

Weapons Activities

Proposed Appropriation Language

For Department of Energy expenses, including the purchase, construction and acquisition of plant and capital equipment and other incidental expenses necessary for atomic energy defense weapons activities in carrying out the purposes of the Department of Energy Organization Act (42 U.S.C. 7101 et seq.), including the acquisition or condemnation of any real property or any facility or for plant or facility acquisition, construction, or expansion; and the purchase of passenger motor vehicles (not to exceed [12] *II* for replacement only), [\$5,015,186,000], \$5,300,025,000, to remain available until expended.[: *Provided*, That, \$130,000,000 shall be immediately available for Project 96-D-111, the National Ignition Facility at Lawrence Livermore National Laboratory: *Provided further*, That \$69,100,000 shall be available only upon a certification by the Administrator of the National Nuclear Security Administration to the Congress after March 31, 2001, that: (a) includes a recommendation on an appropriate path forward for the project; (b) certifies all established project and scientific milestones have been met on schedule and on cost; (c) certifies the first and second quarter project reviews in fiscal year 2001 determined the project to be on schedule and cost; (d) includes a study of requirements for and alternatives to a 192 beam ignition facility for maintaining the safety and reliability of the current nuclear weapons stockpile; (e) certifies an integrated cost-schedule earned-value project control system has been fully implemented; and (f) includes a 5-year budget plan for the stockpile stewardship program. (*ENERGY AND WATER DEVELOPMENT APPROPRIATIONS ACT, 2001, as enacted by Section 1(a)(2) of P. L. 106-377*].

Explanation of Change

Delete FY 2001 language relating to one-time NIF reporting requirements.

Defense Programs

Executive Budget Summary

Mission

The statutory mission of the National Nuclear Security Administration's Office of Defense Programs is to maintain and enhance the safety, reliability and performance of the United States nuclear weapon stockpile, in order to meet national security requirements. The mission is carried out in partnership with the Department of Defense, through research, development and production activities supporting the U.S. nuclear weapon stockpile. The program also supports national assets for secure transportation of weapons and hazardous materials, and assets to respond to incidents involving nuclear weapons and materials. About 2,000 Federal employees provide direction, management and oversight of about 25,000 contractor employees who carry out program activities in a safe, secure, environmentally-responsible manner at a nationwide complex of government-owned, contractor operated nuclear weapons production facilities and national security laboratories.

The FY 2002 Budget request for these activities is \$5,300,025,000, a 4.6% increase over the appropriated FY 2001 level. President Bush asked the Secretary of Defense, in coordination with the Secretary of Energy, to conduct three reviews to create a new vision for the role of the nation's military in the 21st century. Completion of these reviews could impact the FY 2002 and outyear budgets for defense and national security-related activities.

Goals and Objectives

There are three principal goals and objectives for Defense Programs:

- # Maintain and refurbish nuclear weapons in accordance with directed schedules to sustain

confidence in their safety and reliability indefinitely under the nuclear testing moratorium and arms reduction treaties.

- # Achieve a robust and vital scientific, engineering and manufacturing capability to enable the current and future certification of the nuclear weapon stockpile and the manufacture of nuclear weapon components under the nuclear testing moratorium.
- # Ensure the vitality and readiness of DOE's nuclear security enterprise

Policy Framework

For the first 30 years of its existence, the nuclear weapons complex was a growing network of government-owned, contractor operated facilities managed by the United States Atomic Energy Commission. The nuclear weapons complex provided capabilities to conduct weapons research and development, to test weapons at atmospheric and underground ranges, to produce special nuclear materials, and to manufacture and assemble weapons for the stockpile. Beginning in 1980, the Department of Energy Weapons Research, Development and Testing, Weapons Production and Surveillance, and Nuclear Materials Production programs were accelerated by former President Reagan, culminating in the end of the Cold War in the early 1990's. At that point, the historical approach to nuclear weapon stockpile stewardship, encompassing "weapons research, development, testing and production" activities, was fundamentally changed by the cessation of nuclear weapons production in 1990 and a moratorium on underground nuclear testing beginning in 1992. Our new mission became "Stockpile Stewardship" of an aging stockpile.

In 1993, former President Clinton and the Congress directed that a science-based stockpile stewardship program be developed to maintain the United States' stockpile of nuclear weapons without underground nuclear testing. The next five years were spent in real-time program development, intensified by studies and debate throughout the nuclear weapons community as to what would constitute effective nuclear stockpile stewardship without nuclear testing. In August, 1995, former President Clinton announced his intention to seek a "zero yield" Comprehensive Test Ban Treaty (CTBT), based primarily on the successful implementation of the Stockpile Stewardship Program. In October 1999, following the debate and Senate vote rejecting the CTBT, the Secretary of Energy directed a comprehensive internal review of the first five years of the Stockpile Stewardship Program. The "30 Day Review" was conducted by the Under Secretary of Energy and was reported on November 23, 1999. The findings stated that the Stockpile Stewardship program was working and on track, but many recommendations for improvement were included as well. These recommendations were instrumental in setting the programming and budget priorities in the FY 2001 and FY 2002 budgets.

President Bush asked the Secretary of Defense, in coordination with the Secretary of Energy, to conduct three reviews to create a new vision for the role of the nation's military in the 21st century. The first review will examine the appropriate national security strategy, force structure and budget priorities to guide future decisions on military spending. The second review will examine the requirements of deterrence in the current security environment. This review will examine the size of the future nuclear stockpile, and address the Nation's missile defense needs. The third review will examine the overall quality of life for our military personnel. Completion of these projects could

impact the FY 2002 and outyear budgets for defense and national security-related activities.

Planning Basis

Efforts are underway within the National Nuclear Security Administration (NNSA) to enhance the planning, programming and budgeting systems for FY 2003 and beyond. NNSA is in the process of updating its Strategic Plan, and is planning to implement a system similar to the DoD Planning, Programming and Budgeting System (PPBS) to improve the rigor of its planning processes and enhance the credibility of the future years budget information.

In June 2000, the Stockpile Stewardship Plan and Executive Overview for Fiscal Year 2001 was approved by the DOE. This plan encompasses all of Stewardship program activities, and provides programmatic milestones and planning-based budget estimates. These documents are transmitted annually to the Congress in accordance with the National Defense Authorization Act for Fiscal Year 1998. The Plan is classified Secret/Restricted Data.

Supporting this document are individual plans for each program element, developed jointly by Headquarters Federal program managers and technical experts at the Management and Operating (M&O) contractor sites. As part of the PPBS implementation described above, we are working towards a system where these plans are updated semi-annually to focus on budget year program execution, support the Congressional budget request, and provide the basis for associated future year budget planning.

Program Overview

The Defense Programs activities funded in the Weapons Activities appropriation are managed by the National Nuclear Security Administration. The highest priority of the Stockpile Stewardship

Program is to ensure the operational readiness of the nuclear weapon stockpile. We are conducting surveillance, experiments, and simulations for individual weapons and weapon systems. At the same time, we are investing in advanced scientific and manufacturing capabilities for the future to ensure the capability to accurately assess weapon status, extend weapon life, and certify that the stockpile remains safe and reliable.

Directed Stockpile Work maintains confidence in the safety, reliability and performance of the nuclear weapons in the nation's stockpile through maintenance and evaluation of the weapons and planned refurbishments. These activities, conducted in concert with the DoD, support our top priority. We will continue full scale refurbishment work on the W87, including structural retrofits and a new gas transfer system. Beginning in FY 2001, Directed Stockpile Work accelerated sharply as we prepared to undertake life extension activities for up to three additional systems. DOE is working with the Nuclear Weapons Council (NWC) to reach agreement on the timing, pace, scope and technical aspects of this work. For the B61-3/4/10, the NWC has approved commencement of development engineering to change the fin cant on the bombs. The NWC also approved feasibility study and design definition and cost studies on the B61-7/11 to focus on canned subassembly aging issues, and a development engineering study to extend life, add advanced reservoir technology and enhance surety for the W80. The W76 is currently undergoing development engineering to extend warhead life, refurbish the primary and secondary, add new arming, fusing and firing system, and add the next generation of advanced reservoir technology. In FY 2002, much of this work is focused on Stockpile R&D, supporting the laboratory efforts needed in the pre-production stages, pending the outcome of the strategic review of national security-related programs directed by the President.

The **Campaigns** activities contribute technology needed to carry out the directed stockpile work, as well as foster the new ideas and concepts that will provide opportunities for cutting edge improvements to sustain the stockpile and the program for many years into the future. The campaign activities are essential for certification and life extension of the stockpile, and they are designed to allow us to move to "experience-based" judgements for stewardship, utilizing experiments, computations, simulation and surveillance information, rather than just nuclear testing. During the upcoming five year period, many of the science campaign activities will be focused to provide technologies for the directed stockpile workload, and we will complete new science and experimental facilities. The National Ignition Facility project is scheduled to be completed at the end of FY 2008, with experimental operations in support of stockpile stewardship scheduled to begin during the upcoming five year period. The computations and simulation campaign will continue to improve our hardware capability at the laboratories during the five year period, but without a commitment to a 100 teraops capability by 2004 as previously planned. The readiness campaigns are technology-base efforts designed to maintain and enhance manufacturing and other capabilities needed for the future production of weapon components. The pace of all of the campaigns will be assessed as part of the strategic review of the national security-related programs.

The Stewardship program develops and maintains the world class scientific, engineering, manufacturing and experimental capabilities needed to achieve weapons stockpile certification for the long term. Over one third of DP's financial resources are devoted to operating key defense facilities funded by the **Readiness in Technical Base and Facilities** activities. These ensure the vitality of the DOE national security enterprise,

including the physical and intellectual infrastructure for the three national laboratories, Lawrence Livermore National Laboratory, Los Alamos National Laboratory, and Sandia National Laboratories, the Nevada Test Site, and the Kansas City, Pantex and Y-12 production plants and Savannah River tritium facilities. Funding provides for operation and maintenance of the facilities, with a goal of a consistent readiness level. Infrastructure **construction** projects are also included in this budget category. An approach to redress infrastructure problems throughout the complex has been developed in response to a recent comprehensive study of facilities and infrastructure. A multi-year initiative to correct maintenance deficiencies with the goals of stabilizing the infrastructure, increasing availability of our current facilities, and extending their useful lives will be reviewed as part of the strategic review of national security-related programs.

Defense Programs also provides federal support for the DOE **Secure Transportation Asset**, the network of rolling stock, special agent and other personnel and specialized infrastructure for the safe and secure movement of weapons, weapon components and other hazardous materials within the continental United States.

Consistent with the FY 2001 appropriations act, expenditures for **Weapons Safeguards and Security (S&S)** activities have been segregated from the mainline programs into a separate budget category. All funding for S&S for NNSA landlord sites is included in the Weapons Activities appropriation, as well as support for cyber security activities.

Weapons Program Direction funding is requested for salaries, benefits and all support for Defense Programs Headquarters Federal staff of about 250, and the federal staff in the field supporting NNSA landlord responsibilities and Defense Programs activities which totals about 1,430 full time

equivalent employees. Funding for the NNSA Administrator's office is not included in this account; it is funded in a separate appropriation.

Recent Accomplishments

The final assessment on the FY 2000 Presidential Performance Agreement for Defense Programs indicates that nine of twelve Stockpile Stewardship performance measures met or exceeded expectation. This is an improvement over FY 1999 performance, when 55 percent of the measures met or exceeded expectation.

Performance Target: Report annually to the President on the need or lack of need to resume underground testing to certify the safety and reliability of the nuclear weapons stockpile.

Status: The establishment of an annual process for the review and certification of the safety and reliability of the nuclear weapons stockpile was directed by former President Clinton on August 11, 1995. The Secretaries of Defense and Energy must inform the President each year whether the nuclear stockpile has any safety or reliability concerns that require underground testing. In reaching their conclusion they are advised by the Directors of DOE's three national weapons laboratories, the Commander of the U.S. Strategic Command, and the joint Nuclear Weapons Council. The fifth Annual Certification was submitted to the President on January 11, 2001, and the sixth Annual Certification process is underway.

Performance Target: Meet all annual weapons alteration and modification schedules developed jointly by DOE and DoD.

Status: Weapon alterations and modifications are crucial to upgrade the stockpile to meet higher safety standards, replace faulty components, meet

changed military requirements, or extend the life of a weapon. Although no modifications were required this fiscal year eleven alterations are underway: five for the B61, one for the W76, one for the W78, two for the B83, and two for the W87. Six of the eleven alterations are behind schedule due to operational problems at Pantex, findings in flight testing and production testing, production problems and a stop work which occurred on the Common Radar. New completion schedules for the affected systems have been coordinated with the DoD and are underway.

Performance Target: Complete an internal comprehensive review of the Stockpile Stewardship Program.

Status: The "U.S. Department of Energy Stockpile Stewardship Program 30-Day Review" was completed November 23, 1999, and released to the public on December 10, 1999. The comprehensive internal review engaged an external group of senior technical advisors with long experience in the nation's national security programs. The review's scope included the health and status of the nuclear weapons complex; and the status of recruitment, retention and training of top scientists and engineers needed to sustain stockpile stewardship. The assessment concludes that the program, which began in 1993, is sound and developing the science, technology, and production capabilities needed to maintain the long-term safety, security and reliability of the nation's existing nuclear weapons without underground nuclear testing. Several recommendations were made and acted upon by the Department.

Performance Target: Begin implementation of the commercial light water reactor technology to provide a reliable source of tritium.

Status: In order to function as designed, all U.S. nuclear weapons require the use of tritium which has not been produced by the United States since 1988. Because tritium, a radioactive isotope of hydrogen, decays at a rate of 5.5 percent per year, it must be

replenished periodically. Although the current inventory of tritium, including the reserve, is dwindling, it will be sufficient to meet requirements until at least 2005, depending on future force structure decisions. The Commercial Light Water Reactor Project is meeting the milestones of its baseline schedule which calls for the production of tritium in the TVA reactors in early fiscal year 2004 and the delivery of tritium gas to the nuclear weapons stockpile in mid-fiscal year 2006. Achievements since the beginning of fiscal year 2000 are as follows: 1) An interagency agreement between DOE and TVA is in effect and TVA is proceeding on schedule with preparations to request the Nuclear Regulatory Commission to amend the licenses of TVA's reactors to permit tritium production; 2) Non-destructive examinations of tritium-producing rods previously irradiated in a TVA reactor have been completed; 3) Site preparation is proceeding on schedule for the Tritium Extraction Facility (site excavation has been completed); and 4) DOE has awarded a contract for commercial, long-term fabrication of tritium-producing rods for irradiation.

Performance Target: Demonstrate a computer code capable of performing a three-dimensional analysis of the dynamic behavior of a nuclear weapon primary, including a prediction of the total explosive yield, using an Accelerated Strategic Computing Initiative (ASCI) computer system.

Status: In December 1999, the first-ever three-dimensional simulation of a nuclear weapon "primary" explosion was successfully completed at DOE's Lawrence Livermore National Laboratory using an ASCI supercomputer. Modern nuclear weapons consist of two main components, a primary, or trigger, and the thermonuclear reaction which is called the secondary. Demonstrating the ability to computationally visualize and analyze what happens to the primary is the first critically important step taken in simulating an entire nuclear

weapons's explosion and is visual proof that key advances are being made in our science-based methods to secure the safety and reliability of our nuclear weapons without underground testing.

Performance Target: Continue construction of the National Ignition Facility (NIF) and rebaseline future construction, total costs, and schedules by June 2000.

Status: The National Ignition Facility remains a cornerstone requirement of the Stockpile Stewardship Program. It is the only facility that will allow the experimental study of fusion burn in the laboratory. This capability is an essential element of our ability to maintain our nuclear deterrent into the future. The final certification for the revised cost and schedule baseline was submitted on September 14, 2000. The revised cost estimate of NIF construction is \$2.25 billion with an additional \$1.25 billion required for other related operational activities. The project will be completed by September 2008 with initial operation in June 2004. Construction of the NIF continued during fiscal year 2000. The NIF building conventional construction is about 98 percent complete and the 33-foot diameter target chamber has been installed in the building. Installation of the laser system infrastructure is underway, as is procurement of laser glass and large optical components. The design of the laser and target area special equipment is nearing completion and procurement of the hardware to outfit the 192 beamlines has started.

Performance Target: Begin execution of the Defense related project management campaign implementation plan.

Status: The Project Management Campaign is essential to restoring Congressional and GAO confidence in Defense Program's construction project management abilities. By reducing both the frequency and magnitude of cost and schedule overruns on projects, Defense Programs will be able to more effectively accomplish its strategic goals.

While the Campaign has a planned duration of three years, Defense Programs has already established a dedicated office reporting directly to top management, and meaningful results are being seen from the actions initiated this fiscal year.

Performance Target: Conduct further subsets of the subcritical experiment begun in FY 1999 (Oboe) and one additional subcritical experiment at the Nevada Test Site to provide data on the behavior of nuclear materials during the implosion phase of a nuclear weapon.

Status: Data from subcritical experiments make a significant contribution to stockpile stewardship and to maintaining nuclear test readiness. Subcritical experiments planned for FY 2000 were Thoroughbred and a continuation of the Oboe series begun in fiscal year 1999. The Oboe series of subcritical experiments are designed to improve our understanding of the complex behaviors of metal surfaces and sub-surfaces resulting from high-explosive shock conditions. Oboe 2, a radiography experiment, was conducted on November 9, 1999; Oboe 3, a holography experiment, was conducted on February 3, 2000; Oboe 4, a holography experiment was conducted on April 6, 2000; and Oboe 5, a holography experiment, was conducted on August 18, 2000. The Thoroughbred subcritical experiment, conducted on March 22, 2000, was the second subcritical experiment which compared ejecta production between wrought and cast plutonium.

Performance Target: Ensure that all facilities required for successful achievement of the Stockpile Stewardship Program remain operational.

Status: The Los Alamos National Laboratory nuclear production facilities, TA-55 and the Chemistry and Metallurgy Research building, remain operational. However, operations have

been severely restricted due to the March 16, 2000, Pu-238 intake accident and the resulting compensatory and corrective actions. In addition, the Cerro Grande Fire, in May 2000, caused significant disruption to all LANL activities. At the end of the fiscal year, operations in TA-55 were just beginning to return to normal with the resumption of pit manufacturing development activities, and FY 2000 supplemental funding was appropriated to mitigate fire damage at the laboratory.

Performance Target: Meet the established schedules for downsizing and modernizing our production facilities.

Status: The Department nearly met its established schedules for downsizing and modernization of our production facilities during FY 2000. Downsizing and modernization of our production facilities are planned under the Stockpile Management Restructuring Initiative, including the tritium facilities at the Savannah River Site near Aiken, South Carolina; uranium machining, recycling and storage facilities at the Y-12 Plant; weapons assembly/disassembly and high explosive fabrication facilities at the Pantex Plant near Amarillo, Texas; and non-nuclear production facilities for electronic, electro-optical devices, plastic and machined parts at the Kansas City Plant in Kansas City, Missouri. The Savannah River and Y-12 projects are behind schedule and plans of action are included in the FY 2002 budget request.

Performance Target: Ensure that the capability to resume underground testing is maintained in accordance with Presidential direction through a combined experimental and test readiness program.

Status: The Department continues to meet its goal in maintaining the capability to resume underground nuclear testing, which requires: (1) exercising nuclear testing skills of personnel at the three nuclear weapons laboratories and the Nevada Test Site (NTS), (2) maintaining test facilities and equipment

at the NTS, and (3) providing access to experienced personnel through knowledge capture and archiving. One complex subcritical experiment, Thoroughbred, and four additional experiments of the Oboe series of subcritical experiments begun in FY 1999 were conducted during FY 2000. Furthermore, thirty-five high-explosive experiments were conducted in FY 2000 at the NTS. Archiving activities continue, and in FY 2000, Borehole Photography archiving began with an inventory of all sets of photography. In the first half of FY 2000, 2 new classified CD ROMs were created, and over 8,200 images related to underground tests were scanned into the Document Management and Archived Records System.

Performance Target: Adhere to approved schedules for the safe and secure dismantlement of nuclear warheads that have been removed from the U.S. nuclear weapons stockpile.

Status: As of September 30, 2000, 100% of the fiscal year 2000 dismantlement quantity was completed with no safety or security concerns. This cumulative percentage is a combination of: W56 Minuteman II warhead and W79 Artillery-Fired Atomic Projectile warhead dismantlements, and Quality Assurance/Miscellaneous dismantlements.

Major Changes in FY 2002

The FY 2002 Weapons Activities budget reflects total transition to the new integrated Stockpile Stewardship accounts, and the inclusion of Weapons Safeguards and Security funding for NNSA landlord responsibilities, consistent with the FY 2001 appropriations act.

Budget Structure: As the structure has been fine tuned on the basis of FY 2001 budget execution, there have been small adjustments in the locations for some activities, therefore the prior year

information has been made comparable to the FY 2002 structure. The names of two campaigns have been changed: Defense Computing and Modeling is changed to Advanced Simulation and Computing; and Certification in Hostile Environments is changed to Nuclear Survivability to better reflect the principal objective of the campaign and to be consistent with the name for these activities at the Defense Threat Reduction Agency. "Secure Transportation Asset" is the new title for the specialized transportation assets maintained and operated by Defense Programs, replacing "Transportation Safeguards Division", which is an outdated operations office organizational title. There is one major modification to the budget structure to restructure the Pit Manufacturing Readiness Campaign to support DP's broader Pit Manufacturing and Certification Mission. This action is discussed separately in the following section.

Restructured Campaign for Pit Manufacturing and Certification: The conference report on FY 2001 Energy and Water Development Appropriations supported Senate report language that directed the National Nuclear Security Administration to report by December 1, 2000, on six key aspects of the pit production program, including an analysis of the funding needed to get the program on schedule. An interim report was provided to Congress on December 5, 2000. A fundamental change proposed in the Interim Report is that DP has decided to approach its pit manufacturing and certification mission as a "project" to instill the discipline that will be needed to produce and certify W88 replacement pits. It is important to note that the use of the word "project" in this context does not imply a construction project line item; this is primarily an operations and maintenance activity and no facility line item construction is included at this time.

From the budget perspective, this requires Defense Programs to restructure the current Pit Manufacturing Readiness campaign to incorporate

other activities currently ongoing or planned in Directed Stockpile Work and Campaigns to create an expanded campaign to encompass the funding needed for the pit mission. Using the December, 2000, Interim Report as a baseline, the restructured campaign will include four major technical elements: pit manufacturing activities, and pit certification activities, both of which are directly related to the W88; pit manufacturing capability and manufacturing process development for pits in other weapon systems, and work associated with planning for a future new pit facility. The FY 2002 funding request for the restructured campaign is \$128.5 million.

NNSA Landlord Responsibilities: As part of implementing the National Nuclear Security Administration, the FY 2002 Weapons Program Direction account includes funding for a number of NNSA staff paid for within non-NNSA accounts during FY 2001. With these transfers, in conjunction with a smaller number of direct-program staff now being funded within other NNSA accounts, all DOE federal staff designated as NNSA employees will be funded within NNSA accounts starting in FY 2002. Specific to Weapons Activities the transferred positions include landlord staff at the Albuquerque Operations Office, previously funded by the Office of Environmental Restoration; the landlord staff at the Oakland Operations Office, previously funded by the Office of Science; Safeguards and Security oversight staff at the Oak Ridge and Oakland Operations Offices, paid for by the Office of Science in FY 2001 (these positions were funded by Defense Programs in FY 2000); and the Headquarters federal staff associated with oversight and management of the Department's Emergency Response assets (e.g., Nuclear Emergency Search Team, Aerial Measurements Survey), paid for by the Office of Security and Emergency Management in FY 2001.

Administrative Control of Funds Level: We propose a change to the administrative control of funds levels for FY 2002 in recognition of operating experience we have gained in FY 2001.

Administrative funding control levels are proposed at Directed Stockpile Work, Campaigns, and Readiness in Technical Base and Facilities, Secure Transportation Asset, Weapons Safeguards and Security and Weapons Program Direction, rather than the lower levels enacted for FY 2001. The detailed budget justification for Directed Stockpile Work, Campaigns and Readiness in Technical Base and Facilities is still provided at the lowest level of detail, and cost reporting will also continue at the lower levels.

Major Issue

In January 2001, President Bush asked the Secretary of Defense to conduct three reviews to create a new vision for the role of the nation's military in the 21st century. Completion of these reviews could impact the FY 2002 and outyear budgets for defense and national security-related activities.

FY 2002 Request

The FY 2002 Request is \$5.3 billion, an increase of 4.6 percent over the comparable appropriated FY 2001 level. This request will:

- C **support** all scheduled maintenance and evaluation and certification for current stockpile;
- C **defer** some decisions on refurbishment workload;
- C **support** manufacture of a certifiable W88 pit in 2003, with **no** commitment to certification schedule or production quantities;
- C **maintain** all current facilities and sites at approximately current level of funding,
- C **maintain** current M&O contractor employment levels for ongoing programs;

- C **maintain** Secure Transportation and Nuclear Weapon Incident Response national assets at the current level;
- C **meet** current requirements for Weapons Safeguards and Security; and undertake a limited cyber security initiative; and
- C **maintain** Federal staffing levels at current on-board level, including reconsolidation of NNSA Federal landlord and S&S staff.

Use of Prior Year Balances

Defense Programs review of the FY 2000 end-of-year accounting data for Weapons Activities indicated that ending uncosted balances were \$159 million below the threshold allowed by the DOE standard.

Although DP balances were below the standard, use of \$13.647 million in prior year balances was directed as part of the FY 2001 appropriation. Of this amount, approximately \$8.0 million was redirected from existing uncosted balances, \$1.6 million came from prior year deobligations associated with closed out construction projects, and the remainder was assessed from Operations of Facilities.

No prior year balances are expected to be available to finance the FY 2002 Request.

Five Year Budget Planning Estimates

Five Year budget estimates are required by Section 3253 of the National Defense Authorization Act for FY 2000 (P.L. 106-65). The National Nuclear Security Administration's final Future Years Nuclear Security Program for FY 2002 through FY 2007 is currently undergoing review and will be submitted to Congress after completion of the President's strategic review of national security-related activities.

Tabular Information

Tables displaying the budget request by program and funding and employment information by site are included on the following pages.

Program Performance Measures

The Strategic Objectives, Strategies and Performance Measures in development for the new Department of Energy Strategic Plan are the basis for this budget request. The following three national nuclear security strategic objectives will be accomplished as a result of carrying out the supporting activities detailed in this budget justification.

- NS-1 Maintain and refurbish nuclear weapons in accordance with directed schedules to sustain confidence in their safety and reliability indefinitely under the nuclear testing moratorium and arms reduction treaties.
- NS-2 Achieve a robust and vital scientific, engineering and manufacturing capability to enable the future certification of the nuclear weapon stockpile and the manufacture of nuclear weapon components under the nuclear testing moratorium.
- NS-3 Ensure the vitality and readiness of DOE's nuclear security enterprise.

BGen Thomas F. Gioconda, USAF
Acting Deputy Administrator
for Defense Programs

Table 1
Weapons Activities Account Summary
(dollars in thousands)

	FY 2000 Comparable Appropriation	FY 2001 Original Appropriation	FY 2001 Adjustments	FY 2001 Comparable Appropriation	FY 2002 Request	Change %
Operations and Maintenance	4,085,776	4,800,156	(260,605)	4,537,934	4,811,774	6.0%
Construction	526,371	575,173	(2,865)	573,925	517,236	-9.9%
Subtotal	4,612,147	5,375,329	(263,470)	5,111,859	5,329,010	4.2%
Adjustments	(48,642)	(360,143)	317,573	(42,570)	(28,985)	-31.9%
Total, Weapons Activities	4,563,505	5,015,186	54,103	5,069,289	5,300,025	4.6%

Table 2
Program Funding by Decision Unit - Summary
(dollars in thousands)

	FY 2000 Comparable Appropriation	FY 2001 Original Appropriation	FY 2001 Adjustments	FY 2001 Comparable Appropriation	FY 2002 Request	Change %
Directed Stockpile Work	732,088	910,603	3,933	914,536	1,043,791	14.1%
Campaigns	1,831,051	2,105,014	-81,815	2,023,199	1,996,413	-1.3%
Readiness in Tech Base and Facilities	1,312,752	1,642,372	-228,595	1,413,777	1,446,988	2.3%
Secure Transp Asset . .	104,463	115,673	-556	115,117	121,800	5.8%
Weapons Safeguards and Security	393,788	377,596	17,068	394,664	448,881	13.7%
Weapons Program Direction	238,005	224,071	26,495	250,566	271,137	8.2%
Adjustments	(48,642)	(360,143)	317,573	(42,570)	(28,985)	-31.9%
Total, Weapons Activities	4,563,505	5,015,186	54,103	5,069,289	5,300,025	4.6%

Table 3
Weapons Activities
FY 2001 Adjustments & Comparabilities

(Dollars in Thousands)

	FY 2001 Original Appropriation	General Reduction	Safeguards & Security Reduction	Accounting & Technical Adjustments	FY 2001 Omnibus Rescission	Internal Reprogram- mings	FY 2002 Structure Comparabilities		FY 2001 Adjust- ments (Subtotal)	FY 2001 Comparable Appropriation
							Internal	External		
Directed Stockpile Work	910,603	-1,845	-18,963	59,025	-2,084	-5,000	-27,200		3,933	914,536
Campaigns . .	2,105,014	-29,078	-60,895	-19,651	-4,391		32,200		-81,815	2,023,199
Readiness in Technical Base & Facilities	1,642,372	-3,946	-210,000	-39,374	-3,027		-5,000	32,752	-228,595	1,413,777
Secure Transportation Asset	115,673	-302	0	0	-254				-556	115,117
Safeguards & Security	377,596	0	0	0	-831	5,000	-11,607	24,506	17,068	394,664
Program Direction	224,071	-529	-20,938	0	-446		11,607	36,801	26,495	250,566
Subtotal, Weapons Activities	5,375,329	-35,700	-310,796	0	-11,033	0	0	94,059	-263,470	5,111,859

	FY 2001 Original Appropriation	General Reduction	Safeguards & Security Reduction	Accounting & Technical Adjustments	FY 2001 Omnibus Rescission	Internal Reprogram- mings	FY 2002 Structure Comparabilities		FY 2001 Adjust- ments (Subtotal)	FY 2001 Comparable Appropriation
							Internal	External		
Use of Prior Year Balances	-13,647								0	-13,647
General Reduction . . .	-35,700	35,700							35,700	0
Safeguards & Security Reduction . . .	-310,796		310,796						310,796	0
Security Charge against Reimbursable Work	0								-28,923	-28,923
Total, Weapons Activities	5,015,186	0	0	0	-11,033	0	0	65,136	54,103	5,069,289

Table 4
Site Funding Estimates - Weapons Activities Total

(dollars in thousands)

	FY 2000	FY 2001	FY 2002	\$ Change	% Change
Albuquerque Operations Office					
Albuquerque Operations Office	260,292	241,532	266,672	25,140	10.4%
Kansas City Plant	300,889	345,188	346,353	1,165	0.3%
Los Alamos National Laboratory	927,657	1,117,622	1,096,332	(21,290)	-1.9%
Pantex Plant	257,648	292,691	310,728	18,037	6.2%
Sandia National Laboratories	761,537	853,589	900,516	46,927	5.5%
Subtotal, Albuquerque Ops Office	2,508,023	2,850,622	2,920,601	69,979	2.5%
Chicago Operations Office	12,647	41,969	1,600	(40,369)	-96.2%
Idaho Operations Office	1,500	1,600	1,600	0	0.0%
Nevada Operations Office	233,961	235,127	271,243	36,116	15.4%
Oak Ridge Operations Office					
Oak Ridge Y-12	337,409	485,917	502,889	16,972	3.5%
OR Science & Technology Institute	150	150	156	6	4.0%
Oak Ridge National Laboratory	10,098	19,518	19,817	299	1.5%
Oak Ridge Operations Office	16,813	10,898	13,878	2,980	27.3%
Subtotal, Oak Ridge Operations Office	364,470	516,483	536,740	20,257	3.9%
Oakland Operations Office					
General Atomics	10,083	8,000	7,622	(378)	-4.7%
Lawrence Berkeley Laboratory	30,074	0	0	0	??
Lawrence Livermore National	873,641	813,103	904,607	91,504	11.3%
Naval Research Laboratory	14,822	24,015	10,000	(14,015)	-58.4%
Oakland Operations Office	36,587	39,884	41,436	1,552	3.9%
University of Rochester	31,493	32,660	33,450	790	2.4%
Subtotal, Oakland Operations Office	996,700	917,662	997,115	79,453	8.7%

	FY 2000	FY 2001	FY 2002	\$ Change	% Change
Richland Operations Office					
Pacific Northwest Laboratory	23,346	9,280	0	(9,280)	-100.0%
Richland Operations Office	0	0	0	0	0.0%
Subtotal, Richland Operations Office	23,346	9,280	0	(9,280)	-100.0%
Savannah River Operations Office					
Savannah River Operations Office	3,701	3,876	5,431	1,555	40.1%
Savannah River Westinghouse	170,983	226,565	228,201	1,636	0.7%
Subtotal, Savannah River Ops Office	174,684	230,441	233,632	3,191	1.4%
Other	2,000	0	0	0	??
Headquarters	294,816	308,675	366,479	57,804	18.7%
Subtotal	4,612,147	5,111,859	5,329,010	217,151	5.1%
Adjustments	(48,642)	(42,570)	(28,985)	13,585	-31.9%
TOTAL WEAPONS ACTIVITIES	4,563,505	5,069,289	5,300,025	230,736	4.6%

Table 5
Detailed Program Funding Summary

(\$ in Thousands)

	FY 2000	FY 2001	FY 2002	Change \$	Change %
Directed Stockpile Work					
Stockpile R&D	203,860	245,470	305,460	59,990	24.4%
Stockpile Maintenance	242,395	321,709	362,493	40,784	12.7%
Stockpile Evaluation	118,588	168,827	180,834	12,007	7.1%
Dismantlement/Disposal	31,402	27,371	35,414	8,043	29.4%
Field Engineering, Training & Manuals	4,089	6,229	6,700	471	7.6%
Production Support	131,754	144,930	152,890	7,960	5.5%
Subtotal, DSW	732,088	914,536	1,043,791	129,255	14.1%
Campaigns					
Primary Certification	28,197	47,322	55,530	8,208	17.3%
Dynamic Materials Properties	58,211	67,245	97,810	30,565	45.5%
Advanced Radiography	96,415	86,726	60,510	(26,216)	-30.2%
Sec Certif & Nuclear Systems Margins	41,914	43,100	47,270	4,170	9.7%
Enhanced Surety	36,181	34,040	34,797	757	2.2%
Weapons System Engineering Certification	14,135	15,336	24,043	8,707	56.8%
Nuclear Survivability	13,107	14,599	19,050	4,451	30.5%
Enhanced Surveillance	69,004	102,041	82,333	(19,708)	-19.3%
Adv. Design & Production Technologies	73,617	80,554	75,533	(5,021)	-6.2%
ICF Ignition & High Yield	466,073	430,986	467,943	36,957	8.6%
Advanced Simulation & Computing ..	636,663	747,090	738,032	(9,058)	-1.2%
Pit Manufacturing and Certification ..	107,271	144,588	128,545	(16,043)	-11.1%
Secondary Readiness	0	29,287	23,169	(6,118)	-20.9%
High Explosives Readiness	0	1,795	3,960	2,165	120.6%

	FY 2000	FY 2001	FY 2002	Change \$	Change %
Nonnuclear Readiness	0	1,339	12,204	10,865	811.4%
Materials Readiness	21,845	11,760	1,209	(10,551)	-89.7%
Tritium Readiness	168,418	165,391	124,475	(40,916)	-24.7%
Total, Campaigns	1,831,051	2,023,199	1,996,413	(26,786)	-1.3%
Readiness in Technical Base & Facilities					
Operations of Facilities	922,754	837,102	830,427	(6,675)	-0.8%
Program Readiness	60,246	150,153	188,126	37,973	25.3%
Special Projects	88,506	76,386	64,493	(11,893)	-15.6%
Material Recycle and Recovery	32,500	67,876	101,311	33,435	49.3%
Containers	5,833	14,363	8,199	(6,164)	-42.9%
Storage	19,627	20,841	10,643	(10,198)	-48.9%
Nuclear Weapons Incident Response	83,988	85,798	89,125	3,327	3.9%
Construction	99,298	161,258	154,664	(6,594)	-4.1%
Total, Readiness in Technical Base & Facilities	1,312,752	1,413,777	1,446,988	33,211	2.3%
Secure Transportation Asset					
Program	69,772	78,881	77,571	(1,310)	-1.7%
Program Direction	34,691	36,236	44,229	7,993	22.1%
Total, Secure Transportation Asset	104,463	115,117	121,800	6,683	5.8%
Safeguards and Security					
Operations and Maintenance	342,543	345,110	381,281	36,171	10.5%
Cyber Security	36,501	28,844	58,000	29,156	100.0%
Construction	14,744	20,710	9,600	(11,110)	-53.6%
Total, Safeguards and Security	393,788	394,664	448,881	54,217	13.7%
Weapons Program Direction	238,005	250,566	271,137	20,571	8.2%
SUBTOTAL	4,612,147	5,111,859	5,329,010	217,151	4.2%
Adjustments	(20,668)	(13,647)	0	13,647	-100.0%

	FY 2000	FY 2001	FY 2002	Change \$	Change %
Security Charge against Reimbursable Work	(27,974)	(28,923)	(28,985)	(62)	0.2%
TOTAL, WEAPONS ACTIVITIES	4,563,505	5,069,289	5,300,025	230,736	4.6%

Table 6
FY 2002 Construction Project Summary

(\$ in Thousands)

Project	Name	Site	TEC	Prior Year	FY 2002
02-D-107	Electrical Power Systems Safety, Communications and Bus Upgrades	NV	15,900	0	3,507
02-D-103	Project Engineering and Design	VL	19,880	0	9,180
02-D-101	Microsystems and Engineering Science Applications	SNL	51,000	0	2,000
01-D-800	Sensitive Compartmented Information Facility	LLNL	24,597	1,993	12,993
01-D-126	Weapons Evaluation Test Laboratory	PX	22,181	2,993	7,700
01-D-124	HEU Storage Facility	Y-12	119,961	17,710	9,500
01-D-103	Project Engineering and Design	VL	104,772	35,422	45,379
01-D-101	Distributed Information Systems Laboratory	SNL	35,500	2,295	5,400
00-D-107	Joint Computational Engineering Laboratory	SNL	28,870	8,478	5,377
00-D-105	Strategic Computing Complex	LANL	98,849	87,779	11,070
00-D-103	Terascale Simulation Facility	LLNL	88,900	6,859	5,000
99-D-106	Model Validation & Sys. Cert. Test Center	SNL	18,219	13,264	4,955
99-D-128	SMRI-Pantex Consolidation	PX	13,218	9,511	3,300
99-D-125	Replace Boilers & Controls	KC	14,271	13,971	300
99-D-127	SMRI-Kansas City Plant II	KC	122,201	54,201	22,200
99-D-104	Prot. of Real Prop.(Roof Reconstruct - PH II)	LLNL	19,886	7,671	2,800
99-D-103	Isotope Sciences Facilities	LLNL	17,367	8,956	4,400
99-D-132	Nuclear Materials Safeguards and Security Upgrade Project	LANL	61,143	38,960	9,600
98-D-123	SMRI-Tritium Facility Modernization & Consolidation	SRS	113,613	89,432	13,700
98-D-125	Tritium Extraction Facility	SRS	323,000	123,525	81,125
98-D-124	SMRI-Y-12 Consolidation	Y-12	24,800	17,150	6,850
97-D-123	Structural Upgrades, KC	KC	17,940	14,940	3,000
96-D-111	National Ignition Facility	LLNL	2,094,897	1,095,713	245,000

Project	Name	Site	TEC	Prior Year	FY 2002
96-D-102	Stockpile Stewardship Revitalization PH IV Storm Drains	SNL	15,374	9,474	2,900
	TOTAL				517,236

Table 7
Federal Staffing
(FTE'S)

	FY 2000	FY 2001	FY 2002	Change %
Albuquerque Operations Office				
Operations Office Staff	753	774	805	4%
Secure Transportation Asset	302	361	394	9.1%
Nevada Operations Office	232	232	234	0.9%
Oakland Operations Office	219	232	232	0.0%
Oak Ridge Operations Office	33	58	62	6.9%
Savannah River Operations Office	24	27	27	0.0%
Emergency Response and Management	79	79	79	0.0%
Headquarters	254	254	258	1.6%
TOTAL, WEAPONS ACTIVITIES	1,896	2,017	2,091	3.7%

Table 8
Direct Contractor Employment

The following table contains estimates of direct contractor employment funded by Defense Programs as reported by the M&O contractors and Federal Operations Offices through the Defense Programs Financial Information Variance Reporting (FIVR) system - M&O Employment, as of December 31, 2000.

	FY 2000	FY 2001	FY 2002
Kansas City - Honeywell	2,475	2,571	2,571
Pantex - BWXT Pantex	2,624	3,018	3,018
Los Alamos National Laboratory - University of California	4,630	4,792	4,792
Sandia National Laboratories - Lockheed Martin	3,790	3,873	3,925
Nevada - Bechtel/Nevada	1,608	1,583	1,583
Lawrence Livermore National Laboratory - University of California	3,865	4,085	4,085
Savannah River - Westinghouse	1,783	1,715	1,372
Y-12 -BWXT Y-12	3,454	3,468	3,468
TOTAL Defense Programs Direct Funded M&O contractors	24,229	25,105	24,814

Defense Programs Site Descriptions

Stockpile Stewardship activities are conducted predominantly at the three weapons laboratories, four production facilities, and the Nevada Test Site. The three weapons laboratories include: Lawrence Livermore National Laboratory in California and Los Alamos National Laboratory in New Mexico, both operated by the University of California; Sandia National Laboratories in California and New Mexico, operated by Lockheed Martin. The four production facilities include: Kansas City Plant in Kansas City, Missouri, operated by Honeywell; the Pantex Plant-Amarillo, Texas, operated by BWXT Pantex; the Y-12 Plant-Oak Ridge, Tennessee, operated by BWXT Y-12; and the Savannah River Site-Aiken, South Carolina, operated by Westinghouse. The Nevada Test Site is operated by Bechtel/Nevada, Inc. Funding is also provided to the University of Rochester, the Naval Research Laboratory, and General Atomics through the Inertial Confinement Fusion program.

Kansas City Plant

The Kansas City Plant is located on 141 acres of the Bannister Federal Complex within the city limits of Kansas City, Missouri, about 12 miles south of downtown. The Kansas City Plant is the main facility in the nuclear weapons complex for the manufacture and procurement of nonnuclear components for nuclear weapons, including electrical, electronic, electromechanical, mechanical, plastic, and nonfissionable metal. The broad range of components and devices procured from U.S. industry is supported by an extensive system to qualify suppliers and accept products.

The Kansas City Plant provides a broad range of standard industrial processes (e.g., plating, machining, metal deposition, molding, painting, heat treating, and welding), some of which are uniquely

tailored to meet special weapon reliability requirements. The Kansas City Plant evaluates components and subsystems removed from the stockpile for reuse or testing. The plant is participating with the other plants and laboratories in the Enhanced Surveillance Campaign to predict component and material lifetimes, critical elements of the Stockpile Life Extension Program, and in the Advanced Design and Production Technologies Campaign to develop modular, scalable, and environmentally sound manufacturing processes.

Lawrence Livermore National Laboratory

The Lawrence Livermore National Laboratory (LLNL), was established as a nuclear weapons design laboratory in 1952. It is located on 1.3 square miles in Livermore, California. It has an auxiliary testing range located on 8 square miles situated about 18 miles east of the main site. LLNL's primary mission is to support DOE's Stockpile Stewardship Program. The laboratory brings to this mission extensive experience in supercomputing and laser technology as well as a broad range of world-class science and engineering capabilities, including nuclear science and technology and advanced sensors and instrumentation. LLNL also supports high explosive safety and assembly/disassembly operations at the Pantex Plant, and oversight of uranium and case fabrication and processing technology with support from the Y-12 Plant and LANL. LLNL has demonstrated successes in assembling multi-disciplinary approaches, applying expertise in advanced defense technologies, energy, environment, biosciences, and basic science, to complex national issues.

Among the major specialized facilities supporting LLNL's programmatic efforts are the ASCI Blue Pacific computer system for high-fidelity weapon simulation, the High Explosive Applications Facility

for energetic materials research, and the Flash X-ray Facility for hydrodynamic tests. The Nova laser, previously used for inertial fusion and weapon physics research, was shut down on May 27, 1999, as planned, pending transition to National Ignition Facility operations. In the interim, the Omega Laser at the Laboratory for Laser Energetics at the University of Rochester will continue to provide experimental support to the stockpile stewardship program.

New projects are underway to prepare LLNL's capabilities for its critical responsibilities to maintain the nuclear deterrent without nuclear testing. The NIF has been under construction since June 1997 and will be the world's largest and most powerful laser facility when completed. The Terascale Simulation Facility began design in FY 2000 and will house the ASCI Option White Supercomputer.

Los Alamos National Laboratory

The Los Alamos National Laboratory, established as a nuclear weapons design laboratory in 1943, is located on about 28,000 acres adjacent to the town of Los Alamos, New Mexico, which is approximately 25 miles northwest of Santa Fe.

The core competencies at LANL supporting the Stockpile Stewardship Program include theory, modeling and simulation, and high-performance computing to model a broad range of physical, chemical, and biological processes; complex experiments and measurements; nuclear and advanced materials; and nuclear weapons science and technology including the physics of nuclear weapons design and large-scale calculations of weapons phenomena. LANL also possesses unique capabilities in neutron science required for stockpile stewardship and enhanced surveillance and shares with LLNL the responsibility for the safety, reliability, and performance of the Nation's nuclear weapons. Other activities include plutonium fabrication and processing technology development; oversight of tritium reservoir surveillance, testing,

and tritium recycle technology; support of high explosive science focused on safety, reliability and performance; detonator development, production, and surveillance; beryllium fabrication; neutron tube target loading, and pit component production and surveillance.

Among the major specialized facilities at LANL are the TA-55 Plutonium Facility for surveillance of plutonium "pits" and plutonium pit manufacturing, actinide research, and nuclear waste research and the Los Alamos Neutron Scattering Center user facility for supporting advanced materials science, nuclear science and particle-beam accelerator technology in addition to weapons surveillance. The Dual Axis Radiographic Hydrodynamic Test Facility is expected to be completed at the end of FY 2002; the first axis became operational for experimental use in FY 1999. In addition, the Strategic Computing Complex will be operational in early FY 2002 to house the next generation 30 TeraOps ASCI supercomputer.

A plutonium pit manufacturing mission is being reestablished at LANL to replace units destructively tested in the surveillance program and to replace pits in the future should surveillance indicate a problem with a pit. LANL also had a major role in DOE's backup technology, accelerator production, for a new tritium production source.

Nevada Test Site

The Nevada Test Site (NTS), established in 1950, encompasses approximately 867,000 acres in Nye County in southern Nevada, about 65 miles northwest of Las Vegas. Since the U.S. Nuclear Testing Moratorium Act went into effect in early October 1992, no nuclear tests have been conducted by the United States.

The core mission at the NTS is to maintain the capability to conduct an underground nuclear test within 2-3 years of any such request by the President. To fulfill this mission, the necessary NTS

infrastructure, facilities, and technical personnel are supported through exercises and experiments. Subcritical experiments sponsored by the nuclear weapons design laboratories (LANL and LLNL) serve a dual purpose of providing experimental data and exercising nuclear testing personnel skills; these experiments are the primary basis of maintaining nuclear test readiness.

Pantex Plant

The Pantex Plant is located on approximately 10,177 acres about 17 miles northeast of Amarillo, Texas. Pantex is the only facility in the complex for quantity assembly/disassembly of nuclear weapons.

Plutonium pits from dismantled weapons are stored at Pantex. The site has been designated as the permanent location for strategic reserve pit storage and the interim storage location for surplus pits resulting from dismantlement activities and the planned closure of the Rocky Flats Site.

Pantex also fabricates high explosives used in nuclear weapons and performs modifications and surveillance of nuclear weapons scheduled to remain in the enduring stockpile.

Pantex is participating with the other plants and the laboratories in the Enhanced Surveillance Campaign and in the Advanced Design and Production Technologies Campaign.

Starting in 1999, the assembly/disassembly and the high explosives fabrication facilities are being appropriately downsized to support the future stockpile. By approximately 2005, these facilities will be about two-thirds their current size. This downsizing will involve modifications and consolidations within the existing footprint.

Sandia National Laboratories

Sandia National Laboratories (SNL) are located on about 18,000 acres on the Kirtland Air Force Base military reservation about 6.5 miles east of downtown Albuquerque, New Mexico and has

additional smaller facilities in Livermore, California, and in Tonopah, Nevada.

SNL is responsible for the nonnuclear components and systems engineering for all nuclear weapons, and works with the DoD in the areas of weapon requirements, system design, logistics, surveillance, training, and dismantlement. SNL manufactures certain nonnuclear components including neutron generators and is capable of providing an assured source of radiation hardened electronics. SNL provides unique capabilities in advanced manufacturing technology, microelectronics, and photonics and maintains distinctive competencies in engineered materials and processes, computational and information sciences, engineering sciences, and pulsed-power technology. Distributed Computing and Distance Computing, a component of the ASCI program, will originate at SNL.

Among the major specialized facilities at SNL are a Microelectronics Development Laboratory, a Combustion Research Facility, an Advanced Manufacturing Processes Laboratory for rapid prototyping and assessing quality and reliability, an Intelligent Systems and Robotics Center supporting intelligent and agile manufacturing, and Pulsed Power Accelerators for testing and development of defense components.

The Joint Computational Engineering Laboratory and the Distributed Information Systems Laboratory will provide new research facilities to develop and implement distributed information systems.

Savannah River Site

The Savannah River Site (SRS) occupies approximately 198,000 acres about 12 miles south of Aiken, South Carolina, on the state line with Georgia. Augusta, Georgia is about 16 miles northwest of the site. The primary mission at SRS is now environmental remediation of the former special nuclear materials infrastructure. SRS processes and stores nuclear materials in support of the national

defense and nuclear non-proliferation activities, including legacy material disposition. The site also develops and deploys technologies to improve the environment and treat nuclear and hazardous wastes.

SRS is NNSA's center for the supply of tritium to the enduring nuclear weapons stockpile. SRS is the nation's only facility for recycling and reloading of tritium from the weapons stockpile, as well as the unloading and surveillance of tritium reservoirs. A new tritium extraction facility will be constructed at SRS to extract new tritium that will be created by TVA's light-water reactors. SRS tritium facilities are in the process of being upgraded and consolidated in order to continue to process the nation's tritium.

Y-12 Plant

The Y-12 Plant is located on about 800 acres of the almost 35,000-acre Oak Ridge Reservation located about 20 miles west of Knoxville, Tennessee. The Y-12 Plant maintains the only capability in the nuclear weapons complex to fabricate quantity uranium and lithium components and parts for nuclear weapons, including secondaries and radiation cases. All current nuclear weapons have components produced at Y-12.

The Plant has historically stored highly enriched uranium and lithium for the nuclear weapons complex and is now designated the permanent location for the storage of strategic reserves of these materials. The Y-12 Plant also evaluates components and subsystems returned from the stockpile, dismantles nuclear weapons secondaries returned from the stockpile and processes recovered special nuclear materials for storage.

Y-12 is participating with the other plants and the laboratories in the Enhanced Surveillance Campaign to predict component and material lifetimes, a critical element of the weapon refurbishment programs, and in the Secondary Readiness and Advanced Design and Production Technologies Campaigns.

All Other Sites

Stockpile Stewardship activities are also conducted at several other sites. Activities which support the Tritium Readiness Campaign have been administered by the **Chicago Operations Office** and conducted at the **Pacific Northwest Laboratory**. Recovery of actinide materials and fabrication of californium sources under the Materials Readiness Campaign take place at the Oak Ridge National Laboratory. Inertial fusion research is conducted at the **Naval Research Laboratory** through the use of its Krypton-fluoride Nike laser. Nike's capabilities are particularly useful for defining beam smoothness requirements for direct drive laser fusion ignition. In addition, the laboratory has strong capabilities in code development and atomic physics. The **University of Rochester's** Laboratory for Laser Energetics in Rochester, New York, operates its 60-beam glass laser, Omega, primarily for research on direct drive laser fusion. In addition, the Omega facility is used to field weapons physics experiments by scientists from Lawrence Livermore National Laboratory and Los Alamos National Laboratory. With the shutdown of the Nova laser at LANL, Omega will be used more extensively, pending transition to NIF operations. **General Atomics**, located in La Jolla, California, is the current contractor for supplying the national laboratories with inertial confinement fusion targets for experimental campaigns. The Secure Transportation Asset is managed and operated by the **Albuquerque Operations Office**, including allocating the Asset's personnel and physical resources to meet the Department's transportation requirements; hiring, training, and deployment of the nuclear materials couriers; maintaining the transporter fleet of tractors and trailers; and ensuring the Asset is equipped and managed to meet the

Department's requirements for material security and courier and public safety.

**Appropriations Not Authorized by Law
Defense Programs
(Dollars in thousands)**

Activity	Title of Authorizing/Appropriations Legislation	Last Year of Authorization	Authorization Level in the Last Year of Authorization	Appropriation in Last Year of Authorization
Department of Energy				
<i>Weapons Activities</i>	<i>Floyd D. Spence National Defense Authorization Act for FY 2001</i>	<i>2001</i>	<i>\$4,840,289</i>	
	<i>Energy and Water Development Appropriations Act, 2001</i>			<i>\$5,015,186</i>
Directed Stockpile Work - Stockpile R&D			249,300	255,706
Stockpile Maintenance			266,994	276,958
Stockpile Evaluation			162,710	167,221
Campaigns Dynamic Materials Properties Campaign			64,408	70,018
Advanced Radiography			43,000	45,760
Enhanced Surveillance			89,651	103,049
Secondary Readiness			15,000	19,935
Readiness in Technical Base and Facilities Material Recycle and Recovery			22,018	29,868
Containers			7,876	11,844
Construction 01-D-103, PE&D, VL			14,500	35,422

Activity	Title of Authorizing/Appropriations Legislation	Last Year of Authorization	Authorization Level in the Last Year of Authorization	Appropriation in Last Year of Authorization
Safeguards and Security O&M			not separately authorized	361,055
Construction			not separately authorized	20,710