, continue Phase 6.3 (Development Engineering) and commence Phase 6.4 (Production Engineering) activities required to support the Nuclear Weapons Council (NWC)-approved schedule for an FPU in FY 2007.

For W76, conduct tests at the Sandia Pulse Reactor for the arming, fuzing and firing assembly.

For W76, support development activities for the demonstration and shakedown operations (DASO)-18 flight test.

For W76, support development activities for the FY 2004 follow-on commander-in-chief evaluation test (FCET)-30 flight test.

For B61-7/11, continue Phase 6.3 Development Engineering and commence Phase 6.4 (Production Engineering) activities to focus on the canned subassembly aging concerns with a FPU of FY 2006 and perform, in parallel, a non-destructive evaluation program on the canned subassemblies as a risk mitigation for the B61-11.

Complete the initial 50% of scheduled work activities for B61 Spin Rocket Motor Phase 6.3 activities.

Complete an additional 30% for a total of 60% of the scheduled activities for Phase 6.3 for the refurbished B61-7/11 FPU of FY2006. (Includes complete draft addendum to Final Weapon Development Report; develop Quality Evaluation plans; and execute early small scale test and evaluation).

Complete the initial 45% of scheduled activities for Phase 6.3 for the refurbished W76 FPU of FY2007. (Includes conduct Baseline Design Review; conduct Preliminary Design Review and Acceptance Group Review; deliver flight test bodies for Commander-in-Chief Evaluation Test (FCET) # 32 for the W76; and support the Commercial-off-the-Shelf qualification process).

Complete an additional 35% for a total of 50% of the scheduled activities for Phase 6.3 for the refurbished W80 FPU of FY2006. (Includes complete two hydrodynamic tests; conduct two captive carry flight tests; conduct scheduled work on resolution of Phase 6.3 Peer Review findings (as required); continue 40% development activities for the Small Neutron Generator FPU in FY2006; and support the

Selected gas transfer system for next W88 cycle.

Delayed start of Phase 6.2/2A (Feasibility Study, Option Downselect), Design Definition and Cost Study for Robust Nuclear Earth Penetrator (RNEP, subject to Secretary of Defense Report) continued assessment and improvement of models and development of diagnostics.

For B61-7/11, complete draft addendum to Final Weapon Development Report.

For W80, commence Phase 6.4 (Production Engineering) activities required to support the NWC-approved schedule for a refurbished FPU in FY 2006.

For W80, complete one hydrodynamic test to support refurbishment activities.

For W80, complete the preliminary Design Review and Acceptance Group (DRAAG) review.

For W80, perform Phase 6.3 (Development Engineering) peer review.

Conduct W80-3 Captive Carry tests.

Support research and development of commercial-off-the-shelf qualification process for the W80 and W76.

Continue development of the enhanced fidelity and W88 joint test assemblies (JTAs).

Support W87 high-fidelity JTA pit production.

Support Phase 6.2/6.2A Feasibility Study, Option Downselect, Design Definition and Cost Study on the RNEP Commercial-off- the-Shelf qualification process).

Complete initial 30% of the scheduled work activities for Phase 6.4 for the refurbished B61-7/11 FPU of FY2006.

Complete the initial 10% of the scheduled activities for Phases 6.4 for the refurbishment of the W76 FPU of FY2007.

Complete the initial 45% of the scheduled activities for Phase 6.4 for the refurbished W80 FPU of FY2006.

(subject to Secretary of Defense
Report required by Section 3146
of H.R. 4546).

NNSA is working with the Air Force to balance the programmatic surety issues with the availability of Flight Test Assets. The first production unit schedule may be earlier for the Advanced Cruise Missile than the Air Launched Cruise Missile's initial operating capability in FY 2008.

Funding Schedule

(dollars in thousands)

	FY 2002	FY 2003	FY 2004	$ Change	% Change
R&D - Assessment & Certification	56,994[a]	93,632[a]	88,644	-4,988	-5.3%
R&D - Maintenance	35,427	51,134	50,323	-811	-1.6%
R&D - Surveillance	19,123	20,487	16,242	-4,245	-20.7%
R&D - Baselining	3,187	6,877	4,856	-2,021	-29.4%
R&D - Refurbishment	149,666	189,246	208,167	18,921	10.0%
Supporting Research & Development	48,117	64,293	64,918	625	1.0%
Total, Research and Development	312,514	425,669	433,150	7,481	1.8%

The FY 2003 Request column includes comparability adjustments as detailed in the footnotes for consistency with the FY 2004 Request.

Detailed Program Justification

(dollars in thousands)

	FY 2002	FY 2003	FY 2004
R&D - Assessment & Certification	**56,994**	**93,632**	**88,644**

[a]Reflects comparability adjustment of $-44,500,000 for FY 2002 and $-41,480,000 for FY 2003 for the transfer of subcritical experiments which support the certification of the W88 pit from Directed Stockpile Work - Research and Development to the Pit Manufacturing and Certification Campaign in FY 2004.

This category includes engineering and physics analysis required to certify that weapons conform to the requirements of their Military Characteristics and Stockpile-to-Target Sequence, a document containing life-cycle environments for the weapon. Activities in this category include: completion of the annual certification efforts including conduct of subcritical experiments associated with the certification of specific weapon systems, weapon systems tests such as hydrotests and hi-fidelity joint test assemblies (JTAs), and safety/surety assessments. In addition to these activities, the FY 2004 budget supports hydrodynamic testing for weapon systems; supports Nuclear Explosive Safety Studies, Operational Safety Reviews for various weapons, and Hazard Analysis Reports; development of 3-D thermal-mechanical weapons response models, revalidates legacy margin methods, develops improved models, conducts surety assessments, and continues activities associated with qualification of margins and uncertainties. In FY 2004, funding responsibility for subcritical experiments which support the certification of the W88 pit was transferred from this DSW - R&D category to the Pit Manufacturing and Certification Campaign.

R&D - Maintenance **35,427** **51,134** **50,323**

This category provides for a design interface with the DOE weapons production plants. Activities in this category include: production liaison interactions between the weapons laboratories and the production plants, military liaison with the Department of Defense, and Integrated Safety Process (ISP) systematic review and revalidation of weapon assembly and disassembly operations. In addition to continuing a series of weapon alterations, the FY 2004 budget supports Code Management System initial operational capability for STRATCOM, Air Force, and Navy depots, continued development of a small neutron generator to support the W80 refurbishment and the W87, and continues model based engineering development in support of Life Extension Programs.

R&D - Surveillance **19,123** **20,487** **16,242**

This category supports assessments of the nuclear package and non nuclear components of each weapon system to uncover design and manufacturing defects in all phases of production, provides early detection of safety and reliability problems caused by aging and Stockpile-to-Target Sequence environments, and demonstrates compatibility between DoD and DOE interfaces. Activities in this category include surveillance oversight for enduring stockpile weapon systems: pits; canned subassemblies (CSAs); high explosives; polymers; detonators; reservoirs; valves; safety surveillance monitoring of pits and CSAs being stored while awaiting dismantlement; and evaluation of data for closure of open Significant Finding Investigations. While design of replacement JTAs is continued, support for development of enhanced high-fidelity instrumented test assemblies has been reduced. FY 2004 activities include FPU for the W78 JTA redesign, development of a B61 JTA battery pack, FPU of a B61 JTA parachute accelerometer.

R&D - Baselining **3,187** **6,877** **4,856**

Baselining is the prerequisite of many Stockpile Stewardship Program (SSP) activities including assessments, certifications, and significant finding investigations. The elements of baselining include: data gathering, model development, model validation, analysis, documentation, and review. Starting in FY 2003 and continuing in FY 2004, the DSW R&D Baselining program is reduced in scope to capitalize on existing baselining SSP activities by leveraging current activities. These activities will be annually coordinated and documented. In addition, annual DSW R&D Baselining activities may include supplemental sponsored activities to address deficiencies in weapon understandings. These supplemental activities will compliment the basic understanding of weapons. In FY 2004, the program will perform baseline peer reviews and B61 physics-based studies.

R&D - Refurbishment	**149,666**	**189,246**	**208,167**

This category provides long-term support of the stockpile with corrective maintenance and weapon component replacement and refurbishment as defined by refurbishment planning. Activities in this category include performing engineering design studies to fully understand the requirements needed to extend the life of a system; developing a suite of refurbishment options, qualification and certification activities to ensure refurbished systems meet all required military characteristics; and supporting the directive schedule, including modifications (Mods) and alternations (Alts). The FY 2004 efforts will support laboratory activities associated with Phase 6.3 Development Engineering and Phase 6.4 Production Engineering for the W80 (FPU of a refurbished weapon in FY 2006) and the W76 (FPU of a refurbished weapon in FY 2007), Phase 6.4 Production Engineering for the B61-7/11 (FPU of a refurbished canned subassembly in FY 2006), and the completion of the non-destructive evaluation program to support the B61-11. FY 2004 funding will also support the W76 Follow-on Commander-in-Chief Evaluation Test (FCET)-30 flight test and preparations for FCET-32, two W76 hydrodynamic tests, baseline design and preliminary Design Review and Acceptance Group reviews.

Supporting Research & Development	**48,117**	**64,293**	**64,918**

This category conducts research and development (R&D) applicable to specific weapon systems as well as general R&D not yet directly tied to a particular weapon system. Weapon-specific R&D supports technologies needed to support a specific weapon refurbishment, maintenance, surveillance, and/or certification program. Activities include joint test assembly (JTA) redevelopment; ACORN, gas transfer system development, and neutron generator development. The FY 2004 efforts will support continued development of W78 and W88 gas transfer systems, and W87 high-fidelity JTA. Additionally, this category includes support for the Advanced Concepts Initiative to perform a small level of preconceptual and Concept Definition studies, and Feasibility and Cost studies. Feasibility and Cost Studies will include the NWC-approved Robust Nuclear Earth Penetrator (RNEP) study (subject to Secretary of Defense Report required by Section 3146 of P.L. 107-314, Bob Stump National Defense Authorization Act for FY 2003). The candidate for the other Feasibility and Cost Study, subject to approval after request by the Navy in early FY 2003, would be an associated W76 study. Topics for the preconceptual and conceptual studies for FY 2004 have not yet been finalized. The amount for the Advanced Concepts Initiative activities (preconceptual through costs studies required by Section 3146) for FY 2004 is $15 million for RNEP (subject to Secretary of Defense Report required by Section 3146), plus $6 million for additional and exploratory studies.

Total, Stockpile Research & Development	**312,514**	**425,669**	**433,150**

Explanation of Funding Changes

	FY 2004 vs. FY 2003 ($000)
Stockpile Research & Development	
• **Assessment & Certification** - Decrease reflects reprioritization of activities to support increased refurbishment activities. This results in slower application of experiments and analysis to some stockpile applications	-4,988
• **Maintenance** - Decrease reflects reprioritization of activities to support increased refurbishment activities	-811
• **Surveillance** - Decrease reflects reprioritization of activities to support increased refurbishment activities. This will cause a delay in some surveillance tests which should not significantly affect the stockpile	-4,245
• **Baselining** - Decrease reflects reduced scope to capitalize on other baselining Stockpile Stewardship Program activities	-2,021
• **Refurbishment** - Increase in this category is required to support planned refurbishment activities of the B61, W76, and W80	18,921
• **Supporting Research & Development** - Maintains FY 2003 level of effort	625
Total Funding Change, Stockpile Research & Development	**7,481**

Capital Operating Expenses and Construction Summary

Capital Operating Expenses [a]

(dollars in thousands)

	FY 2002	FY 2003	FY 2004	$ Change	% Change
General Plant Projects	2,149	2,213	2,280	66	3.00%
Capital Equipment	11,337	11,677	12,027	350	3.00%
Total, Capital Operating Expenses	13,486	13,891	14,307	417	3.00%

[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 2003 and FY 2004 funding shown reflects estimates based on actual FY2002 obligations.

Stockpile Maintenance

Mission Supporting Goals and Measures

The Directed Stockpile Work (DSW) Stockpile Maintenance mission includes providing for the short- term and strategic maintenance needs of the nuclear weapons stockpile. The short-term needs include providing for the day-to-day maintenance activities of limited life components exchange (LLCE), production and delivery of limited life components and other components, and delivery of kits to the military. Strategic efforts include planning and pre-production activities for Life Extension Programs (LEPs) and refurbishment (LEPs, alterations, and modifications) of actual weapons. Generally, LLCEs and other non-LEP maintenance is conducted cyclically; specific LEP direct weapons work is being completed on the W87 while LEP planning is being conducted for the B61-7/11, W76, and W80 systems.

Stockpile maintenance, refurbishment, and life extension efforts for the stockpile are currently delineated in several key Nuclear Weapons Complex directives, including the current Nuclear Weapons Production and Planning Directive (P&PD), Nuclear Weapons Schedule (NWS), Integrated Weapons Activity Plan (IWAP), specific weapon Program Control Documents (PCDs), Component Description Documents, and program planning documents. Under approved programs, refurbishment activities in FY 2004 will focus on accomplishing alterations (Alts) and modifications (Mods), refurbishment/replacement of warhead components to extend the life of the weapons in the stockpile, and replacement of limited life components. Priority is on activities to support the First Production Units (FPUs) of the LEPs.

Critical to the Stockpile Maintenance Program is the ability of the Nuclear Weapons Complex to meet delivery schedules. By continuously monitoring the elements of Stockpile Maintenance, there is a high assurance of delivery schedules being met.

A major program objective is to assure that sufficient capacity is available in the production complex to meet production requirements for refurbishment efforts and limited life components needed to maintain the stockpile. Attaining the necessary through-put capacity to produce new neutron generators and to expand the production through-put capacity for new gas transfer systems to meet life extension needs are two areas of great importance.

In response to these concerns, a line item construction project, 99-D-122, Rapid Reactivation, was completed in FY 2002 at Sandia National Laboratories (SNL) to add capacity for neutron generator production, and SNL is in the process of ramping up to full production capacity in FY 2004. This added capacity should support all future requirements for neutron generators. Construction project, 03-D-121, Gas Transfer Capacity Expansion, is being completed at the Kansas City Plant (KCP) to support the LEPs that require new Acorns in FY06 and FY07.

Subprogram Goal

Extended service lifetimes and reliability of the warheads and bombs in the nuclear weapons stockpile.

Performance Indicators

Number of limited life component (LLC) kits delivered on/ahead of schedule
Percent of warhead/bomb alterations (Alts) completed on/ahead of schedule
Percent of Life Extension Program (LEP) activities completed on/ahead of schedule

Percent of authorization bases (analyses/tooling/approvals necessary to do nuclear warhead operations at Pantex) completed on/ahead of schedule

Annual Performance Results and Targets:

FY 2002 Results	FY 2003 Targets	FY 2004 Targets
For the B61-3,4,10: completed Alteration (Alt) 354 (fin cant) production deliveries for Outside CONUS; continued Phase 6.2/6.2A Study for Alteration 356 (spin rocket motor); made material reuse/remake decision in support of Alt 357 (Canned Subassembly); and completed Alt 357 Phase 6.2/2A Study. For the W62: submitted Step 2 Hazard Analysis Report. For the W76: delivered the first Major Component 4380A neutron generators to inventory. For the W76-1: began Phase 6.4 (Production Engineering). For the W78: began Step 2, Seamless Safety for the 21st century (SS-21) Process. For the B83-0/1: began SS-21 Process; requested authorization for Alt 355 Phase 6.4; achieved Alt 355 (Gas Transfer System) Phase 6.5 First Production Unit; and received Nuclear Weapons Council approval for Alt 355 (Gas Transfer System) Phase 6.6 and began full-scale production. For the W87: achieved First Production Unit on MC3617	Complete all directive scheduled activities in support of the refurbishment of the B61-7/11 First Production Unit (FPU) in FY 2006, W76-1 FPU in FY 2007, W80-2/3 FPU in FY 2006. For the B61-3,4,10: - complete scheduled CONUS Alts 335, 339, & 354 (fin cant) activities -complete Alt 356 (spin rocket motor) Phase 6.2/6.2A -begin SS-21 Process -dispose of two anomalous PAL units. For the W62: complete Step 2, SS-21 Process. For the W78: -approve accelerated tooling for disassemble & inspection and repairs -implement use of T558A Positive Measures Tester. For the B83: -complete scheduled Alts 750 (common radar); 750/752 (radar/cable) for revised radar heights of burst. For the W84: disassemble Error Code Units. For the W87: -continue scheduled retrofits	Provide 100% of the Department of Defense (DoD) Limited Life Component (LLC) requirements, estimated at: -388 New Build Neutron Generators -1861 New Build Reservoirs -1734 Filled Reservoirs -131 Gas Generators. Complete 100% of the W87 Alteration (Alt) Alt 342 deliveries. Complete 100% of the W78 Alt 351 deliveries. Complete 80% of the W87 Alt 345 deliveries. Complete Production and Planning Directive (P&PD) and warhead/bomb Production Control Document (PCD) requirements; approximate % complete of Phase 6.X is : -B61-7/11 Phase 6.3 - 45% -B61-7/11Phase 6.4 - 30% -W76 Phase 6.3 - 45% -W76 Phase 6.4 - 10% -W80 Phase 6.3 - 60% -W80 Phase 6.4 - 45%. Complete 100% of the Integrated Weapons Activity Plan (IWAP) scheduled work for the: --W88 Step 2 --W78 Step 2 --W87 Seamless Safety for the 21st century (SS-21)

Interconnect Unit. For the W88: completed Step 1, SS-21 Process.	to improve the structural integrity and extend the life of the W87 (Alt 342) Begin delivery of the alternate storage container -begin SS-21 Process. For the W88: continue studies and production engineering for 3T Terrazzo redesign. For Limited Life Component Exchange: -deliver FY 2003 requirements for neutron generators (NG) and gas transfer systems (GTS): -W76 (Acorn GTS) -B83 (Alt 355 GTS) -W76 (MC4380A NG) -W62 (SP800A/MC2597A GTS) -W78 (Alt 351 GTS)	--B83 SS-21. Complete 65% of the IWAP scheduled work for the B61 SS-21. Start & Complete 25% of the IWAP scheduled work for the: -W80-0/1 D&I SS-21 -W80-2/3 D&I SS-21.

Funding Schedule

(dollars in thousands)

	FY 2002	FY 2003	FY 2004	$ Change	% Change
Limited Life Component Exchange	111,199	131,134	123,238	-7,896	-6.0%
Life Extension Operations, Repairs, and Maintenance	236,344	280,066	282,508	2,442	0.9%
Total, Stockpile Maintenance	347,543[ab]	411,200[c]	405,746	-5,454	-1.3%

The FY 2003 Request column includes comparability adjustments as detailed in the footnotes for consistency with the FY 2004 Request.

Detailed Program Justification

(dollars in thousands)

	FY 2002	FY 2003	FY 2004
Limited Life Component Exchange	**111,199**	**131,134**	**123,238**

This program includes costs for activities necessary to procure, fabricate, and assemble materials and parts into weapons components that will be used to replace like components in the active and inactive stockpiles, as necessary.

The limited life components (LLCs) in the stockpile include neutron generators, filled tritium reservoirs, gas generators, and age limited power sources. Funding supports the design, development, production and fielding of replacement LLC components. The P&PD and the Master Nuclear Schedule for limited life component exchange is consistent with START I stockpile levels. Reservoir engineering and production is required for the B61, W62, W76, W78 (Alt 351), W80, W87 (Alt 345), and W88. Supports the continued replacement of the W76 MC4380A neutron generator. The decrease in FY 2004 results from planned cyclical changes in limited life component support to the stockpile.

[a]Includes a comparability adjustment of $8,533,000 associated with the realignment of DSW and RTBF activities to ensure consistencies among "production" sites.

[b]Does not reflect a reprogramming of $1,050,000 to project 98-D-125, Tritium Extraction Facility, which was requested in FY 2002, but not approved until December 2002.

[c]Includes a comparability adjustment of $10,043,000 associated with the realignment of DSW and RTBF activities to ensure consistencies among "production" sites.

Life Extension Operations, Repairs, and Maintenance	**236,344**	**280,066**	**282,508**

This program includes costs to procure, fabricate, and assemble material, piece parts, and components that will be used to repair weapons and/or components awaiting repairs at contractor locations.

Supports Stockpile Modernization/Maintenance activities in accordance with the Program Control Documents schedule including approved alterations and stockpile life extension through the B61-7/11 Alt 357 refurbishment program, W87 Alt 342 refurbishment program (is completed in FY 2004), W76-1 refurbishment program, and the W80-3 refurbishment program. Supports the SS-21 process for the B61-3, 4,10; B61-7/11, W78, B83-0/1, W84, W87, and W88.

Total, Stockpile Maintenance	**347,543**	**411,200**	**405,746**

Explanation of Funding Changes

	FY 2004 vs. FY 2003 ($000)
Limited Life Component Exchange	
• The decrease reflects planned cyclical changes for limited life component support to the stockpile	-7,896
Life Extension Operations, Repairs, and Maintenance	
• The increase supports additional funding requirements for the B61-7/11, W76, and W80 refurbishments	2,442
Total Funding Change, Stockpile Maintenance	**-5,454**

Capital Operating Expenses and Construction Summary

Capital Operating Expenses [a]

(dollars in thousands)

	FY 2002	FY 2003	FY 2004	$ Change	% Change
General Plant Projects	3,649	3,758	3,871	113	3.00%
Capital Equipment	4,610	4,748	4,891	142	3.00%
Total, Capital Operating Expenses	8,259	8,507	8,762	255	3.00%

[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 2003 and FY 2004 funding shown reflects estimates based on actual FY 2002 obligations.

Stockpile Evaluation

Mission Supporting Goals and Measures

The Directed Stockpile Work (DSW) Stockpile Evaluation mission is to assess the safety and reliability of the bombs and warheads in the nuclear weapons stockpile. Mission objectives include supporting Department of Defense (DoD) stockpile flight tests with test weapons; conducting new material laboratory tests, new material flight tests, stockpile laboratory tests, quality evaluations, special testing, and surveillance of weapon systems to support the assessment, all of which contribute to the Annual Certification of the Stockpile to the President. Major focuses of the program include: identifying defects that exist in the stockpile, ensuring that they do not go undetected, uncovering precursors of aging early enough to allow corrective action, documenting the state of the stockpile, contributing to the technical basis for stockpile life extensions, and providing information that will aid in furthering design and manufacturing processes.

Subprogram Goal

Timely and accurate assessments and reports on the reliability of the stockpile.

Performance Indicators

Percentage support to the Department of Defense Flight Schedule for DOE weapons tests
Percentage of Laboratory Tests conducted
Major component test unit backlog reduction
Number of weapon reliability reports published

Annual Performance Results and Targets

FY 2002 Results	FY 2003 Targets	FY 2004 Targets
Completed Disassemblies and Inspections for 10 weapon types per approved Quality Assurance Program Plan.	Completed Disassemblies and Inspections for 10 weapon types per approved Quality Assurance Program Plan.	Deliver test weapons on time for 90% of DoD Flight Tests, as scheduled.
Eliminated 02/28/02-defined W78 and B83 Disassemblies and Inspections backlog.	Field scheduled Non-Destructive Evaluation capabilities.	Complete 90% of the scheduled major component Laboratory Tests.
Built and delivered Joint Test Assemblies per Production Control Document requirements.	Eliminate 02/28/02-defined Weapon Disassemblies and Inspections backlog.	Reduce by 80% the prior year's major component testing backlog.
Conducted tests of 11 pits.	Build and deliver Joint Test Assemblies per Production	Publish two weapon reliability reports, as scheduled.

Fielded scheduled Non-Destructive Evaluation capabilities.	Control Document requirements. Conduct tests of 16 pits.
Qualified Lawrence Livermore National Laboratory capability to evaluate pits.	Reduce test backlogs of major weapon components.
Implemented DOE Inspector General recommendations for improving efficiency of Significant Finding Investigation resolution.	Institute prioritization for Significant Finding Investigations support.
Published Weapon Reliability Reports.	

Funding Schedule

(dollars in thousands)

	FY 2002	FY 2003	FY 2004	$ Change	% Change
Stockpile Laboratory Tests	56,284	53,070	57,639	4,569	8.6%
Stockpile Flight Test	64,996	64,885	77,548	12,663	19.5%
Surveillance	42,471	60,917	61,364	447	0.7%
Integrated Safety Management	6,693	7,189	6,334	-855	-11.9%
Total, Stockpile Evaluation	170,444[a]	186,061[b]	202,885	16,824	9.0%

The FY 2003 Request column includes comparability adjustments as detailed in the footnotes for consistency with the FY 2004 Request.

[a]Includes a comparability adjustment of $-9,816,000 associated with the realignment of DSW and RTBF activities to ensure consistencies among "production" sites.

[b]Includes a comparability adjustment of $-11,123,000 associated with the realignment of DSW and RTBF activities to ensure consistencies among "production" sites.

Detailed Program Justification

(dollars in thousands)

	FY 2002	FY 2003	FY 2004
Stockpile Laboratory Tests (SLT)	**56,284**	**53,070**	**57,639**

Conducts new material laboratory tests/stockpile laboratory tests to establish confidence in the performance, reliability, and safety of the nuclear weapons inventory. Supports completing the New Material Laboratory Test/SLT disassembly and inspection (D&I), disassembly of 15 pits, elimination of type 3E1 detonator backlog, completion of additional Canned Sub-Assembly D&Is to eliminate backlogs, and performing valve/gas transfer system surveillance.

Stockpile Flight Tests (SFT)	**64,996**	**64,885**	**77,548**

Conducts new material flight tests/stockpile flight tests to establish confidence in the performance, reliability, and safety of the nuclear weapon inventory throughout its intended operational environment. Supports building and delivering the Joint Test Assemblies (JTAs) per the Program Control Documents. Increased funding is required in FY 2004 for the production of additional high fidelity flight test hardware for the W87.

Surveillance	**42,471**	**60,917**	**61,364**

Conducts surveillance testing to include weapon returns, disassemblies, and inspections; special testing and surveillance of weapon systems to ensure quality evaluation and certification of the reliability of War Reserve weapons and components. Supports generation of new component surveillance on detonators, gas transfer systems, and high explosives, and publication of weapon reliability reports. Includes the rebuild and return of weapons to the DoD for all non-retired weapons.

Integrated Safety Management (ISM)	**6,693**	**7,189**	**6,334**

Conducts activities necessary to develop safe processes, tooling, equipment, and procedures, as well as conducting hazard analysis and training and qualifying technicians to perform the disassembly and inspection and rebuild work. These activities formulate the safety basis authorization and certify tooling and processes needed to perform operations with nuclear explosives that are necessary for weapon surveillance and refurbishment activities within the nuclear weapons complex. Supports integrated weapons activity planning to perform D&Is.

Total, Stockpile Evaluation	**170,444**	**186,061**	**202,885**

Explanation of Funding Changes

	FY 2004 vs. FY 2003 ($000)
• **Stockpile Laboratory Tests (SLT)** - The increase is required to eliminate the canned sub-assembly backlogs at Y-12 National Security Complex	4,569
• **Stockpile Flight Tests (SFT) -** The increase reflects support for the production of additional high fidelity flight test hardware for the W87 at Y-12 National Security Complex	12,663
• **Surveillance** - The increase continues the FY 2003 level of effort as program priorities shift to flight test hardware for the W87	447
• **Integrated Safety Management** - The decrease reflects the completion of a portion of the work related to safety management activities for the B83 and the W87.	-855
Total Funding Change, Stockpile Evaluation	**16,824**

Capital Operating Expenses and Construction Summary

Capital Operating Expenses [a]

(dollars in thousands)

	FY 2002	FY 2003	FY 2004	$ Change	% Change
General Plant Projects	311	320	330	10	3.00%
Capital Equipment	2,365	2,436	2,509	73	3.00%
Total, Capital Operating Expenses	2,676	2,756	2,839	83	3.00%

[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 2003 and FY 2004 funding shown reflects estimates based on actual FY 2002 obligations.

Dismantlement and Disposal

Mission Supporting Goals and Measures

The Directed Stockpile Work (DSW) Dismantlement/Disposal mission includes the safe and efficient dismantlement and disposal of warheads and bombs no longer required in the Nuclear Weapons Stockpile. Its mission objectives address activities that include: safety analysis associated with weapon retirement; disassembly; component characterization; disposal; and reclamation of materials components. The Dismantlement/Disposal Subprogram is also responsible for conducting the engineering, development, testing, certification, procurement, and refurbishment of containers required for interim storage; and the staging and storage of weapons, components, and materials awaiting dismantlement.

Subprogram Goal

Safe and secure dismantlement, disassembly, and storage or disposal of nuclear warheads and bombs.

Performance Indicators

Percentage of weapons dismantled on/ahead of schedule
Percentage of components disposed of on/ahead of schedule
Percentage of Authorization Bases completed on/ahead of schedule.

Annual Performance Results and Targets

FY 2002 Results	FY 2003 Targets	FY 2004 Targets
Overall, dismantled 101% of weapons scheduled for dismantlement: -W56: 100% -W79: 95% -Quality Assurance and Miscellaneous: 132%. Purged and backfilled W56 units.	Dismantle weapons in accordance with the Production & Planning Directive (P&PD), including W56 disassembly activities and completion of the W79 disassembly activities. Conduct scheduled characterization, demilitarization, sanitization, and disposal of weapon components in accordance with directive documents (such as Production Control Documents, Shipment Schedules, & Y-12 Dismantlement Baseline Plan). Support the Nuclear Explosive	Complete 100% of scheduled weapons dismantlements. Complete disposal of components scheduled for disposal. Complete 100% of Authorization Bases, as scheduled.

Safety Process (NESS) through the conduct of Hazards/Risk Analyses and Weapons Response Analyses.

Hire and train Pantex Production Technicians and Operations Managers at an approved rate to support increased workload in FY 2003 and beyond.

Reach agreement on the transportation or storage of the B53.

Purge and backfill W56 units, as necessary.

Funding Schedule

(dollars in thousands)

	FY 2002	FY 2003	FY 2004	$ Change	% Change
Disassembly	23,752	24,801	37,722	12,921	52.1%
Total, Dismantlement & Disposal	23,752[a]	24,801[b]	37,722	12,921	52.1%

The FY 2003 Request column includes comparability adjustments as detailed in the footnotes for consistency with the FY 2004 Request.

[a]Includes a comparability adjustment of $410,000 associated with the realignment of DSW and RTBF activities to ensure consistencies among "production" sites.

[b]Includes a comparability adjustment of $423,000 associated with the realignment of DSW and RTBF activities to ensure consistencies among "production" sites.

Detailed Program Justification

(dollars in thousands)

	FY 2002	FY 2003	FY 2004
Dismantlement & Disposal	**23,752**	**24,801**	**37,722**

Includes all activities, including safety analysis associated with developing safe processes for weapon disassembly, component characterization, and disposal and reclamation of materials and components; the engineering, development, testing, certification, procurement, and refurbishment of containers required for interim storage; and the staging and storage of weapons, components, and materials awaiting dismantlement. Supports the continuation of the W56 disassembly, start-up of the B61-3 and 4 disassembly line, preparations for the B53 disassembly, disassembly and disposition of weapons that are retired and not rebuilt after surveillance and disposition of major components from previously dismantled weapons such as the W70. Continues support for the execution of the Integrated Weapons Activity Plan, container certification, and characterization of components for disposition.

Total, Dismantlement & Disposal	**23,752**	**24,801**	**37,722**

Explanation of Funding Changes

	FY 2004 vs. FY 2003 ($000)
Dismantlement & Disposal	
# Reflects increased dismantlement activities for the W56 and W70, and additional support for the Integrated Weapons Activity Plan (IWAP), offset by the completion of the W79 dismantlement in FY 2003	12,921
Total Funding Change, Dismantlement & Disposal	**12,921**

Capital Operating Expenses and Construction Summary

Capital Operating Expenses [a]

(dollars in thousands)

	FY 2002	FY 2003	FY 2004	$ Change	% Change
General Plant Projects	0	0	0	0	N/A
Capital Equipment	0	0	0	0	N/A
Total, Capital Operating Expenses	0	0	0	0	N/A

[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 2003 and FY 2004 funding shown reflects estimates based on actual FY 2002 obligations.

Production Support

Mission Supporting Goals and Measures

The Directed Stockpile Work (DSW) Production Support mission includes mission-specific program readiness and production modernization support activities at the nuclear weapons production plants and labs to maintain the nuclear weapons stockpile, including conducting the refurbishment and life extension efforts for the stockpile in accordance with Annex E, of the current year's Production & Planning Directive (P&PD) and the Stockpile Life Extension and Refurbishment Planning Component Description Document. Specific major technical efforts (MTEs) include: 1) information systems support; 2) purchasing and material support; 3) manufacturing support; 4) production engineering support; 5*)* tool, gauge, and test equipment services; and 6) quality supervision and control.

The subprogram provides both direct (targeted) and indirect (general) program readiness support to the Nuclear Weapons Complex production sites to enhance maintenance, refurbishment, and weapon-specific Life Extension Programs (LEPs). This support is critical to the modernization and advanced manufacturing thrust within the Nuclear Weapons Complex to maintain the nuclear weapons stockpile. Production Support of the DOE-DoD-Nuclear Weapons Council-agreed to Phase 6.X Weapons Refurbishment Process primarily occurs in Phases 6.4 (Production Engineering), 6.5 (First Production) and 6.6 (Full-Scale Production). However, some efforts can overlap activities conducted during Phase 6.3 (Development Engineering). The support is generally structured to be narrowly focused at each site as it is used to fill identified gaps in capabilities.

Subprogram Goal

Provided manufacturing, engineering and systems support required by the production complex in order to deliver directed schedule nuclear weapons components.

Performance Indicators

Percentage of information systems software upgrades accomplished as scheduled and within budget

Percentage of materials inventoried (Bill of Materials--BOM) and/or "on purchase" available for immediate use in scheduled component fabrication

Percentage of qualified machines available to provide advanced manufacturing capability and capacity in order to meet weapon component fabrication requirements of the directive schedule

Percentage of plant engineering services support provided to meet directive schedule requirements

Percentage of tools, gauges, and test equipment fully certified and available for use in meeting directive schedule requirements

Percentage of Quality Assurance (QA) supervision, calibration services, and certified equipment provided to meet directed schedule requirements

Annual Performance Results and Targets

FY 2002 Results	FY 2003 Targets	FY 2004 Targets
Provided support to the ORACLE 11i upgrade. Created a Quality Front End for the Active Ceramics production. Supported the Neutron Generator Data Analysis System (data analysis system), Phase I Demo. Initiated Supplier Delivery Metrics. Supported small tube/generator process characterization/ development builds (W80 first user) to include concurrent engineering, work instruction generation, etc. Provided product engineering for MC4277 NT MC4380A NG, and recertify generators for W76 and W78; support of Basis of Manufacturing generation for new products for W80 and W87 programs. Developed new software architecture, CMM level 2, with demonstration of Leade Probe Tester. Re-instituted Tool Team and designed/procured tools/fixtures/gauges to support ongoing production and new products.	Provide directive scheduled support to the ORACLE 11.5.7 upgrade. Create a Quality Front End for the Neutron Generator Incoming Material. Improve manufacturing rigor, as measured by agreed-upon metrics. Characterize the W78 generator, to include insulation material process characterization. Provide directive scheduled product engineering for the MC4277 and MC4300 Neutron Tubes, MC4380A and MC4381 Neutron Generators. Qualify Product Tester Data and Analysis programs for production testers. Design, build, and test the Manufacturing Management System. Complete the restart of the uranium alloy production process. Continue development of capacity model to provide ongoing floor "what ifs." Provide directive scheduled process engineering support of ongoing production.	Complete 90% or greater site-specific information systems/software upgrades, as scheduled. Maintain 95% or greater purchased materials in inventory available to meet directive schedule component production. Maintain 90% or greater manufacturing machinery in fully qualified operational condition in order to meet directive scheduled requirements. Provide at least 95% of available planned engineering services needed to meet directive schedule requirements. Maintain as available at least 95% of essential tools, gauges, and test equipment fully certified to meet directive schedule requirements. Provide at least 95% of Quality Assurance supervision, calibration services, and certified equipment to meet directive schedule requirements.

Qualified testers and MC4380A NG to support W76 program.

Re-qualified Neutron Generator processes to support move to new building.

Initiated Neutron Generator Center self assessment program.

Supported "elimination of QAIPs pilot in conjunction with OKSO, & included tracking defect codes and tracking/reporting system.

Provided Quality Acceptance support of neutron tubes/generators (new build and recert), timers, and detonators.

Provided directive scheduled calibration and maintenance support of floor operations.

Provided classified computing systems operated in compliance with security requirements and in support of the Y-12 production missions.

Ensured Manufacturing Process equipment remained available to support the Y-12 mission and schedules.

Maintained Quality Assurance (QA) functions (including chemical laboratory, metrology standards, dimensional inspection, physical testing, and quality certification) consistent with Y-12 mission requirements.

Design directive scheduled tools, fixtures, & gauges to support ongoing production and new products.

Provide Qualification Product Tester Data and Analysis programs in support of production testers.

Mitigate mechanical computer-aided design applications.

Administrate and track NNSA and DoD integrated contractor orders.

Maintain the web-based Calibration Management System database/tool.

Implement initial Nuclear Weapons Complex Component Library for electronic product design.

Maintain Quality Assurance functions consistent with Y-12 mission requirements.

Funding Schedule

(dollars in thousands)

	FY 2002	FY 2003	FY 2004	$ Change	% Change
Information Systems Support	47,442	30,818	39,274	8,456	27.4%
Purchasing and Materials Support	21,589	13,653	15,361	1,708	12.5%
Manufacturing Support	85,729	84,146	103,943	19,797	23.5%
Engineering Support	48,588	64,423	55,884	-8,539	-13.3%
Tool, Gage & Test Equipment Support	20,458	17,060	19,376	2,316	13.6%
Quality Supervision and Control Support	24,458	36,224	44,275	8,051	22.2%
Total, Production Support	248,264[a]	246,324[b]	278,113	31,789	12.9%

The FY 2003 Request column includes comparability adjustments as detailed in the footnotes for consistency with the FY 2004 Request.

Detailed Program Justification

(dollars in thousands)

	FY 2002	FY 2003	FY 2004
Information Systems Support	**47,442**	**30,818**	**39,274**

Includes the design, installation and maintenance of production-related computer systems (hardware and software) separate and distinct from general-use automated systems. Supports Nuclear Weapons Complex's weapons scheduling and information system upgrades, Manufacturing/production application upgrades, ORACLE X upgrade, Neutron Generator Data Analysis System Upgrade (NGDAS), installation of MMS and training project personnel, performance of product migration, upgrading classified computing systems in compliance with security requirement and in support of Y-12's critical mission, expanding nuclear weapons complex's central component library for electronic product design, and Automated Reservoir Management System.

[a]Does not reflect a reprogramming of $450,000 to project 98-D-125, Tritium Extraction Facility, which was requested in FY 2002, but not approved until December 2002. Includes a comparability adjustment of $110,830,000 associated with the realignment of DSW and RTBF activities to ensure consistencies among "production" sites.

[b]Includes a comparability adjustment of $108,618,000 associated with the realignment of DSW and RTBF activities to ensure consistencies among "production" sites.

Purchasing and Material Support **21,589 13,653 15,361**

Includes production and development-related purchasing functions, production and development-related transportation costs, and other services such as receiving, storing, packaging, and shipping of programmatic work load materials. Supports initiation of a dual-direction supplier-rating program, identification and implementation of six sigma process improvements, integration of suppliers into an active partnership in the Supply Chain, deployment of a classified NWC-wide database where association of components and weapons systems, performance of scheduled maintenance of the main frame Material Requirements Planning II system to assure uninterrupted DSW operations.

Manufacturing Support **85,729 84,146 103,943**

Includes production supervision and control, the planning, scheduling, and control of material and components for production, and internal production-related transportation functions. Supports compilation, tracking, and reporting production and surveillance requirements; manufacturing process equipment availability to support missions and schedules; oversight to weapon programs and support activities, focusing on development and pre-production support of W76, W80, and B61 LEPs; administration and tracking NNSA and DoD integrated contractor orders; development and management of manufacturing performance metrics; complex-wide provisioning for weapons systems and support activities; development and publication of program planning documents; tools for continuous improvement of management of weapons programs; direction and supervision of plant manufacturing production, office support and control (general operation, supervision and clerical support of weapons programs-direct personnel) and required general training.

Engineering Support **48,588 64,423 55,884**

Includes process and industrial engineering support, manufacturing engineering activities aimed at determining current and potential manufacturing capabilities, and product engineering. Supports program management for ongoing programs; process engineering support for ongoing production including improvements and issue resolution; completion of the annual complex-wide Production Readiness Assessment; simulation, models and analysis for weapon component development; risk management; precision measurement options; and planning, scheduling, and control of material and components for production.

Tools, Gages, and Test Equipment Support	**20,458**	**17,060**	**19,376**

Includes the preparation of specifications and design of special tools, gages, jigs, fixtures, and test equipment for production and inspection activities. Supports calibration and maintenance of several hundred production processes and test equipment; inspection, calibration and certification of tools and gages; web based Calibration Management System database/tool; implementation of cross training and succession planning to sustain technical competence as retirements occur; designed tools/fixtures/gages to support ongoing production and new products; tooling engineering activities involving the preparation of specifications and design of special tools, gages, jigs, fixtures, and test equipment for production and inspection activities; development of measurement standards and calibration techniques; calibration of equipment, tooling gages, and testers; and evaluation of results of calibration and standardization work (excluding calibration of equipment that is a part of a routine equipment maintenance program); and facility operation support including special tooling fabrication, modification and preventative maintenance.

Quality Supervision and Control Support	**24,458**	**36,224**	**44,275**

Includes (a) the quality control operating expense covering the work of supervision and office support for general in-line inspection and radiography; (b) quality control engineering support involved in development of procedures, criteria, and operating instruction for quality control program; development of quality control techniques, performance of special studies and analyses; and the collection, analysis, and reporting of data; (c) analytical laboratories performing chemical and physical analyses for process control certification; (d) development of measurement standards and calibration techniques; calibration of equipment, tooling, gages, and testers; and evaluation of results of calibration and standardization work (excluding calibration of equipment that is a part of a routine equipment maintenance program); and (e) all other quality control services. Supports production, planning and scheduling support with the management of the War Reserve parts/shipping and reservoir inventory/shipping; fixture fabrication as required to support changing production needs; Tritium Product Acceptance Quality Assurance inspections and verifications; general operations, and clerical support of the product acceptance and certification staff; quality control operating expense for in-line inspection and product acceptance actions; initial and re-qualification of products relocated by Stockpile Management Restructuring Initiative; ISO certification activities; calibration and maintenance of gages and equipment for the production departments and suppliers; quality systems to ensure consistent implementation of the Technical Business Practices; and maintain Product Realization Training Website.

Total, Production Support	**248,264**	**246,324**	**278,113**

Explanation of Funding Changes

	FY 2004 vs. FY 2003 ($000)
Production Support	
• **Information Systems Support** - The increase supports upgrades to various systems at the Y-12 National Security Complex including the nuclear materials control and accountability system, the Optimized Production Technology upgrade to the Shop Floor Control System, and Computerized Numerical Controller Lathe and Glovebox identified as a Major Item of Equipment below.	8,456
• **Purchasing & Materials Support** - The increase supports additional purchasing, receiving, storing, packaging and shipping for weapons materials	1,708
• **Manufacturing Support** - The increase supports the restart of the special materials dryer and molding loading process; provides for preventative and corrective maintenance for manufacturing process equipment including calibration, certification, and required testing; and the purchase of critical spare parts associated with key production streams and activities at Y-12 National Security Complex	19,797
• **Engineering Support** - The increase will complete the purchase of canisters and the replacement of the Kerf systems associated with the special materials capability at the Y-12 National Security Complex	-8,539
• **Tool, Gage, & Test Equipment Support** - The increase supports installation of special tools, gages, jigs, fixtures and test equipment for production and inspection activities	2,316
• **Quality Supervision and Control Support** - The increase will provide increased supports for product certification methodologies and processes at the Y-12 National Security Complex.	8,051
Total Funding Change, Production Support	**31,789**

Capital Operating Expenses and Construction Summary

Capital Operating Expenses [a]

(dollars in thousands)

	FY 2002	FY 2003	FY 2004	$ Change	% Change
General Plant Projects	390	402	414	12	3.00%
Capital Equipment	1,230	1,267	1,305	38	3.00%
Total, Capital Operating Expenses	1,620	1,669	1,719	50	3.00%

Major Items of Equipment (TEC $2 million or greater)

	Total Estimated Cost	FY 2002	FY 2003	FY 2004	Acceptance Date
Computer Numerical Controller Lathe and Glovebox, Y-12 National Security Complex	4,020	0	0	2,010	FY 2007

This project will procure and install a computer numerical control lathe and glovebox enclosure for special materials. The existing capability is difficult to maintain, and the age of the machines raises serious concerns of reliability.

[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 2003 and FY 2004 funding shown reflects estimates based on actual FY2002 obligations.

Field Engineering, Training and Manuals

Mission Supporting Goals and Measures

The Directed Stockpile Work (DSW) Field Engineering, Training, and Manuals Mission includes: 1) technical training of Department of Defense (DoD) and DOE nuclear weapons complex personnel, 2) preparation of and updates to weapon manuals and technical publications, 3) participation in the Joint Task Group of weapon evaluations prior to complete engineering release, and 4) support for field engineering activities on nuclear weapon alterations (Alts) and modifications (Mods).

Subprogram Goal

Quality field engineering and training support to maintain an efficient and effective deployed nuclear weapons maintenance and refurbishment capability as identified under the Stockpile Research and Development Program

Performance Indicators

Percentage of field engineering/ maintenance activities performed on/ahead of schedule as delineated in Annual Plan

Percentage of critically needed training classes for Department of Defense and Department of Energy personnel conducted versus scheduled (planned) based on identified annual stockpile maintenance student training requirements

Percentage of annually reviewed, critically needed technical publications, manuals, and warhead/bomb training documents that are outdated, expiring, or require updating or writing that are revised, updated, written, approved and certified as current in order to meet critical annual stockpile maintenance requirements.

Annual Performance Results and Targets

FY 2002 Results	FY 2003 Targets	FY 2004 Targets
Completed scheduled trials and validation of technical procedures. Provided timely processing of Unsatisfactory Reports. Provided technical advice on Ordnance Disposal, as requested. Validated technical procedures for Nuclear Weapons Complex weapons training.	Complete trials and validation of technical procedures, per directive schedule. Provide timely processing of Unsatisfactory Reports. Provide technical advice on Ordnance Disposal, as requested. Validate/update technical procedures for Nuclear Weapons	Complete 100 % of approved annual field retrofit engineering activities according to the Production and Planning Directive (P&PD) and warhead/bomb Program Control Documents (PCDs). Complete 100 % of all annual Unsatisfactory Report evaluations/ resolutions.

Conducted classroom and field training in weapons handling for DOE, DoD, and laboratory personnel, as scheduled. Maintained, prepared, and distributed approximately 140 technical manuals for DoD use. Provided directive scheduled field engineering support for approved Alterations/ Modifications, primarily for B61 bombs and identified weapon repairs.	Complex weapons training, per directive schedule. Conduct directive scheduled classroom and field training in weapons handling for DOE, DoD, and laboratory personnel. Maintain all relevant technical manuals for DoD use; prepare and distribute revisions/updates, as directed. Provide directive scheduled field engineering support for approved Alterations/ Modifications for identified weapons/weapon repairs.	Complete 100 % of scheduled critical needs annual training (classes) for Department of Defense and Department of Energy (DoD and DOE) students to meet annual stockpile maintenance requirements and to ensure the highest competency of nuclear weapons stockpile maintenance personnel. Complete 100 % of scheduled (planned) revisions and updates (with appropriate approvals and certifications) of stockpile maintenance technical manuals/documents and publish new approved maintenance documentation, as required, to meet critical stockpile needs.

Funding Schedule

(dollars in thousands)

	FY 2002	FY 2003	FY 2004	$ Change	% Change
Field Engineering, Training, and Manuals . . .	6,270	6,893	7,170	277	4.0%
Total, Field Engineering, Training and Manuals	6,270	6,893	7,170	277	4.0%

Detailed Program Justification

(dollars in thousands)

	FY 2002	FY 2003	FY 2004
Field Engineering, Training and Manuals	**6,270**	**6,893**	**7,170**

Provides continuous support to ongoing weapon operations, trains military service personnel as they rotate into new positions, and updates all technical manuals. The program will continue to provide technical training of military and DOE/NNSA nuclear weapons complex personnel, support field engineering activities for Alts and Mods, and updates to weapon manuals and technical publications.

Total, Field Engineering, Training and Manuals	**6,270**	**6,893**	**7,170**

Explanation of Funding Changes

	FY 2004 vs. FY 2003 ($000)
Field Engineering, Training and Manuals	
# The increase enables support required to field approved weapon alteration kits.	277
Total Funding Change, Field Engineering, Training and Manuals	**277**

Capital Operating Expenses and Construction Summary

Capital Operating Expenses [a]

(dollars in thousands)

	FY 2002	FY 2003	FY 2004	$ Change	% Change
General Plant Projects	0	0	0	0	N/A
Capital Equipment	0	0	0	0	N/A
Total, Capital Operating Expenses	0	0	0	0	N/A

[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 2003 and FY 2004 funding shown reflects estimates based on actual FY 2002 obligations.