Readiness in Technical Base and Facilities

Program Mission

The Readiness in Technical Base and Facilities (RTBF**)** Program focus is on providing state-of-the-art facilities and infrastructure supported by advanced scientific and technical tools to support the National Nuclear Security Administration (NNSA) Nuclear Weapon Stockpile operational and mission requirements. To accomplish this, the RTBF Program provides the physical and operational infrastructure at the eight NNSA sites, three national weapons laboratories, four production sites, and the Nevada Test Site. At the national laboratories, the program funds only the specific facilities that are required to conduct the scientific, research, development, and testing activities of the Stockpile Stewardship Program. Within Weapons Activities, the RTBF direct funding accounts for over twenty five percent (25%) of the total annual budget. The RTBF Program must respond to the overall weapons complex needs continuously seeking operational efficiencies, adding or modifying facilities and equipment, and creating new capabilities to support evolving requirements and workload priorities. The RTBF must deal with the cost and complexity of the enormous body of regulations, oversight, and assessments that are inherent to a high technology research, development, production, and testing complex. The RTBF Program also funds the NNSA's share of program-related mission costs of the Government Industries Data Exchange Program (GIDEP) and the Quality Assurance Working Group (QAWG).

The RTBF includes seven Subprograms:

- Operations of Facilities, which provides for the NNSA share of the cost to maintain and operate its facilities in a state of readiness to execute programmatic tasks
- Program Readiness, which supports select activities common to two or more Directed Stockpile Work (DSW), Campaigns, or activities that are essential to achieving the objectives of the Stockpile Stewardship Program, including the nuclear test readiness program
- Special Projects, which includes activities that require special controls, have special visibility, or do not fit easily into another category
- Material Recycle and Recovery, which provides for the recycle and recovery of plutonium, enriched uranium, and tritium from fabrication and assembly/disassembly operations
- Containers, which provides for the specialized containers used for weapon/component movement and their certification
- Storage, which provides for receipt, storage, and inventory of nuclear and nonnuclear materials, highly enriched uranium, enriched lithium, and weapon components from dismantled weapons.
- Nuclear Weapons Incident Response, which provides funding for emergency management and response activities that ensure a central point of contact and an integrated response to emergencies requiring Departmental assistance.

A construction overview for infrastructure projects is also included.

Program Strategic Performance Goal

NS 4-2: State-of-the-art facilities and infrastructure, supported by advanced scientific and technical tools, to meet operational and mission requirements.

Performance Indicators

Percentage of scheduled days that mission essential facilities are actually available to support program work
Number of reportable accidents per 200,000 hours worked
Number of construction projects initiating engineering designs (Critical Decision 1)
Number of construction projects starting construction (Critical Decision 3)
Number of construction projects completed (Critical Decision 4)
Percentage increase of mission essential facilities rated as "good" or better in the facility information
Percentage of critical skills positions filled with trained and qualified persons
Number of completed activities necessary for achieving an enhanced test readiness posture.
Amounts of plutonium, highly enriched uranium, and tritium recovered or recycled
Number of pits repackaged per year

Annual Performance Results and Targets

FY 2002 Results	FY 2003 Targets	FY 2004 Targets
Developed and implemented an Integrated Construction Program Plan to list and prioritize facility construction and upgrades.	Complete facility construction and upgrade projects as scheduled in the NNSA Integrated Construction Program Plan and the FY 2003 deliverables list; meet scheduled Critical Decision points.	Initiate designs (CD-1) on 7 construction projects. Initiate construction (CD-3) on 8 projects. Complete construction (CD-4) on 9 projects.
Ensured that manufacturing processes were available to support scheduled requirements.	Ensure that manufacturing processes were available to support scheduled requirements.	Increase the number of enduring mission essential facilities rated at "good" or better in FIMS by 5% relative to the FY2003 baseline.
Achieved 80% or better facility availability, based on planned availability.	Achieve 80% or better facility availability, based on planned availability.	Mission essential facilities available 90% or more of scheduled days.
Maintained facilities in a safe & environmentally sound condition.	Maintain facilities in a safe & environmentally sound condition.	
Maintained utility systems reliability greater than 99.5%.	Maintain utility systems reliability greater than 99.5%.	

FY 2002 Results	FY 2003 Targets	FY 2004 Targets
Met priority site maintenance requirements to maintain the readiness of the Nuclear Weapons Complex sites.	Meet directive scheduled priority site maintenance requirements to maintain the readiness of the Nuclear Weapons Complex sites.	Implement FY2003 planning in RTBF to achieve NNSA goals for stabilizing deferred maintenance in FY2005.
Stabilized and package plutonium-containing materials and plutonium-contaminated highly enriched uranium component parts, as scheduled.	Stabilize and package plutonium-containing materials and plutonium-contaminated highly enriched uranium component parts, as scheduled.	Repackage 2,400 pits in compliance with the DNFSB recommendations 99-1.
Developed a requirements-based Materials Stewardship Program Plan to guide life cycle management of Uranium, Plutonium, and other nuclear/specialty materials.	Implement the Materials Stewardship Program Plan; provide Uranium for weapons Life Extension Programs; begin Beryllium supply strategy implementation; stabilize and package Plutonium-containing materials for long-term storage; and stabilize and package plutonium-contaminated highly enriched uranium components/parts.	Recover and recycle material to meet the current directive schedule requirements. Recover at least $2.5M in precious metals from contaminated and non-contaminated materials and scrap.
Attained lost time injury rate below DOE average of 0.87.	Attain lost time injury rate below DOE average.	Reportable accidents per 200,000 hours of work are below the National Bureau of Labor Standards national average.
Met targets included in workforce site plans and contracts for hiring and retaining critical.	Meet targets included in workforce site plans and contracts for hiring and retaining critical personnel; minimize the number of vacant critical skill positions.	Achieve 80% of planned critical hires; maintain 90% of planned staffing in critical positions; and complete 90% of required training and qualifications of critical personnel.
Maintained the ability to conduct underground nuclear testing, if necessary, consistent with the Administration's 24-36 month policy requirement.	Maintain the ability to conduct underground nuclear testing, if necessary, consistent with the Administration's 24-36 month policy requirement; as directed and funded, implement an enhanced test readiness posture.	Complete five scheduled activities and Maintain 24-36 posture and transition to 18-month test readiness posture.

FY 2002 Results	FY 2003 Targets	FY 2004 Targets
Completed FY 2002 Ten Year Comprehensive Site Plans, as scheduled.	Complete FY 2003 Ten Year Comprehensive Site Plans, as scheduled.	Complete FY 2004 Ten Year Comprehensive Site Plans, as scheduled.
Initiated scheduled building deactivation activities.	Initiate scheduled building deactivation activities.	Initiate scheduled building deactivation activities.
Completed assessment of Los Alamos National Laboratory facilities for long-term storage of nuclear materials.		

Significant Program Shifts

As advocated in the Nuclear Posture Review (NPR), DoD and the NNSA expect to refine test scenarios and evaluate cost/benefit tradeoffs to determine, implement and sustain the optimum test readiness time that supports the New Triad. In FY 2002, an Enhanced Test Readiness Cost Study was completed. This study identified the work necessary to achieve an 18-month test readiness posture as well as additional activities necessary for maintaining the current 24- to 36-month posture. The DoD and the NNSA agreed to transition to an 18-month test readiness posture while continuing to review the optimum posture. The actions necessary for moving toward an 18-month posture are expected to begin upon completion of the final FY 2003 appropriation.

During FY 2002, an NNSA Integrated Construction Program Plan (ICPP) was developed by the NNSA Offices of Defense Programs and Facilities and Operations. The ICPP is a planning and prioritization document that integrates the line item construction plans included in the sites' Ten Year Comprehensive Site Plans with the Future Years Nuclear Security Program (FYNSP) in support of NNSA's Planning, Programming, Budgeting and Evaluation (PPBES) process. Similarly, action was taken to assure that a coordinated approach to building maintenance was in place to support the complex. The FY 2004 RTBF request reflects the results of these new planning, prioritization and coordination efforts. The ICPP resulted in some changes to planned construction activities, and as a result, a number of planned reallocations from the original FY 2003 request will be proposed, if necessary, as part of a reprogramming action after enactment of the FY 2003 appropriation.

Also in FY 2002, building 3019 at the Oak Ridge National Laboratory was transferred to the Nuclear Energy Program and the Materials Readiness Campaign was closed out. Residual capability requirements for FY 2004 are now included in RTBF.

During the Programming Phase of the FY 2004 process, NNSA performed a review of inconsistencies between sites in the way activities were budgeted and accounted for. This review resulted in a decision to move some activities between DSW, Campaigns, and Readiness in Technical Base and Facilities. Details on those moves affecting RTBF follow. At Y-12, funding was moved from Program Readiness to Production Support and was associated with continued capability of manufacturing processes, manufacturing systems support and maintenance, and product quality assurance base processes. In

addition, funding for modernization efforts at Y-12 was moved from the Stockpile Readiness Campaign to Operations of Facilities. At SNL, funding was moved from Operations of Facility and Program Readiness into Production Support for process engineering, materials management, tooling, information systems, test engineers and technicians, and industrial engineering supporting Building 870. Comparabilities have been made to the FY 2002 and FY 2003 columns to reflect these changes.

There is no FY 2004 funding requested for the Nevada Center for Counterterrorism due to the uncertainty about the ultimate sponsor, scope, and size of the mission for this facility.

Funding Profile

(dollars in thousands)

Readiness in Technical Base & Facilities (RTBF)	FY 2002 Comparable Appropriation	FY 2003 Request	FY 2004 Request	$ Change	% Change
Operations of Facilities	896,254[a]	933,893[a]	972,773	38,880	4.2%
Program Readiness	97,973[b]	120,411[b]	131,093	10,682	8.9%
Special Projects	35,896	37,744	42,975	5,231	13.9%
Material Recycle & Recovery	92,826	98,816	76,189	-22,627	-22.9%
Containers	9,957	17,721	16,006	-1,715	-9.7%
Storage	7,652	14,593	11,365	-3,228	-22.1%
Nuclear Weapons Incident Response	102,138[c]	83,755[c]	89,694	5,939	**7.1%**

[a]Includes comparability adjustments for the following: transfer to engineering Campaigns construction activities Other Project Costs (OPC's) for Project 01-D-108 (MESA) to more closely align OPC's with the project and programmatic work it supports (FY 2002: -$3,600,000; FY 2003: -$4,200,000); transfer to DSW Production Support (FY 2002: -$28,100,000; FY 2003: -$28,615,000) and transfer from RTBF Program Readiness (FY 2002: +$10,575,000; FY 2003: +8,332,000) for realignment of DSW and RTBF to ensure consistencies among "production" sites; transfer from Stockpile Readiness Campaign of "Modernize Manufacturing Facilities" which support efforts to revitalize the Y-12 plant's long-term readiness posture (FY 2002: +19,765,000; FY 2003: +$22,368,000); and transfer of building 3019 at ORNL to the Nuclear Energy Program (FY 2002: -$13,391,000; FY 2003: -$13,912,000).

[b]Includes comparability adjustments for the transfer to DSW Production Support (FY 2002: -$81,857,000; FY 2003: -$79,346,000) and to RTBF Operations of Facilities (FY 2002: -$10,575,000; FY 2003: -$8,332,000) for realignment of DSW and RTBF to ensure consistencies among "production" sites.

[c]Includes a comparability adjustment for the transfer of Continuity of Operations (COOP), the Continuity of Government (COG), and the Emergency Operations Center (EOC) program funding to the Office of Security (SO) (FY 2002: -$7,185,000; FY 2003: -$7,245,000) and the transfer of funding for the Biological Aerosol Safety Information System from SO (FY 2002 +$1,000,000).

(dollars in thousands)

Readiness in Technical Base & Facilities (RTBF)	FY 2002 Comparable Appropriation	FY 2003 Request	FY 2004 Request	$ Change	% Change
Construction	134,118[d]	195,346[d]	273,376	78,030	39.9%
Total, Readiness in Technical Base & Facilities	**1,376,814**	**1,502,279[e]**	**1,613,471**	**111,192**	**7.4%**

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

[d]Includes a comparability adjustment for the transfer to Engineering Campaigns Construction activities project 01-D-108, Microsystem and Engineering Science Applications (MESA) to more closely align the project with the programmatic work it supports (FY 2002: -$63,500,000; FY 2003: -$75,000,000).

[e]Pending the enactment of a final FY 2003 appropriation, this amount reflects the FY 2003 Request; it does not include reprogrammings from prior year funding, which were requested in FY 2002, but not approved until December 2002. It also does not include funding proposed for reallocation as part of a reprogramming action after enactment of the FY 2003 appropriation.

Funding by Site

(dollars in thousands)

Readiness in Technical Base & Facilities	FY 2002	FY 2003	FY 2004	$ Change	% Change
Chicago Operations Office					
Argonne National Laboratories (ANL) . .	598	403	659	256	63.5%
Brookhaven National Laboratory (BNL) .	1,195	765	621	-144	-18.8%
Total, Chicago Operations Office	1,793	1,168	1,280	112	9.6%
Idaho Operations Office					
Idaho Operations Office	445	345	601	256	74.2%
Idaho National Engineering and Environmental Laboratory (INEEL)	1,374	0	0	0	N/A
Total, Idaho Operations Office	1,819	345	601	256	74.2%
Kansas City Site Office					
Kansas City Plant (KCP)	125,722	141,474	136,786	-4,688	-3.3%
Livermore Site Office					
Lawrence Livermore National Laboratory (LLNL)	94,748	83,283	72,635	-10,648	-12.8%
Los Alamos Site Office					
Los Alamos National Laboratory (LANL) .	320,183	340,038	411,285	71,247	21.0%
Nevada Site Office					
Nevada Site Office	145,146	145,154	141,729	-3,425	-2.4%
NNSA Service Center					
NNSA Service Center (all other sites)	22,518	15,881	15,891	10	0.1%
Oakland Site Office					
Oakland Site Office	360	335	591	256	76.4%
Oak Ridge Operations Office					
Oak Ridge Operations Office	12,258	14,880	13,804	-1,076	-7.2%
Oak Ridge National Laboratory	803	328	322	-6	-1.8%
Y-12 National Security Complex (Y-12) .	206,901	246,633	228,553	-18,080	-7.3%
Total, Oak Ridge Operations Office	219,962	261,841	242,679	-19,162	-7.3%
Pantex Site Office					
Pantex Plant (PX)	123,138	123,472	136,944	13,472	10.9%

(dollars in thousands)

Readiness in Technical Base & Facilities	FY 2002	FY 2003	FY 2004	$ Change	% Change
Richland Operations Office					
Richland Operations Office	376	320	576	256	80.0%
Pacific Northwest National Laboratory	75	25	25	0	0.0%
Total, Richland Operations Office	451	345	601	256	74.2%
Sandia Site Office					
Sandia National Laboratories (SNL)	206,911	214,848	263,811	48,963	22.8%
Savannah River Operations Office					
Savannah River Operations Office	5,116	307	563	256	83.4%
Savannah River Site (SRS)	93,152	103,032	92,236	-10,796	-10.5%
Total, Savannah River Operations Office	98,268	103,339	92,799	-10,540	-10.2%
Washington Headquarters					
Washington Headquarters	15,795	70,756	95,839	25,083	35.5%
Total, RTBF	**1,376,814**	**1,502,279**	**1,613,471**	**111,192**	**7.4%**

Site Description

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 parts. 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 furnishes 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.

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, Site 300, 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 National Security Complex 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 at Livermore, the Superblock Complex supports research and development on plutonium, highly enriched uranium, and tritium. The High Explosive Application Facility is a state-of-the-art explosives research facility. High Explosive Hydrotest bunkers on Site 300 are utilized for fundamental research into the physical and engineering properties of various materials used in nuclear and conventional weapons. Physics facilities include a pair of two-stage gas guns to measure materials properties subject to dynamic high pressure in targets of interest to Defense Programs, and a electron linear accelerator generates secondary beams of positrons in a tungsten target that are subsequently transported and slowed down for materials analysis. Engineering test facilities provide necessary thermal, vibration, shock, and combined environments to support weapon hardware and development activities. The National Ignition Facility is funded under the Inertial Confinement Fusion Ignition and High Yield Campaign and computing facilities under the Advanced Simulation and Computing Campaign rather than in the RTBF section.

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 and the Sandia National Laboratories (SNL), 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 Science Center user facility for supporting advanced materials science, nuclear science and particle-beam accelerator technology, in addition to weapons surveillance. The first axis of the Dual Axis Radiographic Hydrodynamic Test facility became operational for experimental use in FY 1999; the second axis is currently approaching final acceptance testing and close-out of the project. The TA-18 Facility supports nuclear criticality research addressing national nuclear issues, training of various national groups in the use of nuclear instrumentation for assay and safe handling, and supports development and calibration of nuclear radiation measurement equipment. Los Alamos Engineering Facilities provide a wide range of support infrastructure to integrate engineering tests, high explosives, assembly and storage, and machine shop functions.

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 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 if directed by the President. To fulfill this mission, the necessary NTS infrastructure, facilities, and technical personnel are supported through stewardship experiments and exercises, if needed.

Among the major specialized facilities at NTS is the Device Assembly Facility. Device Assembly Facility operations include assembly, disassembly, modification, staging, transport, and testing of nuclear components and nuclear explosive devices; and preparation of sub-critical experiment assemblies. Device Assembly Facility activities may also include maintenance, repair, retrofit and surveillance of existing or damaged nuclear explosive devices. The U1a complex is comprised of 17 surface support buildings and trailers, and an extensive series of underground drifts and experiment alcoves supporting Laboratory sub-critical experiments. The Joint Actinide Shock Physics Experimental Research Facility is a two-stage gas gun facility in Area 27 that supports equation-of-state experiments with special nuclear materials. The Big Explosive Experiment Facility is an aboveground high-explosives test bed for weapons physics experiments, shaped charge development, and render-safe technologies.

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. Starting in 1999, the assembly/disassembly and the high explosives fabrication facilities are being consolidated and modernized to support the future stockpile. This downsizing will involve modifications and consolidations within the existing footprint, yielding a more efficient plant operation.

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, with 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.
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Among the major specialized facilities at SNL are a Microelectronics Development Laboratory, an Advanced Manufacturing Processes Laboratory for rapid prototyping and assessing quality and reliability, a Robotics Manufacturing Science and Engineering Laboratory supporting intelligent and agile manufacturing, pulsed power accelerators for high energy density physics research and for testing and development of defense components, and the Neutron Generator Facility for the production of war-reserve neutron generators. The Z pulsed power facility is utilized for weapons physics, radiation effects, and Inertial Confinement Fusion and pulsed power technology experiments.

The Joint Computational Engineering Laboratory (JCEL), the Distributed Informations Systems Laboratory (DISL), and the Microsystems and Engineering Sciences Applications (MESA) Complex are funded in the Advanced Simulation and Computing Campaign and the Engineering Campaigns.

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 is being constructed at SRS to extract new tritium that will be created by TVA's light-water reactors starting in November 2003. SRS tritium facilities are in the process of being upgraded and consolidated, producing a more efficient plant operation and to continue to process the nation's tritium.

Y-12 National Security Complex

The Y-12 National Security Complex is located on about 800 acres of the almost 35,000-acre Oak Ridge Reservation located about 20 miles west of Knoxville, Tennessee. Activities conducted at the Y-12 National Security Complex include manufacturing and reworking nuclear weapon components, dismantling nuclear weapon components returned from the national arsenal, serving as the nation's storehouse of special nuclear materials, and providing special production support to other programs.

The Y-12 National Security Complex will be modernized and critical production capability will be restored or replaced to support mission requirements. This involves virtually all new processing, machining and inspection equipment required for planned Life Extension Programs.

Operations of Facilities

Mission Supporting Goals and Measures

The Operations of Facilities subprogram of Readiness in Technical Base and Facilities (RTBF) includes National Nuclear Security Administration (NNSA's) share of the cost to operate and maintain "NNSA-owned" programmatic facilities in a state of readiness, at which each facility is operationally ready to execute programmatic tasks identified in Campaigns and Directed Stockpile Work (DSW). This category includes NNSA's share of all costs necessary to operate the physical infrastructure and facilities in a safe, secure, reliable, and “ready for operations” manner; and to sustain a defined state of readiness at all needed facilities. These facility-specific activities include, but are not limited to, maintenance; utilities; environment, safety and health; efforts to address some of the Defense Nuclear Facilities Safety Board (DNFSB) concerns; and implementation of rules (such as the new Safety Bases Rule 10CFR830, Nuclear Safety Management).

Infrastructure support is also included under Operations of Facilities. This supports day to day research and production; the Facilities and Infrastructure Recapitalization Program resolves backlog maintenance. These include: facility-related costs which are not associated with the ongoing operations of facilities such as conceptual design reports, and other project related costs for line items, National Environmental Policy Act (NEPA) activities, institutional capital equipment and general plant projects; Stockpile Management Restructuring Initiative which includes operating support costs related to production facility downsizing such as component rebuilds, process transfer/downsizing, qualification and process prove-in, and facility shutdown; and facility startup/standby/Decommissioning & Decontamination (D&D) which includes costs associated with maintaining facilities in a standby status for possible further use, or decontaminating and decommissioning.

Subprogram Goal

Program facilities and infrastructure, operated and maintained in a safe, secure, efficient, reliable and compliant condition.

Performance Indicators

Percentage of scheduled days that mission essential facilities are actually available to support program work
Number of Reportable Accidents/200,000 hours work
Percentage increase of mission essential facilities rated as “good” or better in the Facility Information Management System (FIMS)
Annual cost of operating mission essential facilities
Percentage of critical skills positions filled with trained and qualified persons
Number of environmental permit violations or other adverse actions received from environmental regulators
Achievement of full compliance with applicable Nuclear Safety Rules.

Annual Performance Results and Targets

FY 2002 Results	FY 2003 Targets	FY 2004 Targets
All facilities available to support the Stockpile Stewardship Program in a safe, secure, environmentally sound manner. Completed Pre-Start Review and Facilities Acceptance of Mechanical Welding and Electronic Final Assembly areas (SMRI). Made substantial progress towards achieving April 2003 due date with 10CFR830 Nuclear Safety Rule. Met Defense Nuclear Facility Safety Board 94-1 milestones. Integrated flash radiography x-ray beam into Contained Firing Facility containment chamber and commenced hydrotest operations at Livermore. At Kansas City, completed upgrade of Manufacturing Support Building Environmental Lab design. Completed Chemistry & Metallurgy Research upgrade project at Los Alamos. Finished construction and commenced operations in the Strategic Computing Complex at Los Alamos.	Complete Draft Ten Year Comprehensive Site Plans for FY 2003 in June 1, 2002; complete Final Drafts for FY 2003 by September 30, 2002. Achieve twenty-five percent (25%) better than national average for facility safety, with no facility more than the national average Achieve a rating of no program facilities less than "adequate" as reported in the Facilities Information Management System. Achieve eighty percent (80 %) or better facility/activity planned milestones completed per quarter. Achieve ninety percent (90%) or better program facility availability per quarter of planned operational days. Achieve two percent (2%)of planned annual Operations of Facilities costs saved through overall efficiencies and applied to routine, predictive, and/or preventive maintenance and improvement projects within the program. Achieve ninety percent (90%) or better overall staffing levels.	Mission essential facilities available 90% or more of scheduled days. Better the national average for number of reportable accidents/200,000 hours of work, using National Bureau of Labor Standards data. Increase the number of enduring mission essential facilities rated at "good" or better in the Facilities Information Management System by 5% relative to the (FY 2003) baseline. Implement FY 2003 planning in RTBF to achieve NNSA goals for achieving best industry practice for deferred maintenance by FY 2009. Operate all mission essential facilities within the Future-Years Nuclear Security Program (FYNSP) target, while meeting other program targets. Achieve 90% of planned critical skills hires. Maintain 90% of planned staffing in critical positions. Complete 90% of required training and qualifications of critical personnel.

Complete U1a/U1h underground connection at the Nevada Test Site. Designed and procured U1h conveyance system less support systems at the Nevada Test Site. Developed JASPER Phase 2 diagnostics at the Nevada Test Site. Attained lost time injury rate below DOE average of 0.87. Achieved successful start up of High Explosives Synthesis Facility (11-055) at Pantex. Completed Joint Test Assembly (JTA) handling improvements.	Submit NNSA Nuclear Safety Authorization Basis upgrades to meet the 10CFR830. April 2003 due date (all sites with nuclear facilities). Complete scheduled Upgrade Chillers - West Boiler house design. TA-55: Complete Type A corrective action plan milestones. Maintain lost time injury rate below the FY 2002 DOE average. Maintain availability of facilities as required to support accomplishment of DSW and Campaign objectives in a safe and environmentally sound manner. Completion of NNSA Safety Authorization Basis Upgrade efforts to support timely and effective implementation of 10 CFR 830.	Receive no violations/adverse actions from environmental regulators. No significant nuclear safety non-compliance.

Funding Schedule

(dollars in thousands)

	FY 2002	FY 2003	FY 2004	$ Change	% Change
Lawrence Livermore National Laboratory	42,026	42,401	42,716	315	0.7%
Los Alamos National Laboratory	291,602	306,874	309,151	2,277	0.7%
Sandia National Laboratories	131,485[a]	146,665[a]	148,479	1,814	1.2%
Nevada Test Site	54,738	56,347	46,766	-9,581	-17.0%
Y-12 National Security Complex	101,772[b]	97,912[b]	114,470	16,558	16.9%
Savannah River Site	73,753	83,035	79,317	-3,718	-4.5%
Kansas City Plant	91,590	97,933	100,098	2,165	2.2%
Pantex Plant	108,761	94,051	94,749	698	0.7%
All Other Sites	527[c]	8,675[c]	37,027	28,352	326.8%
Total, Operations of Facilities	896,254	933,893[d]	972,773	38,880	4.2%

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

[a]Includes comparability adjustments for the transfer to Engineering Campaigns Construction Activities Other Project Costs (OPC's) for project 01-D-108 (MESA) to more closely align OPC's with the project and programmatic work it supports (FY 2002: -$3,600,000; FY 2003: -$4,200,000); transfer to DSW Production Support (FY 2002: -$28,100,000; FY 2003: -$28,615,000) and transfer from RTBF Program Readiness (FY 2002: +$10,575,000; FY 2003: +$8,332,000) for realignment of DSW and RTBF to ensure consistencies among "production" sites.

[b]Includes a comparability adjustment for the transfer from Stockpile Readiness Campaign of "Modernize Manufacturing Facilities" MTE which supports efforts to revitalize the Y-12 Plant's long-term readiness posture (FY 2002: +$19,765,000; FY 2003: +$22,368,000).

[c]Includes a comparability adjustment for the transfer of building 3019 at ORNL to the Nuclear Energy program (FY 2002: -$13,391,000; FY 2003: -$13,912,000).

[d]Pending the enactment of a final FY 2003 appropriation, this amount reflects the Congressional Budget Request; it does not include a reprogramming of $4,000,000 from prior year funding, which was requested in FY 2002, but not approved until December 2002. If the FY 2003 appropriation provides the funding requested in FY 2003, a total of $937,893,000 will be available.

Detailed Program Justification

(dollars in thousands)

	FY 2002	FY 2003	FY 2004
Lawrence Livermore National Laboratory	**42,026**	**42,401**	**42,716**

Includes NNSA's share of the operation of the following programmatic facilities:

- *Superblock Complex* includes the Plutonium Facility (B332), the Tritium Facility (B331), the Hardened Engineering Test Building (HETB, B334), and the High Energy Radiography Facility (HERF, B239).
- *High Explosives Facilities* includes "Warm Standby" for High Explosives Application Facility (HEAF), and Bunkers B801/CFF (6), B812 (3), B850, B851 (3).
- *Physics Facilities* includes "Warm Standby" for Linear Accelerator (LINAC) in B194 and the gas guns in B341.
- *Engineering Facilities* includes "Warm Standby" for High Bay in B131, B834 (13), B836 (4), B837, B854 (9), B855 (3), B856, B858 (2).
- *LLNL NV Experimental Support*

  Facilities: This includes Livermore staff to manage high explosives activities within Big Explosive Experiment Facility (BEEF)/Nevada Energetic Materials Operations Facility facilities. This also includes some Livermore effort for the start-up of JASPER and a glove box within DAF.

  Tech-Base Program: This includes technical staff support for experiment programs sponsored by B-Program and supports miscellaneous small project users from Livermore at the NTS.

  NTS Infrastructure: This provides for the implementation of Livermore- specific requirements including a wide-range of environment, safety and health institutional support functions.
- Support for offsite assignees and provides for Other Project Cost (OPC) funding for RTBF construction projects.
- *Nevada Test Site (NTS) Facility* Support includes the oversight and program management of the Management and Operations Contractor for NTS facilities including the JASPER facility, and the Device Assembly Facility (DAF).

Los Alamos National Laboratory	**291,602**	**306,874**	**309,151**

Includes NNSA's share of the operations of both programmatic and institutional/infrastructure facilities:

- *Engineering Facilities* include engineering testing facilities, engineering high explosives facilities, engineering assembly and storage and engineering machine shops.
- *Dynamic Experiments Facilities* include dynamic experiments facilities such as the Dual-Axis Radiographic Hydro Test facility (DARHT), firing sites, the high explosives detonator facility, and the high explosive science facility.
- *Los Alamos Neutron Science Center* (LANSCE) includes the LANSCE accelerator readiness, the Weapons Neutron Research facility (WNR), and the Lujan Center.
- *Nuclear Facilities* includes nuclear materials technology facilities including TA-55, the Chemistry Metallurgy Research facility (CMR), and TA-18.
- *Waste Management Facilities* includes the waste management facility operations, including the Radioactive Liquid Waste Treatment Facility (TA-50); the Solid Radioactive Waste Management Facility (TA-54); the Radioactive Materials, Research, Operations, and Development facility; the Waste Characterization, Reduction, and Repackaging facility; and the Radioassay and Non-Destructive Test facility.
- Tritium Facilities consist of the Weapons Engineering Tritium Facilities (WETF) and the Tritium Science and Fabrication Facility (TSFF).
- Beryllium Technology provides the only technical capability within the DOE for non-nuclear component fabrication and beryllium research and development.
- *Other Direct Funded Facilities* include other project costs; general plant projects; engineering studies; waste processing activities such as transuranic waste characterization, pollution prevention /waste minimization, and waste disposition; excess facility surveillance and maintenance; facility deactivation and demolition; technical safety requirement implementation; facility consolidation and modernization; TA-55 Fire Protection Yard Main Replacement; TA-55 Type A Corrective Action Plan; and other programmatic and institutional initiatives.

Sandia National Laboratories	**131,485**	**146,665**	**148,479**

Includes NNSA share of the operations of several programmatic support test and manufacturing facilities as well as institutional and other infrastructure support.

Microelectronics research and development facilities include microelectronics and semiconductor facilities and clean rooms to understand new semiconductor device technologies, photonics-based microsystems, sensors, micro machines, and advanced packaging and microsystems integration. Microelectronics support under operation of facilities sustains the Department of Energy (DOE) capability to produce radiation-hardened microelectronics for stockpile systems, including design, test, reliability and failure analysis (capability to resolve SAIS).

Radiation testing facilities include pulsed power gamma-ray and x-ray accelerators, and neutron reactors capable of providing a unique suite of hostile environments simulators required to maintain, qualify, and certify the radiation hardness of stockpile system components. These include Saturn, HERMES, SPHINX, Z, the Annular Core Research Reactor, the Sandia Pulsed Reactor, the Gamma Irradiation Facility, and the Radiation Metrology Laboratory.

Normal and abnormal environment testing facilities include those capabilities necessary to qualify and certify weapon systems in the extreme environments to which they may be exposed. These include the Tonopah Test Range to assess performance in full-scale drop tests for bombs and the Albuquerque Full-scale Experiment Complex that evaluates performance of the entire system (which includes the centrifuge complex, rocket sled track, drop tower/water impact complex, aerial cable site, explosives site, vibration facility, vibro-acoustics facility, mechanical shock complex, radiant heat facility, and the Lurance Canyon burn site). In addition some of the other direct-funded facilities provide for component and subsystem level testing critical to the development and understanding the design of systems. These include electromagnetic test facilities; Sandia testing capabilities in California and Albuquerque sites for structural analysis, modal analysis, mass properties analysis, material characterization, and aero-thermal dynamics and aerodynamics; and the Kauai Test Facility readiness to support instrumented rocket systems assessment.

Neutron Generator Production facilities include special maintenance, special security, and environment, safety and health for the capability to produce neutron generators, a limited life component, for every system within the stockpile.

Primary Standards Laboratory is responsible for the metrology oversight, certification of standards, and development of new standards and proficiency testing for the entire Nuclear Weapons Complex.

Other Direct Funded Facilities also includes the Z facility refurbishment ($21,565,000 is requested in FY 2004 to fully fund) to meet the multi-Laboratory demands and the costs required to support operations and provide the supporting technologies required to field experiments at the Z facility. It also supports the Environmental Management (EM) testing capabilities and other experimental capabilities in Albuquerque related to vibration, force and pressure, shock, climatic chambers, mass properties, modal properties, along with a number of non-destructive testing capabilities.

Nevada Test Site	**54,738**	**56,347**	**46,766**

Includes NNSA's share of the operations and maintenance of the Device Assembly Facility, U1a Experimental Complex, Joint Actinide Shock Physics Experimental Research Facility, Control Point Facilities, Atlas and BEEF, and the North Las Vegas Facilities. There is no FY 2004 funding requested for the Nevada Center for Counterterrorism due to the uncertainty about the ultimate sponsor, scope, and size of the mission for this facility.

Y-12 National Security Complex	**101,772**	**97,912**	**114,470**

Includes operational and maintenance costs for the following "mission essential" buildings: 9201-1, 9201-5, 9201-5N, 9202, 9204-2, 9204-2E, 9204-4, 9206, 9212, 9215, 9720-5, 9995, 9998. Includes activities required for continuous operations of each building and specific upgrade projects related to nonroutine repairs, maintenance or alteration of the facility and facility systems. Also includes specific environment, safety and health activities such as development of new authorization basis documentation, and implementation of the Fire Protection Program Comprehensive Corrective Action Plan.

Includes activities transferred from the Stockpile Readiness Campaign for modernization efforts to provide needed facilities and infrastructure required for long-term mission accomplishment.

Savannah River Site	**73,753**	**83,035**	**79,317**

The Savannah River Tritium Facility supports the stockpile stewardship mission by loading/unloading tritium reservoirs, recovering/purifying tritium gas, reclaiming reservoirs, and performing stockpile surveillance tests. Future work will also include the extraction of tritium from Tritium Producing Burnable Absorber Rods once the Tritium Extraction Facility is operational. The following sub-elements support Operation of Facilities:

Facilities Management and Support -Maintain the facilities and infrastructure in a state of readiness for mission operations.

Maintenance - Work required to maintain process and infrastructure equipment/facilities in a condition suitable for it to be used for its designated purpose.

Utilities - Contracted costs associated with providing utilities to the Tritium Facility.

Environment, Safety and Health – Activities include environmental sampling and analyses, environmental issue/program management, waste management and minimization, radiological controls, industrial hygiene, industrial safety, safety documentation, emergency services, and fire protection.

Other Project Cost (OPC) funding for line item construction projects and capital equipment purchases and execution of general plant projects.

Expense Funded Projects - Repair and replacement projects that are covered by the Davis-Bacon Act and are not associated with a specific weapon program.

Kansas City Plant	**91,590**	**97,933**	**100,098**

Operation of Facilities at the KCP provides infrastructure support to manufacturing and engineering activities for a broad array of DSW products, the associated weapon programs, and technology development and deployment activities in the Enhanced Surveillance, ADAPT, and Nonnuclear Readiness campaigns. Operation of Facilities costs include facilities management, maintenance, environmental, safety and health, waste management, and utilities.

Pantex Plant	**108,761**	**94,051**	**94,749**

The cost of all structures, equipment, systems, materials, procedures and facility support personnel necessary to provide program sponsors with a facility that is safe, secure, reliable and "ready for operations." This includes support services related to the conduct of safe facility or activity operations, such as maintenance workers, radiological control technicians, general engineering support staff, environment, safety and health professionals, and other workers conducting facility readiness activities.

All Other Sites	**527**	**8,675**	**37,027**

Includes NNSA's share of miscellaneous facility related costs at the Oak Ridge National Laboratory and Headquarters. The FY 2004 funding increase will support prioritized emerging concerns across the nuclear weapons complex: monitoring wells, TRU waste acceleration, general plant projects, and capital equipment.

Total, Operations of Facilities	**896,254**	**933,893**	**972,773**

Explanation of Funding Changes

		FY 2004 vs. FY 2003 ($000)
Operations of Facilities		
#	Lawrence Livermore National Laboratory increase reflects escalation	315
#	Los Alamos National Laboratory increase reflects escalation	2,277
#	Sandia National Laboratory increase reflects escalation	1,814
#	Nevada Test Site decrease reflects the elimination of funding for the National Center for Counterterrorism (-$10,000) offset by an increase for escalation ($419)	-9,581
#	Y-12 National Security Complex has increased scope to accelerate the deactivation of 9206 Facility. Establish container refurbishment in area Beta 2E. Funding for 10CFR830 Implementation Plan and Corrective Action Plan scope that was not funded in FY 2003	16,558
#	Savannah River Site OPC funding decrease due to Tritium Modernization and Consolidation Project approaching completion	-3,718
#	Kansas City Plant increase reflects escalation	2,165
#	Pantex Plant increase reflects escalation	698
#	All Other Sites increased to support prioritized emerging concerns across the nuclear weapons complex: monitoring wells, TRU waste acceleration, general plant projects, and capital equipment	28,352
Total Funding Change, Operations of Facilities		**38,880**

Capital Operating Expenses and Construction Summary

Capital Operating Expenses [e]

(dollars in thousands)

	FY 2002	FY 2003	FY 2004	$ Change	% Change
General Plant Projects	29,202	30,078	30,980	902	3.00%
Capital Equipment	41,545	42,791	44,075	1,284	3.00%
Total, Capital Operating Expenses	70,747	72,869	75,055	2,186	3.00%

[e] 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.

Program Readiness

Mission Supporting Goals and Measures

The Program Readiness subprogram of Readiness in Technical Base and Facilities (RTBF) includes activities that support more than one facility, campaign, or Directed Stockpile Work (DSW) activity, but are essential to achieving the objectives of the Stockpile Stewardship Program. The activities may vary from site to site due to the inherent differences in site activities and organizational structure. Ongoing activities support the Nevada Test Site readiness and maintenance of a nuclear test capability, critical skill needs consistent with Chiles Commission recommendations, and pulsed power science, microsystems and technology. Pulsed power technology provides the fundamental data to understand how a weapon system performs. Microsystems technology supports future weapon system surety needs as well as the survivability of future weapon systems in a severe radiation environment.

Subprogram Goal

Specialized capabilities, equipment, and human resources sufficient to support the technical base of the Stockpile Stewardship Program.

Performance Indicators

Percentage of Nevada Test Site boreholes closure commitments to the State of Nevada.

Development of scheduled advanced microsystems, pulsed power, and other technologies to support Stockpile Stewardship missions.

Number of critical scientific, production, and engineering skills personnel hired/retained to support Directed Stockpile Work .

Number of completed activities necessary for achieving an Enhanced Test Readiness posture.

Annual Performance Results and Targets

FY 2002 Results	FY 2003 Targets	FY 2004 Targets
Completed pit-monitoring demonstration at Pantex; warhead monitoring demonstration at a U.S. Air Force site; and fulfilled U.S. obligations under Warhead Safety and Security Exchange agreement. Completed plugging of 60 underground testing boreholes.	Maintain test readiness in accordance with Presidential Decision Directive utilizing an integrated long term plan that maintains the physical infrastructure of the Nevada Test Site and supports current stockpile experimental and testing activities and other National priority missions; if directed and funded, proceed to implement the recommendations of the	Close at least 90% of the borehole at the Nevada Test Site scheduled for the fiscal year. Establish process and inventory control in th Microelectronics Development Laboratory (MDL) to support fabrication of seven war reserve (WR) application-specific integrated circuits for the W76-1 and W80-3.

Conducted external weapons physics shots on the Z facility at Sandia for specific experiments in four Campaigns, with all power flow and load hardware were completely supported as required; over 180 full system shots (many shots with multiple experiments) were performed:

-Approximately 50% of the shots were for Weapons Science Campaign customers.

-35% of the shots were for the Inertial Confinement Fusion Campaign.

-15% of the shots were devoted to z-pinch physics, power flow, universities (basic science), and other federal agency customers.

Completed testing for the ZR intermediate store and gas switch and provided definitions of these components to engineering to design and procure ZR prototype hardware.

Developed an innovative method of producing the required pulse shape on Z for Isentropic Compression Experiments for Equation of State work.

Completed Microsystems technology maturation on schedule with Microsystem and Engineering Science Application requirements at Sandia.

Completed upgrade of MentorGraphics suite of microelectronics design tools.

Enhanced Test Readiness Study.

Continue directive scheduled closure of underground testing boreholes in accordance with the state of Nevada regulations; revise plan to reflect funding constraints.

Continue development and demonstration of improved weapon transportation and monitoring systems.

Set an improvement goal of the cost of non-conformance based on the FY 2002 baseline.

Support microsystems infrastructure construction or tooling needed for microsystems to be successfully deployed in the nuclear weapons complex.

Maintain the capability for designing and improving pulsed power drivers ranging from high impedance accelerators for gamma rays and radiography to high power drivers for Z-pinches.

Support pulsed power directed research and system evaluation required for the Z recapitalization program.

Enable weaponeers to learn and teach weapon skills, and maintain a program to attract, develop, and retain people with necessary skills to support stockpile stewardship objectives.

Complete the LIGA (acronym for German words for lithography, electroforming, and molding-process for making small pieces) exposure station at the Brookhaven National Laboratory.

Establish a robust and controlled manufacturing process for Deep Reactive Ion Etching of single crystal silicon.

Complete the system evaluation test program and validate the architecture for the Z refurbishment project.

Verify the operational parameters of the Russian-designed 1 MA Linear Transformer Driver in the Pulsed Power Development Laboratory at Sandia National Laboratories (SNL).

Achieve 90% of planned program-supported new hires with critical technical and scientific skills to support Directed Stockpile Work.

Deliver a report describing potential enhanced readiness tests, with associated diagnostics and availability of material.

Begin at least two hazards assessments, two reviews, and one nuclear explosive safety study (NESS); and complete two assessments.

Design one new rack and one new canister on modern

Completed development of LIGA (acronym of German words for lithography, electroforming, and molding--process for making small pieces) process workflow/ foundation model; deployment of FactoryWorks in the Microelectronics Development Laboratory at Sandia; and began conversion of relevant databases.

Completed coordination of microtechnology curriculum with TVI for Fall 2002 semester.

computer platform; identify THREX fabrication facility; identify radiological-chemical technology weaknesses; evaluate modern data acquisition technology; and reconstitute an alpha simulator.

Complete an assembly and maintenance plan for facilities and heavy equipment.

Log 90% of the drill holes identified for logging.

Complete Ground Motion Code development; deliver 18 field test neutron generators; produce a CD for containment; and complete the Decision Support System (DSS).

Funding Schedule

(dollars in thousands)

	FY 2002	FY 2003	FY 2004	$ Change	% Change
Nevada Site Readiness	33,069[a]	33,692	39,562	5,870	17.4%
Pulse Power Sciences, Microsystems, and Other Technical Support	39,081[b]	47,533[b]	45,598	-1,935	-4.1%
Critical Production and Engineering Skills	16,023[c]	21,286[c]	21,042	-244	-1.1%
Test Readiness	9,800	17,900	24,891	6,991	39.1%
Total, Program Readiness	97,973[d]	120,411[d,e]	131,093	10,682	8.9%

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 for the transfer to RTBF Operations of Facilities for realignment of DSW and RTBF to ensure consistencies among "production" sites (FY 2002: -$1,089,000).

[b] Includes a comparability adjustment for the transfer to RTBF Operations of Facilities for realignment of DSW and RTBF to ensure consistencies among "production" sites (FY 2002: -$9,486,000; FY 2003: -$8,332,000).

[c] Includes a comparability adjustment for the transfer to DSW Production Support for realignment of DSW and RTBF to ensure consistencies among "production" sites (FY 2002: -$161,000; FY 2003: -$166,000).

[d] Includes a comparability adjustments for the transfer to DSW Production Support (FY2002:-$81,696,000; FY 2003: -$79,180,000) from Manufacturing Processes for realignment of DSW and RTBF to ensure consistencies among "production" sites.

[e] Pending the enactment of a final FY 2003 appropriation, this column reflects the FY 2003 Congressional Budget Request; it does not include $6,164,000 requested in 01-D-103, Project Engineering and Design (PED), which will be proposed for reallocation to RTBF/Program Readiness to support critical pre-design activities as part of a reprogramming action after enactment of the FY 2003 appropriation.

Detailed Program Justification

(dollars in thousands)

	FY 2002	FY 2003	FY 2004
Nevada Site Readiness	**33,069**	**33,692**	**39,562**

Includes activities required to maintain the Nevada Test Site (NTS) that are not unique to the test readiness mission, but do support the stockpile stewardship mission. Specifically, includes funding for the following Program Readiness major technical efforts (MTEs): Laboratory Logistics, Program Operations, Laboratory Permanent Party, Other Federal Agencies, Legacy Compliance and Borehole Management Program.

Laboratory Logistics supported the National Weapons Laboratory staff permanently located at the NTS in FY 2002 and FY 2003. This funding specifically supported equipment (such as vehicles, telephones, radios, computers), administrative and technical support. Laboratory Permanent Party funded salaries for a portion of the laboratory permanent party assigned to the NTS. Permanent Party Laboratory personnel support their respective laboratories in executing experiments and related activities identified under Directed Stockpile Work (DSW) and Campaigns. Starting in FY 2004, the laboratories will directly fund these activities.

Program Operations supports the collection and consolidation of historical documents, records and data dealing with the U.S. Nuclear Testing Program at the Coordination and Information Center; seismic monitoring and recording of all significant natural seismic events, experimental explosions greater than 50 lbs., and all subcritical experiments; closed circuit television recording of subcritical experiments; and funding to retain and utilize former key personnel as subcontractors to perform various programmatic scopes of work in support of Campaigns, DSW and RTBF efforts.

Other Federal Agencies supports various organizations in areas of offsite monitoring, weather, cultural resources, hydrology and geology.

Legacy Compliance addresses environmental issues that resulted from years of nuclear testing activities in Nevada. This funding supports regulatory requirements and good faith efforts to avoid potential compliance orders. The Federal Facility Agreement and Consent Order (FFACO) and Demarcation Project require continued support in FY 2004.

In compliance with Nevada Revised Statute Chapter 534, the Borehole Management Program will accelerate closure (plugging) of the remaining unutilized NTS legacy boreholes over a five year period beginning in FY 2004.

Pulse Power Sciences, Microsystems, and Other Technical Support	**39,081**	**47,533**	**45,598**

Microsystems Infrastructure, Pulsed Power Science, and other technical support includes infrastructure readiness to support activities directly related to construction or tooling needed for microsystems to be successfully deployed in nuclear weapons; maintain the capabilities to design and improve pulsed power machines in support of Inertial Confinement Fusion, weapon physics and weapon effects; defense nuclear materials stewardship to research, develop, test, and evaluate advanced technologies for material management systems to enhance the safety, security, and accountability of nuclear weapons and materials during storage, handling and transportation; knowledge preservation and management program; support of the arming and firing hardware for nuclear testing and subcritical experimentation; and technical support to Headquarters.

Critical Production and Engineering Skills	**16,023**	**21,286**	**21,042**

Hire individuals with the critical skills needed to sustain production and engineering capabilities in support of directed stockpile work and to address Chiles Commission recommendations at three primary production sites without a major source for these skills. In FY 2004, personnel would perform technical apprenticeships, and knowledge preservation and development projects.

Includes production assurance, operational quality assurance, and laboratory/technical support activities at the Pantex Plant. The primary objectives of this element is to support program readiness for both Directed Stockpile Work and Campaigns by maintaining competence in key manufacturing technologies, and to implement production capability for improved weapon components developed as part of the Campaigns or other similar advanced technologies development activities. Includes quality assurance, reliability, and regulatory activities. This activity provides policy direction, supervision, and coordination for quality assurance, independent assessment, Integrated Safety Management, Price Anderson Amendment Act non-compliance reporting, occurrence reporting, and issues management systems at the Pantex Plant. Activities include coordination of lessons learned, trend analysis, and plant-wide preparation for conduct of contractor and DOE readiness reviews.

Kansas City Plant program readiness activities reflect the hiring and retention of employees with critical skills needed to transition knowledge to sustain production and engineering capabilities in support of weapon programs and to address Chiles Commission recommendations.

Y-12 National Security Complex activities include the chronic beryllium disease prevention program, critical skills, and program management for RTBF as a whole.

Test Readiness	**9,800**	**17,900**	**24,891**

As advocated in the recently completed Nuclear Posture Review (NPR), DoD and the NNSA expect to refine test scenarios and evaluate cost/benefit tradeoffs to determine, implement and sustain the optimum test readiness time that supports the New Triad. In FY 2002, an Enhanced Test Readiness Cost Study was completed. This study identified the work necessary to achieve an 18-month test readiness posture as well as additional activities necessary for maintaining the current 24- to 36-month posture. The DoD and the NNSA agreed to transition to an 18-month test readiness posture while continuing to review the optimum posture. The actions necessary for moving to the 18-month posture are expected to begin upon enactment of the FY 2003 appropriation.

Also, activities which are unique to test readiness, previously identified under Tech Readiness Base, such as archiving, resumption planning, standby assets, nuclear skills retention, and field test neutron generators are funded under this category beginning in FY2003.

Total, Program Readiness	**97,973**	**120,411**	**131,093**

Explanation of Funding Changes

	FY 2004 vs. FY 2003 ($000)
Program Readiness	
# **Nevada Site Readiness**- Increase in funding for the Borehole Management Program accelerated closure (plugging) of the unutilized Nevada Test Site legacy boreholes (+$5,000; +$870 increase reflects an adjustment for escalation)	5,870
# **Pulse Power Sciences, Microsystems, and Other Technical Support**- Decrease supports the funding profile and project scope associated with the Microsystems Infrastructure and Pulse Power Science projects	-1,935
# **Critical Production and Engineering Skills**- Minimal change in funding due to adjustments made in other programs	-244
# **Test Readiness**- Increase in funding to meet additional requirements to maintain the 2-3 year test readiness posture, and move toward an 18-month test readiness posture	6,991
Total Funding Change, Program Readiness	**10,682**

Capital Operating Expenses and Construction Summary

Capital Operating Expenses [f]

(dollars in thousands)

	FY 2002	FY 2003	FY 2004	$ Change	% Change
General Plant Projects	0	0	0	0	N/A
Capital Equipment	2,638	2,717	2,799	82	3.00%
Total, Capital Operating Expenses	2,638	2,717	2,799	82	3.00%

[f] 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.

Special Projects

Mission Supporting Goals and Measures

The Special Projects subprogram of Readiness in Technical Base and Facilities (RTBF) includes activities which require special control or visibility, or do not fit easily into other RTBF budget categories. The FY 2004 activities focus on Los Alamos County School District, Los Alamos Land Transfer Activities, Nuclear Criticality Safety Program, Laboratory Critical Skills Development Program, and Other Support.

Subprogram Goal

Visibility to crosscutting or special activities needed to support other Defense Program goals.

Performance Indicators

Number of students hired from the Critical Skills Development Program
Percent of a viable Nuclear Criticality Safety Program (NCSP) maintained by conducting criticality safety classes
Transfer Lands to Los Alamos County, Tribal Nations, and other agencies as directed in Public Law 105-119.

Annual Performance Results and Targets

FY 2002 Results	FY 2003 Targets	FY 2004 Targets
Increased number of students hired from Laboratory Critical Skills Development Program into Nuclear Weapons Laboratories. Engaged University of California Office of the Treasurer in developing a portfolio tailored to meet the financial objectives of the Foundation as reflected in the 2002 DOE Report to Congress.	Conduct criticality safety experiments, baselining, and training in support of DOE-approved Defense Nuclear Facility Safety Board (DNFSB) recommendation 97-2; conduct/complete work associated with experiments. Achieve exemplary rank for all seven district schools. Provide for pension liabilities at former Defense Program sites. Continue to meet land transfer milestones at Los Alamos National Laboratory.	Increase the number of students hired from the Laboratory Critical Skills Development Program over the FY 2003 baseline. Complete scheduled and funded criticality safety training classes. Complete scheduled and funded land transfer activities at Los Alamos National Laboratory, including preparation for FY2005 land transfer.

Funding Schedule

(dollars in thousands)

	FY 2002	FY 2003	FY 2004	$ Change	% Change
Los Alamos County School District	8,000	8,000	8,000	0	0.0%
Los Alamos National Laboratory Foundation	6,900	0	0	0	N/A
LANL Land Transfer Activities	1,878	3,900	3,900	0	0.0%
Other Support	10,521	16,669	15,931	-738	-4.4%
Nuclear Criticality Safety Program	3,614	3,800	9,850	6,050	159.2%
Laboratory Critical Skills Development Program	4,983	5,375	5,294	-81	-1.5%
Total, Special Projects	35,896	37,744	42,975	5,231	13.9%

Detailed Program Justification

(dollars in thousands)

	FY 2002	FY 2003	FY 2004
Los Alamos County School District	**8,000**	**8,000**	**8,000**

Support to Los Alamos County School District to enhance teacher salaries and provide education enrichment activities to aid Los Alamos National Laboratory in recruiting and retaining world-class scientists and engineers.

Los Alamos National Laboratory Foundation	**6,900**	**0**	**0**

In FY 2002, completed the full endowment of $25 million over 5 years to the Northern New Mexico Educational Foundation.

LANL Land Transfer Activities	**1,878**	**3,900**	**3,900**

Landlord cost associated with conveyance and transfer of land at LANL to the County of Los Alamos and San Ildefonso Pueblo, as directed by P.L. 105-119. Landlord expenses associated with this program are estimated to total about $22 million over time.

Other Support	**10,521**	**16,669**	**15,931**

Other support includes pension liabilities, special access programs, systems engineering support, and information system upgrades. Engineering and technical support for RTBF activities; for example, independent reviews and internal reviews such as the past 30-Day Review and the Chiles Commission; internal reviews; condition assessment surveys; R&D Tracking System; resolution of findings, issues, and concerns from external independent reviews; Federal Laboratory Consortium with National Institute of Science and Technology, and independent cost estimating requirements.

Nuclear Criticality Safety Program	**3,614**	**3,800**	**9,850**

Costs associated with the conduct of Nuclear Criticality Safety Program (NCSP) in support of DNFSB Recommendation 97-2. In FY 2004, the NCSP reflects a scope increase associated with NNSA's recent designation as the Department of Energy's sole NCSP program manager. Previously, this infrastructure program was funded by multiple program sponsors. The NCSP maintains nuclear criticality skills and technical capability necessary to support all operational criticality safety programs in the Department's nuclear facilities

Laboratory Critical Skills Development Program	**4,983**	**5,375**	**5,294**

Funding to engage, develop and hire students with critical skills for Nuclear Weapons Laboratories.

Total, Special Projects	**35,896**	**37,744**	**42,975**

Explanation of Funding Changes

	FY 2004 vs. FY 2003 ($000)
Special Projects	
# **Los Alamo County School District, LANL Land Transfer Activities, Other Support, and Laboratory Critical Skills Development Program** - Decrease in funding due to minimal changes for other programs	-819
# **Nuclear Criticality Safety Program** - The increase in the Nuclear Criticality Safety Program (NCSP) funding is necessary to fully fund DNFSB Recommendation 97-2, Criticality Safety. The NCSP is primarily an infrastructure program that is dependent on maintaining critical skills and technical capability necessary to support all operational criticality safety programs in DOE's nuclear facilities.	6,050
Total Funding Change, Special Projects	**5,231**

Capital Operating Expenses and Construction Summary

Capital Operating Expenses [a]

(dollars in thousands)

	FY 2002	FY 2003	FY 2004	$ Change	% Change
General Plant Projects	144	148	153	4	3.00%
Capital Equipment	0	0	0	0	N/A
	144	148.32	153	4	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.

Material Recycle and Recovery

Mission Supporting Goals and Measures

The Materials Recycle and Recovery subprogram of Readiness in Technical Base and Facilities (RTBF) is responsible for the recycle and recovery of plutonium, enriched uranium, and tritium from fabrication and assembly operations, limited life components, and dismantlement of weapons and components. It supports the development and implementation of new processes or improvements to existing processes for fabrication and recovery operations and for material stabilization, conversion, and storage. The program involves the process of recycling, stabilizing, and purifying the above materials to meet specifications for safe, secure, and environmentally acceptable storage or reuse, including meeting the directive schedule for tritium reservoir refills. It provides for the processing of certain pits that are not considered suitable for long-term storage. Also included is the cost of Central Scrap Management Office management of receipts, storage, and shipments of enriched uranium scrap; the Precious Metals Business Center, which provides a cost-effective service to many users within the Department of Energy (DOE) field complex; and deactivation of Building 9206 at the Y-12 National Security Complex.

Subprogram Goal

The capability to recover and recycle plutonium, highly-enriched uranium, and tritium to support a safe and reliable nuclear stockpile.

Performance Indicators

Amounts of plutonium and uranium-containing materials packaged.
Number of plutonium items stabilized .
Amounts of plutonium, highly-enriched uranium, and tritium recovered or recycled.

Annual Performance Results and Targets

FY 2002 Results	FY 2003 Targets	FY 2004 Targets
Stabilized and packaged Pu-containing materials to meet long term storage criteria in accordance with Defense Nuclear Facility Safety Board Recommendations 94-1 and 2000-1.	Stabilize and package Pu-containing materials to meet long term storage criteria in accordance with Defense Nuclear Facility Safety Board Recommendations 94-1 and 2000-1.	Stabilize about 500 plutonium-containing items in accordance with the Implementation Plan for DNFSB Recommendations 94-1 and 2000-1.
Repackaged uranium containing materials to meet stabilization and Y-12 National Security Complex acceptance criteria.	Repackage uranium containing materials to meet stabilization and Y-12 National Security Complex acceptance criteria, per directive schedule.	Repackage uranium containing materials to meet stabilization and Y-12 National Security acceptance criteria per directive schedule.
Stabilized and packaged plutonium contaminated Highly Enriched Uranium (HEU) components/parts in accordance with (IAW) directive schedule; Los Alamos National Laboratory (LANL) prepared two HEU shipment to the Y-12 National Security Complex.	Stabilize and package plutonium contaminated HEU components/parts IAW directive schedule; support commercial processing of HEU scrap at the Y-12 National Security Complex, per directive schedule.	Stabilize and package about 10 Highly Enriched Uranium-containing items.
Recovered and recycled material from fabrication and assembly operations, limited life components, and dismantlement/disposal of weapons and weapon components.	Recover and recycle material from fabrication and assembly operations, limited life components, and dismantlement/disposal of weapons and weapon components, per directive schedule.	Recover and recycle plutonium, highly-enriched uranium, and tritium material to meet the current directive stockpile schedule.
Packaged residues to meet Waste Isolation Pilot Project (WIPP) waste acceptance criteria.	Package directive scheduled residues to meet WIPP waste acceptance criteria.	

Made DOE precious metals available from contaminated and non-contaminated scrap to DOE and contractors at no cost; provided an estimated $2.8 million of precious metals to DOE Programs. (a factor of three savings compared to commercial purchase)	Make DOE precious metals available from contaminated and non-contaminated scrap to DOE and contractors at no cost.	Recover at least $ 2.5 M in precious metals from contaminated and non-contaminated scrap.
Operated the processing capability for tritium contaminated parts and components.	Operate the processing capability for tritium contaminated parts and components. Develop preliminary NNSA Material Disposition Plan, including addressing DOE beryllium requirements and projected shortfalls, and relocating lithium to the Y-12 National Security Complex. Provide purified Enriched Uranium metal available through wet chemistry reprocessing, per directive schedule.	Operate the processing capability for tritium-contaminated parts and components. Start up the Hydrogen Fluoride Supply System and the chemical recovery operations.

Funding Schedule

(dollars in thousands)

	FY 2002	FY 2003	FY 2004	$ Change	% Change
Material Recycle and Recovery	92,826	98,816	76,189	-22,627	-22.9%
Total, Material Recycle and Recovery	92,826	98,816	76,189	-22,627	-22.9%

Detailed Program Justification

(dollars in thousands)

	FY 2002	FY 2003	FY 2004
Material Recycle and Recovery	**92,826**	**98,816**	**76,189**

Includes the recycle and recovery of plutonium, enriched uranium, and tritium from fabrication and assembly operations, limited life components, and dismantlement of weapons and components. Involves the process of recycling, stabilizing, and purifying the above materials to meet specifications for safe, secure, and environmentally acceptable storage or reuse, including meeting the directive schedule for tritium reservoir refills.

Includes the cost of commercial highly enriched uranium processing services required to supplement the capability of the Y-12 National Security Complex. Involves the chemical conversion of lithium from various forms to lithium chloride. Stores in-process materials until they can be further processed for long-term reuse, storage, or disposition. Also includes the cost of Central Scrap Management Office (CSMO) management of receipts, storage, and shipments of enriched uranium scrap. The Precious Metals Business Center provides excellent stewardship of resources by serving as the hub for all Department elements to obtain recycle precious metals, making available commercial processing contracts, and providing for storage and transfer of precious metals. Without the Center, several DOE programs would be forced to establish individual precious metal pools which is not cost effective.

Includes stabilization activities to meet the milestones of the implementation plans for DOE-approved Defense Nuclear Facility Safety Board (DNFSB) recommendations 94-1, 97-1 and 2000-1. Also funds activities of the Special Recovery Line at LANL to process contaminated parts. Processes contaminated uranium to meet Y-12 acceptance criteria. Also includes nuclear materials planning and data collection, maintenance and reporting at LANL.

Total, Material Recycle and Recovery	**92,826**	**98,816**	**76,189**

Explanation of Funding Changes

	FY 2004 vs. FY 2003 ($000)
Material Recycle and Recovery	
• Reflects the deferral of resumption of noncritical HEU facilities and upgrade of associated equipment due to other higher priority needs in the RTBF activities. . . .	-22,627
Total Funding Change, Material Recycle and Recovery	**-22,627**

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	2,266	2,334	2,404	70	3.00%
Total, Capital Operating Expenses	2,266	2,334	2,404	70	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.

Containers

Mission Supporting Goals and Measures

The Containers subprogram of Readiness in Technical Base and Facilities (RTBF) includes identification of program needs, research and development, design certification, recertification and maintenance, issuance of container off-site transportation certificates in accordance with Federal regulations, off-site transportation authorization of non-certifiable nuclear materials transportation configuration; test and evaluation, production/procurement, fielding and maintenance, and decontamination and disposal to provide adequate inventories of containers to support the nuclear weapons mission (transportation and storage).

Subprogram Goal

Specialized storage containers sufficient to support the requirements of the Nuclear Weapons Stockpile.

Performance Indicators

Number of storage and shipping containers procured.
Number of certified packages available to meet shipping demand.
Number of Safety Analysis Report-Packages (SARPs) completed.
Number of containers in surveillance program checked.

Annual Performance Results and Targets

FY 2002 Results	FY 2003 Targets	FY 2004 Targets
Provided containers to support the directive approved storage/ transportation requirements.	Provide the number of containers to support the directive approved storage/ transportation requirements.	Provide 2,400 containers to support repackaging of pits in support of Defense Nuclear Facility Safety Board (DNFSB) Recommendation 99-1.
Performed container surveillance, maintenance, and certification to ensure quality containers were maintained for use in the storage and transportation programs.	Perform directive scheduled container surveillance, maintenance, and certification to ensure quality containers are maintained for use in the storage and transportation programs.	Meet 100% of scheduled shipping requirements.
Performed packaging operations to support scheduled off-site shipments of materials.	Perform packaging operations to support scheduled off-site shipments of materials.	Prepare eight SARPs and review for certification.

Conducted independent review of Safety Analysis Report Packages and provided certifications of new packaging applications. Began design and development of DPP-2 container.	Conduct independent review of Safety Analysis Report Packages and provide certifications of new packaging applications.	Conduct annual surveillance on about 92 sealed inserts, 35 AL-R8 containers and 35 other containers.
Maintained approved level of readiness and availability of tritium packaging.	Maintain approved level of readiness and availability of tritium packaging.	
Refurbished containers to support dismantlement receipts.	Refurbish containers to support dismantlement receipts.	
Provided containers to support sealed insert (SI) repackaging. Conducted SAFEKEG container certification review.	Provide containers to support repackaging of pits in support of DOE-approved Defense Nuclear Facility Safety Board recommendation 99-1.	
Initiated request to recertify UC609 container.	Initiate design, development, and safety analysis of needed packaging.	
Installed container tracking system at selected locations.		

Funding Schedule

(dollars in thousands)

	FY 2002	FY 2003	FY 2004	$ Change	% Change
Containers	9,957	17,721	16,006	-1,715	-9.7%
Total, Containers	9,957	17,721	16,006	-1,715	-9.7%

Detailed Program Justification

(dollars in thousands)

	FY 2002	FY 2003	FY 2004
Containers	**9,957**	**17,721**	**16,006**

Includes research and development, design, recertification, and maintenance; off-site transportation; certification of component containers in accordance with Federal regulations, off-site transportation authorization of non-certifiable nuclear materials transportation configuration; test and evaluation, production/procurement, fielding and maintenance, and decontamination and disposal to provide adequate quantities of containers to support the nuclear weapons mission (transportation and storage).

Includes maintenance of Hydride Transport Vessels (HTVs) and H1616, SR-101, and UC-609 shipping containers as well as recertification of HTVs and SR-101 shipping containers (FY 2003 only). Also includes regulatory and technical support for all tritium shipping operations at Savannah River Site.

Procures sealed insert (SI) storage containers, performs pit storage container surveillance, and supports special nuclear material off-site transportation at Pantex, Y-12 National Security Complex, and the NNSA National Laboratories.

Total, Containers	**9,957**	**17,721**	**16,006**

Explanation of Funding Changes

	FY 2004 vs. FY 2003 ($000)
Containers	
• Containers - Decrease in funding is attributable to a one year decrease in new package certification activities	-1,715
Total Funding Change, Containers	**-1,715**

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	140	144	149	4	3.00%
Total, Capital Operating Expenses	140	144	149	4	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.

Storage

Mission Supporting Goals and Measures

The Storage subprogram of Readiness in Technical Base and Facilities (RTBF) provides for the receipt, storage, and inventory management of nuclear materials, nonnuclear material, and weapon components from dismantled weapons. It also provides for repackaging of primaries (pits) from dismantled weapons for long-term storage at the Pantex Plant. It does not include the cost of temporary storage of materials awaiting processing, staging for dismantlement, or any other interim storage.

Subprogram Goal

Safe, secure, and accountable storage of nuclear and other materials to meet the requirements of the Nuclear Weapons Stockpile.

Performance Indicators

Number of pits repackaged per year.

Annual Performance Results and Targets

FY 2002 Results	FY 2003 Targets	FY 2004 Targets
Conducted Pit disassembly and inspection surveillance to ensure quality requirements are met.	Conduct Pit disassembly and inspection surveillance to ensure quality requirements are met.	Repackage 2,400 pits in compliance with Defense Nuclear Facility Safety Board (DNFSB) Recommendation 99-1.
Stored nuclear and nonnuclear materials, Uranium, Lithium, and weapon components in accordance with directive schedule and approved procedures.	Store nuclear and nonnuclear materials, Uranium, Lithium, and weapon components in accordance with directive schedule and approved procedures.	
Repackaged 200 pits per month (average) in compliance with DOE-approved Defense Nuclear Facility Safety Board Recommendation 99-1.	Repackage 200 pits per month (average) in compliance with DOE-approved Defense Nuclear Facility Safety Board Recommendation 99-1.	
Stored and staged pits in accordance with directive schedule.	Ensure capability to store and stage pits in accordance with directive schedule.	

Monitored thermal environments of pits in staging and storage in accordance with directive schedule and approved procedures.	Monitor thermal environments of pits in staging and storage in accordance with directive schedule and approved procedures.
Managed storage operations at Y-12 National Security Complex to accommodate receipts from Pantex Plant.	Manage storage operations at Y-12 National Security Complex to accommodate receipts from Pantex Plant.
Completed a Material Stewardship Program Plan.	
Completed a study/ assessment of facilities at Los Alamos for long-term storage of nuclear materials.	

Funding Schedule

(dollars in thousands)

	FY 2002	FY 2003	FY 2004	$ Change	% Change
Storage	7,652	14,593	11,365	-3,228	-22.1%
Total, Storage	7,652	14,593	11,365	-3,228	-22.1%

Detailed Program Justification

(dollars in thousands)

	FY 2002	FY 2003	FY 2004
Storage	**7,652**	**14,593**	**11,365**

Includes activities and cost for the following: planning, designing, providing, and maintaining storage facilities and storage operations for the safe and secure storage of nuclear materials; multi-year program planing to ensure nuclear weapon components and materials throughout the DOE/NNSA Nuclear Weapons Complex and preparing for interim or long-term storage; nuclear materials planning and forecasting, scheduling, and integrating nuclear material user requirements, including special studies, inventory assessment, and supply and demand analysis; supporting development, design, and implementation of innovative and cost-saving technologies for monitoring and storage of nuclear materials while reducing costs and/or risk; developing and maintaining technical standards for the storage of highly enriched uranium, lithium, and canned subassemblies; and developing and implementing projects to disposition nuclear materials. This also supports the repackaging of pits in the sealed insert (SI) containers.

Total, Storage	**7,652**	**14,593**	**11,365**

Explanation of Funding Changes

	FY 2004 vs. FY 2003 ($000)
Storage	
• Decrease reflects the deferral of lower priority activities such as the relocation of lithium, depleted uranium material consolidation and highly enriched uranium material transition due to higher priority needs at the Y-12 National Security Complex	-3,228
Total Funding Change, Storage	**-3,228**

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.

Nuclear Weapons Incident Response

Mission Supporting Goals and Measures

Nuclear Weapons Incident Response provides funding for emergency management and response activities that ensure a central point of contact and an integrated response to emergencies requiring Departmental assistance. Specific attention is focused on providing an appropriate technical response to any nuclear or radiological emergency within the Department, the United States and abroad in accordance with Presidential Decision Directive 39, the Atomic Energy Act as amended, and Executive Order 12656. This is accomplished through the seven unique Departmental assets for both crisis and consequence management events.

In meeting these mission requirements, the Department of Energy (DOE) possesses the ability to monitor and predict environmental impacts of radiation at major DOE and other federal agency facilities in the event of a radiological accident or incident. DOE's response is further rounded out by the ability to provide medical and health physics support to radiological accidents and for incident resolution. This requires a close working relationship with federal agencies and the military to support the operations, exercise and training of associates who provide technical assistance in response to the incident/situation.

In response to the September 11th attacks, the deployment of DOE's Emergency Response assets has accelerated dramatically. These resources were used not only to respond directly to the events of September 11th but they continue to support search missions throughout the country. The scope of the program's search and response activities has also expanded in response to changing national security requirements. Additional requirements are likely to continue.

In addition to accommodating this acceleration, this submission reflects several changes driven by an internal reorganization of functions and the establishment of the Department of Homeland Security (DHS).

In legislation establishing the Department of Homeland Security, the nation's radiological response capabilities will remain under the direction of the Secretary of Energy/Administrator of the National Nuclear Security Administration (NNSA). Funding for the radiological assets will remain within Nuclear Weapons Incident Response (NWIR) in the Weapons Activities appropriation, managed by the NNSA Office of Emergency Operations, reporting directly to the Under Secretary and Principal Deputy Administrator of the National Nuclear Security Administration. The assets will continue to respond to radiological accidents at Departmental facilities and will support federal law enforcement activities where nuclear materials may be involved. NNSA's Office of Emergency Operations will work cooperatively with the Department of Homeland Security and when deployed in formally designated situations, the radiological assets will take direction from the Secretary of Homeland Security as the Lead Federal Agency (LFA).

NNSA's Office of Emergency Operations will continue to manage operation of the nation's nuclear response assets as well as develop requirements and exercise the emergency readiness capabilities of DOE and NNSA facilities. In FY 2003, three functions formerly conducted by the Office of Emergency Operations were transferred elsewhere in the Department. Operation of the Emergency Operations Center in Washington D.C. and Alternate Operations Center in Germantown, Maryland will be managed by the Office of Security. Also transferred to the Office of Security is the responsibility for the Department's Continuity of Operations/Continuity of Government (COOP/COG) activities.

Subprogram Goals

Provide a versatile, capable, worldwide emergency response capability to identify, respond, and mitigate a nuclear or radiological domestic or foreign incident or event.

Performance Indicators

Readiness level of deployable nuclear incident response equipment that is prepared or available for service and action.

Readiness level of deployable nuclear incident responders that are prepared or available for service and action.

Number of "no-notice" emergency management exercises conducted.

Number of emergency preparedness/response-related training courses conducted.

Participation in declared National Security Special Events applicable to radiological protection requirements.

Annual Performance Results and Targets

FY 2002 Results	FY 2003 Targets	FY 2004 Targets
Implemented TRIAGE (initial radiological assessment) as part of the Inter-agency Counter-terrorism effort.	Develop and implement a No-Notice emergency management exercise program for DOE/NNSA sites.	Maintain an average 90% readiness level in nuclear incident response equipment that is prepared or available for service or action
Completed merger of Accident Response Group and Joint Technical Operations Team to eliminate redundancies.	Successfully support all requests for DOE/NNSA support at National Security Special Events.	Maintain an average 90% readiness level in nuclear incident responders prepared or available for service or action
Enhanced and modernized consequence management capabilities.	Successfully support all federal law enforcement radiological requests.	Conduct 12 "no-notice" emergency management exercises

Trained 1365 students through 55 courses at Emergency Operations Training Academy.	Define and implement appropriate capabilities for COOP and COG programs for DOE/NNSA.	Conduct 20 emergency preparedness/response-related training courses Participate in 100% of declared National Security Special Events applicable to radiological protection requirements

Funding Schedule

(dollars in thousands)

	FY 2002 Comp. Appropriation	FY 2003 Request	FY 2004 Request	$ Change	% Change
Emergency Response.....	96,464	77,756	83,695	5,939	7.6%
Emergency Management	5,674	5,999	5,999	0	0%
Total, Nuclear Weapons Incident Response	102,138[a]	83,755[a]	89,694	5,939	7.1%

The FY2003 Request column includes comparability adjustments as detailed in the footnotes for consistency with the FY 2004 Request.

Detailed Program Justification

	FY 2002	FY 2003	FY 2004
Emergency Response	96,464	77,756	83,695

Emergency Response maintains and provides specialized technical expertise in response to nuclear/radiological incidents, including those involving nuclear weapons. These capabilities include immediate situation resolution, longer-term consequence management, and issues relating to human health.

Engineers, scientists, technical personnel from national laboratories and production facilities, and other DOE management and operating contractors supporting the nuclear weapons complex primarily staff the emergency response assets. The radiological assets managed by the NNSA Office of Emergency

a Includes a comparability adjustment for the transfer of Continuity of Operations (COOP), the Continuity of Government (COG), and the Emergency Operations Center (EOC) program funding to the Office of Security (SO) (FY 2002: -$7,185,000; FY 2003: -$7,245,000) and the transfer of funding for the Biological Aerosol Safety Information System from SO (FY 2002 +$1,000,000).

Operations are staffed by scientists and highly technical personnel holding full-time jobs at national laboratories who agree to serve as volunteers, similar to "volunteer firemen", to deploy in the event of a potential nuclear incident. The pool of potential volunteers is greater than 900. These volunteers come from a broad mix of DOE scientific facilities and national laboratories. However, specialized assistance is provided largely by the Remote Sensing Laboratories at Nellis Air Force Base, Nevada; Los Alamos National Laboratory; Lawrence Livermore National Laboratory; and Sandia National Laboratory.

Historically, these assets have been maintained as distinct activities; the Accident Response Group (ARG), the Nuclear Emergency Support Team (NEST), and Other Assets. As a result of the September 11th attacks, Emergency Response program activity has increased significantly and search and response teams remain on full alert. The accelerated pace and additional requirements are likely to continue in response to changing national security and law enforcement needs. To remain responsive, the program is managing the assets as integrated units, using expertise and equipment across funding categories to support mission requirements.

In FY 2004, the NNSA Office of Emergency Operations will work cooperatively with the newly established Department of Homeland Security to continue to provide assistance in emergency situations. Upon designation, the NNSA Office of Emergency Operations will deploy the radiological assets as directed by the Department of Homeland Security which will act as the LFA.

The FY 2004 request includes a $5.939 million increase to support the regionalization of the radiological assets within the Nuclear Emergency Support Team. Since September 11th, NNSA's response assets have increasingly been a part of security missions led by federal law enforcement agencies. There is a consensus within the counter terrorism community that a psychological threshold has been crossed by terrorist organizations with respect to the use of Weapons of Mass Destruction (WMD) against large civilian populations. Correspondingly, the need to respond to covert and deliberate incident threats, involving WMD, has risen dramatically.

To address these threats more effectively, the NNSA's Office of Emergency Operations is restructuring its asset deployment capability to increase geographical coverage and improve response time throughout the country. Radiological Assistance Program teams that currently serve in eight DOE field offices on a part-time basis will be restructured to provide full-time regional response with increased search and identification capabilities throughout the country.

The restructuring will expand response capabilities to mirror the ten regions used by the Federal Emergency Management Agency (FEMA). Instead of centralized search operations from one location, the assets will be dispersed throughout the country to provide a faster response capability. Each region would have full response capability and all regions would be interconnected for classified data transmission and home team support. The realignment will also improve coordination with representatives from other responding agencies in the region, such as the Federal Bureau of Investigation (FBI), FEMA, Environmental Protection Agency (EPA), DHS, and Tribal, state and local authorities.

This restructuring will require the redeployment and purchase of additional technical equipment to make each region fully capable of the expanded search and identification mission. The funds requested will support the deployment of necessary equipment, support program operations at the ten sites, and enable acquisition of additional equipment for each region.

- **Accident Response Group (ARG)** 12,082 12,360 12,360

  The Accident Response Group (ARG) is a combination of federal and civilian employees with equipment from the Department of Energy and its national laboratories, standing ready to respond to any accident where nuclear weapons may be involved. ARG was established under a joint agreement between the Departments of Defense and Energy, and the FEMA delineating areas of responsibility and policy for response to peacetime nuclear weapon accidents and nuclear weapon significant incidents within the U.S. and its territories. For Department of Defense (DOD) and DOE, the responsibilities and scope of this agreement extends worldwide subject to the provisions of applicable international agreements.

- **Nuclear Emergency Support Team (NEST)** 59,379 44,012 49,951

  Under the provisions of the Atomic Energy Act of 1954 and Presidential Decision Directives 39 and 62, government agencies are directed to plan for, train, and resource a robust capability to combat terrorism, especially in the area of WMD. The Nuclear Emergency Support Team (NEST) program was initiated in 1974 to provide DOE/NNSA technical assistance to a LFA (DOE, FBI, EPA, Nuclear Regulatory Commission [NRC], DOD, DHS) dealing with activities, including terrorist threats, that involve the use of nuclear materials. The NEST program has been structured to address threats posed by domestic and foreign terrorists likely to have both the will and intent to employ WMD with little regard for human lives or property. The NEST response assumes that such an act might occur with little, if any, advanced notice.

  Under such circumstances, NEST would respond to assist in the identification and characterization of any nuclear weapon or radioactive devise and/or to search for the possibility of additional devices that may have been emplaced and provide assistance for final disposition. In recognition of the increasing potential for such an incident with little or no advance warning, NEST has been restructured to rapidly respond by deploying small, highly capable technical teams to the incident location which require only minimal logistical support to be fully effective.

  The FY 2004 request includes a $2 million increase to support the regionalization of the radiological assets. An additional $.939 million is requested to continue deployment of the TRIAGE first responder support system initiated as part of the FY 2002 Supplemental Appropriation. TRIAGE

provides first responders throughout the country with a "911" type of identification and communication system. A phone call-in number is staffed around the clock to give emergency responders anywhere in the country instant access to expert nuclear scientists in the event of a suspected nuclear situation. Using their analysis of the data transmitted to them via the communications device, the scientists can provide immediate guidance and facilitate deployment of portable detection equipment to determine what type of nuclear material the responder may be facing. TRIAGE is part of the overall priority effort to develop broader geographical coverage and improve response time of emergency responders to address potential nuclear situations.

An additional $1 million is requested to support the regionalization of the asset capabilities by establishing a secure data connection system to provide field response teams with access to libraries of highly technical and sensitive information. The program responders require access to this material to accurately characterize nuclear sources and weapons of mass destruction and determine the appropriate course of action.

An additional $2 million is also requested to provide emergency response support to upcoming events. Funding will allow DOE to comply with federal direction to provide radiation detection and response support to major international events. This activity is a priority of the National Security Council and the Department of State. The costs are expected to be significant because of the distance and the high potential for terrorist activity in the area and are not included within the base program.

- **Other Assets** 25,003 21,384 21,384

Emergency Response also maintains the following additional assets to provide assistance to local, state and other federal agencies and conduct exercises in response to emergencies involving nuclear/radiological materials as well as the detection of biological agents. Additionally, these assets provide support to the NEST and ARG programs to ensure the safe resolution of an incident and protect public safety and the environment.

- The *Aerial Measurement System* detects, measures, and tracks radioactive material at an emergency scene to determine contamination levels using fixed and rotary aircraft.
- The *Atmospheric Release Advisory Capability* develops predictive plots generated by sophisticated computer models.
- The *Consequence Management Teams* provide the technical capabilities to assist and coordinate federal radiological monitoring and assessment activities and effects with FEMA, NRC, EPA, DOD, state and local agencies, and others.

The *Radiological Emergency Assistance Center/Training Site (REAC/TS)* provides treatment and medical consultation for injuries resulting from radiation exposure and contamination and serves as a training facility. Additionally, REAC/TS provides training to the medical community and maintains a database of medical responders trained to treat radiation injuries within the United States

	FY 2002	FY 2003	FY 2004
and abroad.			
Emergency Management	5,674	5,999	5,999

Emergency Management provides for the comprehensive, integrated emergency planning, preparedness, and response programs throughout the Department's field operations. The program develops and implements specific programs, plans and systems to minimize the impact of emergencies on national security, worker and public safety, and the environment. The program provides overall coordination and consultation regarding the Department's Emergency Management System. This includes emergency assistance and mobilization under the Federal Response Plan to radiological and non-radiological hazardous materials events, or in the event of malevolent threats or nuclear materials smuggling. The program promulgates Departmental requirements and implementing guidance, and conducts readiness assurance activities to ensure an effective emergency operations system is in place at Departmental facilities.

The program coordinates inter-agency and intra-Departmental emergency planning, preparedness and exercises, and coordinates with state and local governments, international agencies, foreign governments, and industry on emergency planning, preparedness and exercise issues.

Total, Nuclear Weapons Incident Response	102,138	83,755	89,694

Explanation of Funding Changes

	FY 2004 vs. FY 2003 ($000)
Emergency Response	
NEST increase supports restructuring of radiological assets to provide full geographic coverage and faster response times to potential incidents throughout the country.	+$2,000
Increase continues operation of the TRIAGE program to provide the nation's first responders with 24 hour call-in access to nuclear science expertise when confronted with an incident potentially involving nuclear materials	+$939
Increase supports establishment of a secure data connection system allowing field response teams to access libraries of highly technical and sensitive information directly as needed to provide incident support.	+$1,000
Increase enables the program to comply with federal direction to provide detection and response support to upcoming international events.	+$2,000
Emergency Management	0
Total Funding Change, Nuclear Weapons Incident Response	+$5,939

Construction

Mission Supporting Goals and Measures

The Construction subprogram of Readiness in Technical Base and Facilities (RTBF) includes the cost of new and ongoing line-item construction projects which support the nuclear weapons complex, but are not directly attributable to Directed Stockpile Work (DSW) or a specific campaign. Since submission of the FY 2003 Congressional Budget, the Deputy Administrator for Defense Programs and the Associate Administrator for Facilities and Operations have initiated an Integrated Construction Program Plan (ICPP) for the National Nuclear Security Administration. The ICPP is a planning and prioritization document that integrates the line item construction plans included in the nuclear weapons complex sites' Ten Year Comprehensive Site Plans with the FutureYears Nuclear Security Program (FYNSP) in support of NNSA's Planning, Programming, Budgeting and Evaluation (PPBE) process. The FY 2004 request reflects the results of this new planning, integration, and prioritization effort. All projects requested are supported in the current version of the ICPP.

FY 2003 Issues

It should be noted that NNSA is evaluating several issues that may impact the construction project profiles in this request, including the FY 2003 Continuing Resolutions and potential changes in the FY 2003 appropriations. Three new starts in FY 2003 that are driven by Life Extension Program (LEP) schedules, 03-D-121, Gas Transfer Capacity Expansion at Kansas City, 03-D-122, Purification Facility at Y-12, and 03-D-123, SNM Component Requalification Facility at Pantex have been delayed due to the Continuing Resolutions, and may have resulting cost or schedule impacts. In addition, there a number of planned reallocations from the original FY 2003 request that may be proposed as part of a reprogramming action after enactment of the FY 2003 appropriation:

Planned reallocation from deferred, cancelled or revised projects to projects that support the Life Extension Program (LEP):

03-D-122, Purification Facility, Y-12	+$7,384,000
03-D-123, SNM Component Requalification Facility, PX	+ 3,620,000
03-D-101, Sandia Underground Reactor Facility	- 2,000,000
03-D-103, Project Engineering and Design	- 4,400,000
02-D-103, Project Engineering and Design	- 4,604,000
Total Change	$ 0

The FY 2004 requests included in this budget for the Purification Facility and the SNM Component Requalification Facility assume that these reallocations will occur.

Planned reallocation from TA-18 Mission Relocation design subproject, 01-D-103, Project Engineering and Design (-$6,164,000) to RTBF/Program Readiness (+$6,164,000) to support critical pre-design activities.

Planned reallocation from cancelled or delayed design projects in 02-D-103, Project Engineering and Design (-$5,335,000) to Tritium Readiness (+$5,335,000) for APT closeout.

FY 2004 Request

The FY 2004 RTBF Construction request increases by $78,030,000 from the FY 2003 request. The funding supports the mortgages for all ongoing projects, as well as initiating eight line items. In FY 2004, the Microsystems and Engineering Sciences Applications (MESA) Complex project at Sandia National Laboratories (01-D-108) is displayed with the Engineering Campaigns, which the project directly supports.

The new line items requested in FY 2004 are:

- 04-D-101, Test Capabilities Revitalization, Phase I at Sandia National Laboratories (SNL) to address the aging and deterioration of physical weapons testing facilities and infrastructure.
- 04-D-102, Exterior Communications Infrastructure Modernization to modernize and integrate the exterior communications duct bank system that provides data, voice, dedicated security communications and facility control systems connectivity within Tech Area I of the SNL New Mexico site.
- 04-D-103, Project Engineering and Design, which will initiate design for two new subprojects: a new High Explosive Pressing Facility at the Pantex Plant and the Replace Fire Station 2 subproject to replace the existing undersized fire station facility at the Nevada Test Site (NTS).
- 04-D-104, National Security Sciences Building to replace the 47-year old SM-43 (Administration) Building at the Los Alamos National Laboratory (LANL).
- 04-D-125, Chemistry and Metallurgy Research (CMR) Facility Replacement to relocate and consolidate mission critical analytical chemistry, material characterization, and actinide research capabilities, to ensure continuous national security mission support beyond 2010 at LANL.
- 04-D-126, Building 12-44 Production Cells Upgrade at the Pantex Plant will modify an existing facility to increase capacity to meet the impact of changing weapon complexity, projected workload, and life extension program activities.
- 04-D-127, Cleaning and Loading Modifications (CALM) at the Savannah River Site (SRS) to modify an existing reservoir loading line to enable filling of Acorn reservoirs and to provide an additional facility for cleaning Acorn reservoirs prior to filling in order to provide the capacity necessary to support stockpile refurbishment requirements.
- 04-D-128, TA-18 Mission Relocation Project, LANL to provide a secure, modern location for conducting general purpose nuclear materials handling activities.

In response to the direction included in the Conference Report accompanying the Energy and Water Development Act for FY 2002, NNSA is implementing DOE's reporting requirements on the elimination of excess facilities. Beginning in FY 2002, facilities that are demolished, transferred to other federal agencies, out-leased, or sold to other parties count as elimination of excess facilities and can be "banked" as square feet reductions at each site. These site "banks" of excess facilities eliminated can be carried over from year to year and used as offsets to future new construction facilities. Construction projects started prior to FY 2003 will not be counted against this requirement. FY 2003 approved construction projects and out-year construction projects will count against a site's excess eliminated "bank" at the time of beneficial occupancy. DOE will utilize the Department's Facilities Information Management System and the Project Analysis and Reporting System for meeting this Congressional reporting requirement.

Subprogram Goal

State-of-the-art facilities and infrastructure and advanced scientific and technical tools, within the approved baseline cost and schedule, to ensure a reliable nuclear weapons stockpile.

Performance Indicators

Number of engineering designs initiated [Critical Decision (CD)-1]on schedule.
Number of projects starting construction [CD-3]on schedule.
Number of construction projects completed [CD-4] within approved scope, cost, and schedule baselines.

Annual Performance Results and Targets

FY 2002 Results	FY 2003 Targets	FY 2004 Targets
Initiated design (CD-1) on seven projects: -Engineering Technology Complex Upgrades, LLNL -Exterior Communications Infrastructure Modernization, SNL -Test Capabilities Revitalization, Phase I, SNL -Gas Transfer Capacity Expansion, KCP -Special Nuclear Material Component (SNM) Requalification Facility, PX -Highly Enriched Uranium Materials Facility, Y-12 -Purification Facility, Y-12	Initiate design (CD-1) on five projects: -Chemistry and Metallurgy Research Replacement, LANL -Building 12-64 Production Bay Upgrade, PX -Building 12-44 Production Cells Upgrade, PX -Cleaning and Loading Modifications, SRS -Beryllium Manufacturing Facility, Y-12	Initiate design (CD-1) on seven projects: -High Explosives Pressing Facility, PX -LIGA Technologies Facility, SNL -Energetic Materials Processing Complex, LLNL -Tritium Facility Modernization, LLNL -Replace Fire Station 2, NTS -National Security Sciences Building (SM-43 Replacement), LANL -TA-18 Mission Relocation Project, LANL
Initiated construction (CD-3) on three projects: -Sensitive Compartmented Information Facility, LLNL -Atlas Relocation to the Nevada Test Site, NTS -Engineering Technology Complex Upgrades (long-lead tools), LLNL	Initiate construction (CD-3) on four projects: -Gas Transfer Capacity Expansion, KCP -Weapons Evaluation Test Laboratory, SNL -Purification Facility, Y-12 -SNM Component Requalification Facility (Long Lead Procurement), PX	Initiate construction (CD-3) on eight projects: -Exterior Communications Infrastructure Modernization, SNL -Test Capabilities Revitalization, Phase I, SNL -Chemistry and Metallurgy Research Replacement (Light Lab/Office Bldg), LANL -Special Nuclear Material Component Requalification Facility, PX -Building 12-44 Production Cells Upgrade, PX -Highly Enriched Uranium (HEU) Materials Facility, Y-12 -National Security Sciences Building (SM-43 Replacement), LANL

-Electrical Power System Safety, Communications, and Bus Upgrade, NTS

Completed construction on seven projects (CD-4):

-Central Health Physics Calibration Facility, LANL
-138kV Substation Modernization, NTS
-Renovate Existing Roads, NTS
-Technology Support Center, SNL
-Chemistry and Metallurgy Research Upgrade, LANL
-Rapid Reactivation, SNL
-Life Safety Upgrades, Y-12

Complete construction on five projects (CD-4):

-Model Validation and System Certification Test Center, SNL
-Neutron Tube Target Loading, LANL
-Rapid Reactivation, LANL
-Roads & Parking Areas (FCAP), PX
-Structural Upgrades, KCP

Complete construction (CD-4) on nine projects:

-Sensitive Compartmented Information Facility (SCIF), LLNL
-Isotope Sciences Facility, LLNL
-Sewage Treatment Quality Upgrade, PX
-Weapons Evaluation Test Laboratory (WETL), SNL
-Joint Computational Engineering Laboratory, SNL
-Tritium Consolidation, (SMRI), SRS
-Power Supply (FCAP), Y-12
-Press (FCAP), Y-12
-Boilers and Controls, KCP

Funding Schedule

(dollars in thousands)

	FY 2002	FY 2003	FY 2004	$ Change	% Change
Construction	134,118	195,346	273,376	78,030	39.9%
Total, Construction	134,118	195,346	273,376	78,030	39.9%

Detailed Program Justification

(dollars in thousands)

	FY 2002	FY 2003	FY 2004
04-D-101, Test Capabilities Revitalization, Phase I, SNL	0	0	36,450
04-D-102, Exterior Communications Infrastructure Modernization, SNL	0	0	20,000
04-D-103, Project Engineering and Design, VL	0	0	2,000
04-D-104, National Security Sciences Building, LANL	0	0	50,000
04-D-125, Chemistry and Metallurgy Research (CMR) Facility Replacement, LANL	0	0	20,500

	(dollars in thousands)		
	FY 2002	FY 2003	FY 2004
04-D-126, Building 12-44 Production Cells Upgrade, PX	0	0	8,780
04-D-127, Cleaning and Loading Modifications (CALM), SRS		0	2,750
04-D-128, TA-18 Mission Relocation Project, LANL	0	0	8,820
03-D-101, Sandia Underground Reactor Facility (SURF), SNL	0	2,000 [a]	0
03-D-103, Project Engineering and Design, VL	0	15,539 [a]	10,570
03-D-121, Gas Transfer Capacity Expansion, KC	0	4,000	15,300
03-D-122, Purification Facility, Y-12	0	20,800 [a]	0
03-D-123, SNM Component Requalification Facility, PX	0	3,000 [a]	7,628
02-D-103, Project Engineering and Design, VL	17,542	27,245 [a]	10,950
02-D-105, Engineering Technology Complex Upgrade, LLNL	4,674	10,000	9,776
02-D-107, Electrical Power Systems Safety, Communications and Bus Upgrades, NV	3,451	7,500	2,887
01-D-103, Project Engineering and Design, VL	19,389	6,164 [a]	1,600
01-D-107, Atlas Relocation to the Nevada Test Site, NV	3,300	4,123	0
01-D-124, Highly Enriched Uranium Materials Facility, Y-12	0	25,000	45,000
01-D-126, Weapons Evaluation Test Laboratory, PX	7,700	8,650	2,838
01-D-800, Sensitive Compartmented Information Facility, LLNL	12,993	9,611	0
99-D-103, Isotope Sciences Facility, LLNL	4,400	4,011	0
99-D-104, Protection of Real Property (Roof Reconstruction - PH II), LLNL	2,800	5,915	3,500
99-D-106, Model Validation and Systems Certification Test Center, SNL	4,955	0	0
99-D-125, Replace Boilers and Controls, KC	300	0	0
99-D-127, SMRI-Kansas City Plant, KC	22,200	29,900	12,475

[a] The FY 2003 amounts reflected in this table are the original FY 2003 Congressional requests. A number of planned reallocations from the original FY 2003 request will be proposed as part of a reprogramming action after enactment of the FY 2003 appropriation. The planned reallocations are described in detail in the individual construction project data sheets.

	(dollars in thousands)		
	FY 2002	FY 2003	FY 2004
99-D-128, SMRI-Pantex Plant, PX	3,300	407	0
98-D-123, SMRI-Tritium Facility Modernization and Consolidation, SR	13,700	10,481	0
98-D-124, SMRI-Y-12 Consolidation	6,694	0	0
97-D-123, Structural Upgrades, KC	2,817	0	0
96-D-102, Stockpile Stewardship Facility Revitalization, Phase VI, VL	2,900	1,000	1,552
90-D-124, High Explosive Synthesis Facility, PX	417	0	0
88-D-125, High Explosive Machining Facility, PX	586	0	0
Total, Construction	**134,118**	**195,346**	**273,376**

Explanation of Funding Changes

	FY 2004 vs. FY 2003 ($000)
Construction	
# Increase supports the initiation of seven new construction line items; initiates a new FY 2004 Project Engineering and Design line item to begin design on two new subprojects, and supports follow-on funding to complete design and other activities initiated under the Project Engineering and Design line items for FY 2001, FY 2002 and FY 2003; and supports mortgages for ongoing projects at planned levels	78,030
Total Funding Change, Construction	**78,030**

04-D-101, Test Capabilities Revitalization (TCR) Phase I
Sandia National laboratories, New Mexico

As part of construction planning and integration, a decision was made to execute this project in two phases. The cost and schedule originally submitted under Project Engineering and Design, 02-D-103, presented Phase I and Phase II as one project . The following estimates are for Phase I only, which addresses the Aerial Cable Facility and the Thermal Test Complex. Phase II will be a separate line item and will address the Sled Track, Centrifuge, Mechanical Shock, Vibro-acoustics, Central Services, and the consolidation of multiple TA-I activities in the new Engineering Sciences Complex (ESC).

This project is still in the Planning Phase. As a result, the cost and schedule are preliminary estimates and are subject to change once the Performance Baseline is approved by the Acquisition Executive at the completion of the preliminary design (Critical Decision 2).

1. Construction Schedule History

	Fiscal Quarter				Total Estimated Cost ($000)	Total Project Cost ($000)
	A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
FY 2004 Budget Request (*Preliminary Estimate*)	3Q 2002	4Q 2003	2Q 2004	3Q 2005	40,940	47,317

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
Design [a]			
2002	3,090	3,090	1,203
2003	1,400	1,400	3,287
Construction			
2004	36,450	35,257	30,239
2005	0	1,193	6,176
2006	0	0	35

[a] Design funding was appropriated in 02-D-103, Project Engineering and Design (PED).

3. Project Description, Justification and Scope

This project provides funding for the construction of Test Capabilities Revitalization (TCR), Phase I. Project Engineering and Design funding under line item 02-D-103 was provided for Architect-Engineering (A-E) services to develop and complete preliminary and final design of TCR Phase I, which will be completed during FY 2003.

Project Description

The Test Capabilities Revitalization (TCR) project at Sandia National Laboratories in Albuquerque must provide the means to field the capabilities needed to maintain and refurbish nuclear weapons in accordance with Directed Stockpile Work (DSW) schedules to sustain confidence in their safety, security, and reliability indefinitely under the nuclear testing moratorium and arms reduction treaties. The primary line item objective is to revitalize, enhance, and integrate the test facilities and equipment required to enable Sandia to reliably, effectively, safely, and securely meet the DSW test obligations. Specifically, TCR must accomplish the following.

- Provide the test capabilities needed to:
  - Qualify weapons to the Stockpile-to-Target Sequence (STS), including testing at the system-, subsystem-, and component-levels.
  - Support weapons modifications, alterations, and Phase 6.3 and 6.4 work.
  - Maintain the capability to design and develop new weapons.
  - Support surveillance and investigation activities, including resolution of Significant Finding Investigations (SFIs).
- Modernize and integrate Sandia's Nuclear Weapons Enterprise (facilities and capital equipment) in time to meet Life Extension Program (LEP), weapon development, and DSW and Advanced Scientific Computing (ASC) program, and Weapons Systems Engineering Certification Campaign milestones.
- Execute the project without adversely impacting the ongoing DSW test programs (e.g., LEP, ASC, and Weapons Systems Engineering Certification Campaign).
- Provide a 25-year facility economic lifecycle for each test capability.
- Provide facilities that allow operations to conform to best industry ES&H practices and that address mission security such as Secret Restricted Data (SRD) requirements.
- Conduct work consistent with the Integrated Safety Management System (ISMS).
- Integrate the TCR line item with the Model Validation and Systems Certification Test Center (MVSCTC) line item project (99-D-106) and the Capabilities Modernization General Plant Project (GPP).

Justification:

Today, as the LEP prepares to address the backlog of postponed, nuclear weapons refurbishment work, Sandia faces a similarly challenging backlog of postponed, but urgently needed, renovation and renewal work on the physical testing facilities and infrastructure required to support those LEP tasks. The goal of the Test Capabilities Revitalization (TCR) project is to ensure that NNSA is fully prepared to meet

the physical testing demands of the LEP mission under any circumstances. An operational "fit-for-use" survey of existing physical testing capabilities at Sandia, cross-referenced against currently scheduled or anticipated LEP requirements, has revealed the need to renovate, rebuild, or otherwise revitalize six different physical testing capability sites, the bulk of which are located in Sandia's Technical Area III (TA-III). TCR must also consolidate numerous other testing capabilities currently located throughout Technical Area I (TA-I) by providing a new facility in TA-I. The objective of the proposed TCR project is to redress the aging and deterioration of physical testing facilities and infrastructure in an orderly, integrated, efficient, organized, and cost-effective manner.

As one of the National Nuclear Security Administration's three Defense Programs National Laboratories, Sandia plays a unique and essential role in meeting the NNSA's responsibilities with regard to the maintenance of the United States' Nuclear Weapons Stockpile. To meet the challenge of maintaining a continuously aging stockpile and sustaining credible deterrence in an era of no new design or production, the Department of Energy and National Nuclear Security Administration developed a process for the systematic development of replacements for those specific weapons components with an identified potential to be compromised by the effects of aging. The demands placed on the development of a replacement component under the LEP process are similar to the very stringent demands placed on the development of any weapon component. To ensure the highest standards for safety, security, and reliability under all possible circumstances, all weapon component designs must go through a rigorous engineering process and, although modern computational modeling and simulation developments are helping to streamline the analysis and testing processes, subsequent physical testing is still required to qualify any component for use in the stockpile. This line item assures that the required testing capabilities will be available.

Scope:

The work required to support the LEP mission encompasses revitalization of the following Phase I full-scale test and laboratory-scale capabilities located within SNL Tech Areas I and III.

Test Capability: Aerial Cable Facility

The Aerial Cable Facility must perform accelerated pull-down tests in support of bomb qualification tests and weapons development activities. This test capability must provide controlled simulations of the worst-case impact environments experienced by weapons systems and shipping containers. Gravity drop tests are performed from a cable suspended between two peaks, giving up to a 600-foot vertical distance for acceleration. A rocket-assisted (320-foot sled track) pull-down technique is used to provide higher impact velocities when gravity tests are not adequate. This revitalization is needed to support B61 ALT 357 replacement testing for the aging CSA.

The major investments at the Aerial Cable Facility will provide site improvements, including drainage, grading, road upgrades (gravel), security enhancements, water and sewer, and the installation of permanent power, communications, and a data connectivity infrastructure. Additionally, this project will provide test infrastructure upgrades, including repairs and replacements to pulleys, cables, winch facilities, anchors, and the rocket sled catch box, as well as construction of an approximately 5,000 square foot Aerial Cable Control (ACC) support facility to provide secure storage, data acquisition and control, and work space for personnel assigned to the test site.

Test Capability: Thermal Test Complex

The Thermal Test Complex (TTC) is a collection of new facilities to be constructed on a new enclosed

site in the northern section of Sandia National Laboratories Technical Area III. The four major TTC components are:

- **FLAME/Radiant Heat test cell**

  The components within the existing, but antiquated Thermal Radiant Heat Facility which provide controlled temperature and heat flux environments using quartz lamps (up to 3,000˚C) to develop and validate thermal response models, and to certify transportation containers and weapons components, assemblies, and systems for both normal and abnormal thermal environments will be integrated into the new FLAME/Radiant Heat Test Cell within the TTC. The new FLAME/Radiant Heat Test Cell will be a cylindrical water-jacketed fire test cell. The facility will be used to investigate the properties of fire environments in an enclosed, flow and temperature-controlled structure. Effluents will be conducted to the new Electrostatic Precipitator (ESP) for the removal of emission particulates. The consolidation of the Radiant Heat and FLAME test capabilities will provide the ability to simulate combined convective-radiative thermal environments. This new capability, needed to meet DSW test requirements, does not exist anywhere in the world.

- **Crossflow Fire Test Facility (XTF)**

  The new Crossflow Fire Test Facility (XTF) will provide a test structure to perform indoor burn tests on test articles that contain explosives and/or materials that may require an air system to clean the fire effluent in accordance with regulatory standards. This structure will be designed to provide a controllable airflow throughout its test range. The XTF is designed to safely test the effects of thermal flux on an article.

- **Thermal Test Facility (TTF)**

  The TTF will include a new enclosed Radiant Heat Test cell, an Abnormal Thermal Environments laboratory (for sub-grid physics model development and validation and the development of fire sciences diagnostics technologies), and additional space to house the control room, secure storage, light laboratories, environmental chambers, office space (six to eight offices), and support areas such as the new central utilities building (CUB).

- **Electrostatic Precipitator (ESP)**

  A dry filtration mechanism will be designed and installed to provide effluent treatment to meet the air emission requirements prescribed by Bernalillo County.

Phase I Project Milestones:

FY 2002:	Start Design (using funds appropriated in 02-D-103)	3Q
FY 2003:	Complete Design (using funds appropriated in 02-D-103)	4Q
FY 2004:	Construction Start - Thermal Test Complex	2Q
	Construction Start - Aerial Cable	2Q
FY 2005:	Construction Complete - Thermal Test Complex	3Q
	Construction Complete - Aerial Cable	3Q
FY 2006:	Project Closeout	1Q

4. Details of Cost Estimate

(dollars in thousands)

	Current Estimate	Previous Estimate
Design Phase (11.0% of TEC) [a]	4,490	N/A
Construction Phase		
Improvements to Land	5,768	N/A
Buildings	13,038	N/A
Special Equipment	1,140	N/A
Other Structures	8,205	N/A
Standard Equipment	80	N/A
Inspection, Design and Project Liaison, Testing, Checkout and Acceptance	1,834	N/A
Construction Management (1.2% of TEC)	496	N/A
Project Management (2.7% of TEC)	1,126	N/A
Total, Construction Costs (77.4% of TEC)	31,687	N/A
Contingencies		
Construction Phase (11.6% of TEC)	4,763	N/A
Total, Line Item Costs (TEC) [b]	40,940	N/A

5. Method of Performance

The A/E Title I and II design (and Title III services during the construction contract) was competitively bid and placed on a firm fixed price basis using the best value award selection process. The construction contract will be competitively bid and placed on a firm fixed price basis. Other procurements will follow standard DOE-approved Sandia procurement practices and have been or will be placed on a time and materials or firm fixed price basis. M&O contractor staff may be utilized in areas involving special concerns.

[a] Design funding was appropriated in 02-D-103, Project Engineering and Design (PED).

[b] This cost estimate is preliminary and will be refined when the performance baseline is established at CD-2.

6. Schedule of Project Funding

(dollars in thousands)

	Prior Years	FY 2002	FY 2003	FY 2004	Outyears	Total
Project Costs						
Facility Costs						
Design [a]	0	1,203	3,287	0	0	4,490
Construction	0	0	0	30,239	6,211	36,450
Total, Line Item TEC	0	1,203	3,287	30,239	6,211	40,940
Total Facility Costs (Federal and Non-Federal)	0	1,203	3,287	30,239	6,211	40,940
Other Project Costs						
Conceptual design cost	446	1,515	0	0	0	1,961
Decontamination & decommissioning	0	0	0	656	457	1,113
Other ES&H costs	0	348	224	144	195	911
Other project-related costs	326	745	754	338	229	2,392
Total Other Project Costs	772	2,608	978	1,138	881	6,377
Total Project Cost (TPC)	772	3,811	4,265	31,377	7,092	47,317

7. Related Annual Funding Requirements

(FY 2006 dollars in thousands)

	Current Estimate	Previous Estimate
Related annual costs		
Annual facility operating costs	8,846	N/A
Annual facility maintenance/repair costs [b]	0	N/A
Programmatic operating expenses directly related to the facility	TBD	N/A
Total related annual funding (operating from FY 2007 through FY 2032)	8,846	0

[a] Design funding was appropriated in 02-D-103, Project Engineering and Design (PED)

[b] Maintenance costs are included with facility operating costs.

04-D-102, Exterior Communications Infrastructure Modernization (ECIM), Sandia National Laboratories, Albuquerque, New Mexico

This project is still in the Planning Phase. As a result, the cost and schedule are preliminary estimates and are subject to change once the Performance Baseline is approved by the Acquisition Executive at the completion of the preliminary design (Critical Decision 2).

1. Construction Schedule History

	Fiscal Quarter				Total Estimated Cost ($000)	Total Project Cost ($000)
	A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
FY 2004 Budget Request *(Preliminary Estimate)*	3Q 2002	2Q 2004	3Q 2004	3Q 2006	22,500 [a]	25,178

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
Design			
200	1,497	1,497	738
2003	1,003	1,003	1,530
2004	0	0	232
Construction			
2004	20,000	20,000	3,741
2005	0	0	13,019
2006	0	0	3,240

[a] The TEC includes the cost of preliminary and final design ($2,500,000), which was appropriated in 02-D-103, Project Engineering and Design.

3. Project Description, Justification and Scope

This project provides funding for the construction of the Exterior Communication Infrastructure Modernization (ECIM) Project. Project Engineering and Design funding under line item 02-D-103 was provided for Architect-Engineering (A-E) services to develop and complete preliminary and final (Title I and Title II) design of ECIM. This design effort will be completed during FY 2004.

The objectives of this project are to modernize and integrate the exterior communications duct bank system that provides data, voice, dedicated security communications and facility control systems connectivity within Tech Area I of the Sandia National Laboratories (SNL) New Mexico site. Specific program requirements are to provide a robust communications infrastructure to enable and sustain ongoing NNSA mission activities and to fulfill SNL/NM's landlord responsibility to sustain a viable and cost-effective site infrastructure.

The original duct bank system at Sandia National Laboratories, New Mexico (SNL/NM), much of which is still used today, was installed in the 1950's. It is composed of collapsing clay and ceramic duct banks mixed with direct burial cables. Manholes often flood and remain filled with water for long periods of time. Some of the 50-year-old copper cables are constructed with hazardous lead sheathing and deteriorating paper composites that have become unreliable. Optical fiber cables installed in the 1970's have become inadequate in capacity, brittle, and difficult to maintain and service.

The infrastructure system currently supports a workforce of approximately 9,000 people at the SNL/NM site. Many of SNL's current and emerging capabilities rely heavily on the communications infrastructure. Ideally, this infrastructure system enables the high-speed, high-fidelity transmission of data within and between buildings, and across sites, in support of a multitude of mission activities. SNL/NM invested $30 million to modernize the interior cabling systems within most large buildings on the site from 1992 through 1996. A major portion of interior telecommunication cabling has been completed, thereby permitting modern internal connectivity and enhanced maintenance cost effectiveness. However, these enabled facilities now communicate with each other with an aging, failing, and incapable inter-building cabling system. The ECIM project addresses these issues and integrates voice, data, security and access control telecommunications systems as well as providing the flexibility to adjust to future requirements. The new exterior infrastructure will provide a combination of new and renovated exterior duct banks, manholes, cabling and building termination equipment within Tech Area I of the SNL/NM site.

Project Milestones:

FY 2002: Start Design (using funds appropriated in 02-D-103)	3Q
FY 2004: Complete Design (using funds appropriated in 02-D-103)	2Q
FY 2004: Construction Start	3Q
FY 2006: Construction Complete	3Q
FY 2007: Project Closeout	1Q

4. Details of Cost Estimate

(dollars in thousands)

	Current Estimate	Previous Estimate
Design Phase (11.1% of TEC) [a]	2,500	N/A
Construction Phase		
Utilities	14,091	N/A
Inspection, Design and Project Liaison, Testing, Checkout and Acceptance	2,611	N/A
Construction Management (1.6% of TEC)	350	N/A
Project Management (0.7% of TEC)	149	N/A
Total, Construction Costs (76.4% of TEC)	17,201	N/A
Contingencies		
Construction Phase (12.4% of TEC)	2,799	N/A
Total, Line Item Costs (TEC) [b]	22,500	N/A

5. Method of Performance

The A/E Title I and II design and Title III services during the construction contract was competitively bid and placed on a firm fixed price basis using the best value award selection process. The construction contract will be competitively bid and placed on a firm fixed price basis. Other procurements will follow standard DOE-approved Sandia procurement practices and have been or will be placed on a time and materials or firm fixed price basis. M&O contractor staff may be utilized in areas involving special concerns.

[a] The TEC includes the cost of preliminary engineering and final design ($2,500,000) which was appropriated in 02-D-103, Project Engineering and Design (PED). This is a preliminary baseline estimate. The performance baseline will be established following completion of preliminary design and Critical Decision 2.

[b] This cost estimate is preliminary and will be refined when the performance baseline is established at CD-2.

6. Schedule of Project Funding

(dollars in thousands)

	Prior Years	FY 2002	FY 2003	FY 2004	Outyears	Total
Project Costs						
Facility Costs						
Design	0	738	1,530	232	0	2,500
Construction	0	0	0	3,741	16,259	20,000
Total, Line Item TEC	0	738	1,530	3,973	16,259	22,500
Total Facility Costs (Federal and Non-Federal)	0	738	1,530	3,973	16,259	22,500
Other Project Costs						
Conceptual design cost	578	0	0	0	0	578
Decontamination & decommissioning	0	0	0	58	293	351
Other ES&H costs	0	0	40	42	19	101
Other project-related costs [a]	315	603	352	169	209	1,648
Total Other Project Costs	893	603	392	269	521	2,678
Total Project Cost (TPC)	893	1,341	1,922	4,242	16,780	25,178

7. Related Annual Funding Requirements

(FY 2007 dollars in thousands)

	Current Estimate	Previous Estimate
Related annual costs		
Annual facility operating costs	40	N/A
Annual facility maintenance/repair costs	40	N/A
Total related annual funding (operating from FY 2007 through FY 2048)	80	N/A

[a] Including tasks such as the Project Execution Plan, Pre-Title I Project Management, Design Criteria, Architect/Engineer Selection, Value Engineering Study, Independent Cost Estimate, Site Surveys, As-Built Surveys, Utility Location Services, Administrative Support, Operations and Maintenance Support, Risk Management Plan, Project Plan, Acquisition Execution Plan, CD-1 Presentation, Project Controls Support, and Internal/External Reviews.

04-D-103, National Nuclear Security Administration
Project Engineering and Design (PED),
Various Locations

1. Construction Schedule History

	Fiscal Quarter				Total Estimated Cost ($000)
	A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete	
FY 2004 Budget Request (*A-E and technical design only*)	1Q 2004	3Q 2006	2Q 2006	2Q 2008	3,500 [a]

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
2004	2,000	1,800	1,300
2005	1,500	1,700	1,500
2006	0	0	700

3. Project Description, Justification and Scope

This project provides for Architect-Engineering (A-E) services (Title I and Title II) for several National Nuclear Security Administration (NNSA) construction projects, allowing designated projects to proceed from conceptual design into preliminary design (Title I) and definitive design (Title II). The design effort will be sufficient to assure project feasibility, define the scope, provide detailed estimates of construction costs based on the approved design and working drawings and specifications, and provide construction schedules, including procurements. The designs will be extensive enough to establish performance baselines and to support construction or long-lead procurements in the fiscal year in which line item construction funding is requested and appropriated.

Conceptual design studies are prepared for each project using Operations and Maintenance funds prior to receiving design funding under a PED line item. These conceptual design studies define the scope of the project and produce a rough cost estimate and schedule.

FY 2004 PED design projects are described below. While not anticipated, some changes may occur due to continuing conceptual design studies or developments occurring after submission of this data sheet. These changes will be reflected in subsequent years. Preliminary estimates for the cost of Title I and II

[a] The TEC estimate is for design only for the subprojects currently included in this data sheet.

design and engineering efforts for each subproject are provided, as well as very preliminary estimates of the Total Estimated Cost (including physical construction) of each subproject.

FY 2004 Proposed Design Projects

04-01: NTS Replace Fire Station No. 2, Nevada Test Site

Fiscal Quarter				Total Estimated Cost (Design Only ($000)	Preliminary Full Total Estimated Cost Projection ($000)
A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
1Q 2004	1Q 2005	2Q 2006	4Q 2007	800	9,000 - 10,000

Fiscal Year	Appropriations	Obligations	Costs
2004	800	800	800
2005	0	0	0

This design project provides for the Architect-Engineering (A-E) services to develop and complete preliminary and final (Title I & II) design for the proposed NTS Replace Fire Station No. 2, Nevada Test Site. This subproject will design the replacement for an existing undersized fire station facility built in 1966. The new Fire Station will be approximately 12,460 square feet, as compared to the existing 4,255 square foot facility, and will comply with National Fire Protection Association (NFPA) 1500 and provide the correct space to accommodate emergency response units. It will also provide administrative and dormitory space, as well as restrooms, a kitchen, training classrooms, storage, and support areas (i.e., medical treatment room). The facility will include all heating, ventilation, and air-conditioning (HVAC), fire protection, electrical, communications, and local area network (LAN) systems and a fiber optics communications network throughout the facility to meet present and projected requirements. The project will include all administrative equipment, furniture, and associated equipment necessary to operate the facility.

04-02: High Explosives (HE) Pressing Facility, PX

Fiscal Quarter				Total Estimated Cost (Design Only ($000)	Preliminary Full Total Estimated Cost Projection ($000)
A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
3Q 2004	3Q 2006	3Q 2006	2Q 2008	2,700	15,000 - 35,000

Fiscal Year	Appropriations	Obligations	Costs
2004	1,200	1,000	500
2005	1,500	1,700	1,500
2006	0	0	700

This design project provides for the Architect-Engineering (A-E) services to develop and complete preliminary and final (Title I & II) design for the proposed HE Pressing Facility at the Pantex Plant.

The proposed HE Pressing Facility consists of approximately 45,000 square feet, and includes the main pressing facility, a magazine storage area, and a ramp. Specifically, the facility will consist of :

- Powder Inspection/Weighing Bay
- Two large Oven Bays to heat the explosives prior to pressing
- Three Press Bays (2 Isostatic Presses and 1 Mechanical Press)
- X-Ray Bay to x-ray pressed pieces prior to machining
- Machining Bay for rough cut machining to reduce the quantity of explosives to be shipped to the next facility for final machining
- Staging Bays (3) for staging explosives powder, pressed pieces, and rough cut pressed pieces.

The explosives limits in this building will be 130 pounds of TNT for the pressing and operating bays and 500 pounds of TNT for the staging bays. This area of the building must be heavily constructed of reinforced concrete to meet explosives safety criteria. The inert section of this building will consist of offices, a training/break area, a tool crib, an equipment area, and a second floor for mechanical and electrical equipment supporting the presses. The magazine storage area will consist of 3 storage magazines and a loading dock. It will be earth covered, and the magazines will store explosive powder, pressed pieces, and rough cut hemispheres. An enclosed ramp will connect the magazine storage area with the pressing facility.

4. Details of Cost Estimate [a]

(dollars in thousands)

	Current Estimate	Previous Estimate
Design Phase [b]		
Preliminary and Final Design Costs (Design Drawings and Specifications)	2,975	N/A
Design Management Costs (10% of TEC)	350	N/A
Project Management Costs (5% of TEC)	175	N/A
Total, Design Costs (100% of TEC)	3,500	N/A
Total, Line Item Costs (TEC)	3,500	N/A

5. Method of Performance

Design services will be obtained through competitive and/or negotiated contracts. M&O contractor staff may be utilized in areas involving security, production, proliferation, etc. concerns.

6. Schedule of Project Funding

(dollars in thousands)

	Prior Years	FY 2003	FY 2004	FY 2005	Outyears	Total
Project Cost						
Facility Cost						
Project Engineering and Design	0	0	1,300	1,500	700	3,500
Total, Line item TEC	0	0	1,300	1,500	700	3,500
Total, Facility Costs (Federal and Non-Federal)	0	0	1,300	1,500	700	3,500
Other Project Costs						
Conceptual design costs	469	905	270	0	0	1,644
NEPA	45	100	30	5	0	180
Other project-related costs	181	0	0	295	1,250	1,726
Total, Other Project Costs	695	1,005	300	300	1,250	3,550
Total, Project Cost (TPC)	695	1,005	1,600	1,800	1,950	7,050

[a] This cost estimate is based upon direct field inspection and historical cost estimate data, coupled with parametric cost data and completed conceptual studies and designs, when available. The cost estimate includes design phase activities only. Construction activities will be requested as individual line items upon completion of Title I design.

[b] The percentages for Design Management; Project Management; and Design Phase Contingency are estimates base on historical records and are preliminary estimates.

04-D-104, National Security Sciences Building
Los Alamos National Laboratory, Los Alamos, New Mexico

The National Security Sciences Building is a design-build project requiring significant first year funding. The design-build approach offers many benefits for a project of this type, such as a single source for construction activities, cost control and accountability, and may be accommodated under the existing DOE Order for construction project management

1. Construction Schedule History

	Fiscal Quarter				Total Estimated Cost ($000)	Total Project Cost ($000)
	A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
FY 2004 Budget Request *(Preliminary Estimate)*	1Q 2004	1Q 2006	3Q 2004	2Q 2007 [a]	95,000	118,700

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
Design/ Construction			
2004	50,000	50,000	50,000
2005	45,000	45,000	45,000

3. Project Description, Justification and Scope

The Department of Energy (DOE) has tasked Los Alamos National Laboratory (LANL) with a core mission of enhancing global security by ensuring safety and confidence in the U.S. nuclear weapons stockpile, developing technical solutions to reduce the threat of weapons of mass destruction, and improving the environmental and nuclear materials legacy of the cold war. To carry out this enduring role in the Nation's nuclear weapons program requires LANL to develop/maintain a modern, safe, and reliable infrastructure. In support of this mission need, NNSA proposes the National Security Sciences Building Project to replace the 45-year-old SM-43 Building that is no longer suitable as LANL's primary facility for weapons designers, theoretical/computational research, and general management.

The project will provide office and research space to house theoretical and applied physics, computational sciences, and the Laboratory's program and senior management functions in support of the NNSA's Stockpile Stewardship Program (SSP). The National Security Sciences Building Project

[a] The preliminary planned completion for construction of the new building is in FY 2005. There will be startup costs in FY 2006 and the D&D of the old facility will continue until FY 2007, but these activities are being funded under Other Project Costs (OPC) and, therefore, are not included in the TEC costs in Section 2.

will continue the development of the theoretical-computational core at LANL that was started in FY 1999 with the Strategic Computing Complex (SCC) and the Nonproliferation and International Security Center (NISC) projects. Costs for replacing the existing SM-43 Building, as well as decommissioning and demolition of the existing SM-43 Building, are included in the scope of this project. In addition, the project will provide a replacement facility for the DOE/NNSA staff that is permanently assigned to Los Alamos. This new facility will allow the DOE/NNSA to proceed with the land transfer commitments that have been made previously with the county of Los Alamos.

Justification

The highest priority of the Stockpile Stewardship Program (SSP) is to ensure the operational readiness of the U.S. Nuclear weapons stockpile. The National Security Sciences Building Project will support this objective by providing modern productive facilities for theoretical and applied physics, computational science, program management and general management that will be important in ensuring stockpile readiness. Functional, safety and security obsolescence of the existing SM-43 Building is the primary reason that this project is required. The most problematic aspects are as follows:

Occupant Safety - SM-43 has the highest level of occupancy of any building in Los Alamos. Codes and standards have evolved such that the building cannot economically be brought into compliance with today's requirements. The building structure does not meet current DOE or Uniform Building Code seismic requirements. A DOE sponsored structural evaluation, with peer review, indicates the seismic capacity is about 25 percent of that required by code. Should a design basis earthquake occur, it is anticipated that the SM-43 would experience extensive structural and non-structural damage, and or collapse. To further support this assessment, recent work to support Executive Order 12941 indicates SM-43 has the highest seismic risk at the Laboratory. The building design is not consistent with current National Fire Protection Association life safety codes; for example, the corridors are used for return air plenums, the building lacks sufficient separation walls, and deficiencies in emergency egress requirements exist.

The building also has multiple deficiencies regarding compliance with Americans with Disabilities Act requirements.

System Reliability - Most of the major systems are in need of significant investment in order to assure continuation of operations. Building condition evaluations indicate that most building systems are inadequate and no longer meet standards for office and light laboratory use. These systems include electrical, mechanical, plumbing, and the building envelope. Not only are many of the systems required to meet demands unforeseen in the early 50's, but system components are also failing due to age. With these component failures, it is becoming difficult to provide replacement parts. Programmatic work is being disrupted.

Cost of Operations - SM-43 cannot be operated indefinitely without significant investments for system replacements and upgrading. Although several upgrade projects e.g. fire protection and minor electrical safety upgrades, have been performed in SM-43, no significant "behind the wall" investments have been made. It is estimated that this 1955 building requires an additional $445K/year in energy costs over that required for a modern building of similar size. With increasing age and system degradation, the routine maintenance costs have also increased. It has been estimated that a new facility could reduce the operation and maintenance costs by as much

as 30 percent or by several million dollars per year. Estimates to refurbish the existing building exceed $100 million.

Security - Security concerns and the methods to counteract them have changed dramatically in the last 45 years. "Need-to-know" compartmentalization cannot be economically implemented in the existing SM-43 building due to the configuration of the electrical and ventilation systems. Compensatory measures needed to ensure the safety of building occupants under the current threat conditions are costly, and additional alarm and sensor installation has been "after the fact" and is not optimized, increasing operating and maintenance costs. The SM-43 building characteristics make it expensive to meet today's physical and cyber security needs.

Work Environment – An equally important consideration pertains to the building's most fundamental ergonomic deficiencies, or, simply, the "human factor." Los Alamos is staffed with employees dedicated to DOE missions that are living with the poor work environment and accepting the limitations of very little private space and the failing heating and cooling systems. However, more and more of these employees are nearing retirement, and the current working conditions are having a negative impact on the Laboratory's ability to recruit new staff. The substandard work environment is impacting not only today's productivity but also tomorrow's.

OLASO - The justification for replacing the DOE/NNSA Office of Los Alamos Site Operations (OLASO) includes the inefficiencies caused by age, plus the fact the land where the current structure sits has been committed to the county of Los Alamos as a result of the land transfer agreement between DOE and the county. A further advantage that the new structure will present is that it will be closer to the core of the National Laboratory making communication between NNSA and the contractor easier.

Project Scope

The National Security Sciences Building is currently planned to be located in TA-3 near the new SCC and NISC facilities. The project includes construction of approximately 275,000 square feet of office space that will house a staff of 700 (approximate) and the Laboratory's Central Records Management operations. The project will also construct a parking structure that provides parking for 400 additional cars in the TA-03 area. A 600-seat auditorium will also be included. The project will also decommission and demolish the existing SM-43 building. Decommissioning and Demolition of the existing 315,000 sq. ft. SM-43 Building is included as an institutionally funded other project cost (OPC) of the project.

The new OLASO facility will be built to house approximately 125 people and have special meeting rooms to facilitate interfacing with the general public. It will be sited in the TA-3 area near the core facilities of the Lab. The facility will have special communication and security features in order that the staff may perform their assigned actions within all existing regulations.

4. Details of Cost Estimate

(dollars in thousands)

	Current Estimate	Previous Estimate
Design Phase		
Preliminary and Final Design costs (Design Drawings and Specifications)	5,668	N/A
Design Management Costs (0.82% of TEC)	782	N/A
Project Management Costs (1.7% of TEC)	1,624	N/A
Total Design Costs (8.5% of TEC)	8,074	N/A
Construction Phase		
Improvements to Land [b]	0	N/A
Buildings	60,544	N/A
Other Structures (Parking Garage)	5,846	N/A
Utilities	3,091	N/A
Standard Equipment	1,735	N/A
Inspection, Design and Project Liaison, Testing, Checkout and Acceptance	1,845	N/A
Construction Management (4% of TEC)	3,780	N/A
Project Management (3.3% of TEC)	3,130	N/A
Total, Construction Costs (84.3% of TEC)	79,971	N/A
Contingencies		
Design Phase (.63% of TEC)	599	N/A
Construction Phase (6.7% of TEC)	6,356	N/A
Total Contingencies (7.3% of TEC)	6,955	N/A
Total, Line Item Costs (TEC) [c]	95,000	N/A

5. Method of Performance

Design, construction, and procurement will be accomplished by a competitive best value, fixed-price, and design-build contract. Design-build is a project delivery system where a single entity performs both the design and construction. Some advantages of design-build include a single source for construction activities, cost control and accountability. The baseline for the project will be established at CD-2 based on the selected Design/Build contractor's fixed-price proposal. The removal of existing utilities located on the building sites and installation of new perimeter utilities plus the construction of electrical services to the site will be performed by the site services contractor under fixed price contracts. The characterization work for the decommissioning and demolition of SM-43 will be accomplished under a negotiated procurement with a pre-qualified contractor. The demolition work will be accomplished

[b] Included with Buildings.

[c] This cost estimate is preliminary and will be refined when the performance baseline is established at CD-2.

under a competitive solicitation from pre-qualified contractors. The design and construction of the OLASO facility will also be completed using a design/build contractor.

6. Schedule of Project Funding

(dollars in thousands)

	Prior Years	FY 2002	FY 2003	FY 2004	Outyears	Total
Project Costs						
Facility Costs						
Design	0	0	0	8,673	0	8,673
Construction				41,327	45,000	86,327
Total, Line Item TEC	0	0	0	50,000	45,000	95,000
Total Facility Costs (Federal and Non-Federal)	0	0	0	50,000	45,000	95,000
Other Project Costs						
Conceptual design cost	1,430	0	0	0	0	1,430
NEPA documentation costs	210	0	0	65	0	275
Other ES&H Costs	50	0	0	80	40	170
Other project-related costs [a]	1,310	0	0	255	20,260	21,825
Total Other Project Costs	3,000	0	0	400	20,300	23,700
Total Project Cost (TPC)	3,000	0	0	50,400	65,300	118,700

[a] Project Management, Quality Assurance, LIR Implementation, Project Execution Plan, Siting Studies, Estimating Support, Scheduling and Controls Support, Safeguards and Security Analysis, Design-Build Procurement, Source Selection work, Value Engineering Study, Fire Hazards Assessment, Permits, Administrative Support, Operations and Maintenance Support, Operating Manuals & Procedures, Operations Testing, Readiness Assessment, and Decommissioning and Demolition of SM-43.

7. Related Annual Funding Requirements

(FY 2000 dollars in thousands)

	Current Estimate	Previous Estimate
Related annual costs		
Annual facility operating costs [b]	2,160	N/A
Annual facility maintenance/repair costs [c]	2,160	N/A
Programmatic operating expenses directly related to the facility [d]	130,000	N/A
Utility costs	1,440	N/A
Total related annual funding (operating from FY 2006 through FY 2026)	135,760	N/A

[b] The cost of operations are based on historical data and averages $4/square foot/year for the Office Building and the Auditorium. A rate of $2/square foot/year was used for the parking structure.

[c] Based on projected annual costs for LANL site services subcontractor as derived from historical maintenance and repair costs for new LANL facilities.

[d] Annual programmatic operating expenses are estimated based on representative operating expenses of 700 people. The majority of this funding is expected to come from DOE/NNSA for activities in support of the Stockpile Stewardship Program.

04-D-125, Chemistry and Metallurgy Research Facility Replacement, Los Alamos National Laboratory Los Alamos, New Mexico

The Total Estimated Cost for design of the Chemistry and Metallurgy Research Facility Replacement (CMRR) project has been decreased by $40,500,000 from the original Project Engineering and Design (PED) estimate (03-D-103) due to a revised acquisition strategy, whereby a design-build approach will be utilized. Under this approach, the design funding decrement has been moved out of PED and is requested within the construction part of this line item project.

1. Construction Schedule History

	Fiscal Quarter				Total Estimated Cost ($000)	Total Project Cost ($000)
	A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
FY 2004 Budget Request *(Preliminary Estimate)*	1Q 2004	3Q 2006	2Q 2004 [a]	1Q 2011	500,000 [b]	600,000

[a] Physical Construction Start: 2Q 2004 for light lab/office buildings and 3Q 2006 for Hazard Category II and III/IV buildings.

[b] The TEC includes the cost of design activities ($14,500,000) appropriated in 03-D-103, Project Engineering and Design (PED) to support design-build acqusition. This is a preliminary baseline estimate. The performance baseline will be established following completion of preliminary design and Critical Decision 2.

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
Design [c]			
2003	10,000	10,000	0
2004	4,500	4,500	14,500
Construction			
2004	20,500	20,500	1,700
2005	75,000	75,000	46,100
2006	110,000	110,000	71,200
2007	100,000	100,000	97,000
2008	100,000	100,000	97,000
2009	80,000	80,000	97,000
2010	0	0	75,000
2011	0	0	500

3. Project Description, Justification and Scope

Project Description

The Chemistry and Metallurgy Research Facility Replacement (CMRR) project seeks to relocate and consolidate mission critical analytical chemistry, material characterization, and actinide research and development capabilities, to ensure continuous national security mission support beyond 2010 at the Los Alamos National Laboratory (LANL).

Justification

In January 1999, the National Nuclear Security Administration (NNSA) approved a strategy for managing risks at the Chemistry and Metallurgy Research (CMR) Facility. This strategy recognized that the 50 year-old CMR Facility could not continue its mission support at an acceptable level of risk to public and worker health and safety without operational restrictions. In addition, the strategy committed NNSA and LANL to manage the existing CMR Facility to planned end of life in or around 2010, and to develop long-term facility and site plans to replace and relocate CMR capabilities elsewhere at LANL, as necessary to maintain support of national security missions. Since this strategy was approved, CMR capabilities have been restricted substantially, both by planned NNSA actions and unplanned facility outages that have included the operational loss of two of seven wings at the CMR Facility.

The consequence of the NNSA strategy and the continuing loss of CMR Facility capabilities is the need for a new facility to sustain national security missions at LANL while reducing risks to the public and workers.

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[c] Design funding appropriated in 03-D-103, Project Engineering and Design (PED). The TEC for design of the Chemistry and Metallurgy Research Building Replacement (CMRR) project was decreased by $40,500,000 due to a revised acquisition strategy, whereby a design-build approach will be utilized. Under this approach, the design funding decrement has been moved out of PED and is requested within the construction part of this line item project.

Project Engineering and Design funding provided in FY 2003 ($10,000,000) and FY 2004 ($4,500,000) will be used for preliminary design activities for both the Light Laboratory/Office Building and Nuclear Laboratory(s) elements of the project. FY 2004 construction funding requested in this line item will be used for initiation of design and construction for the light laboratory/office building component of CMRR and initiation of design activities for nuclear laboratory(s).

Scope

The scope for this project was developed through joint LANL/NNSA Integrated Nuclear Planning (INP) activities and workshops. The major CMRR scope elements resulting from INP activities are:

- Relocate existing CMR analytical chemistry and material characterization (AC/MC) capabilities at LANL.
- Special nuclear material storage for CMR AC/MC working inventory and overflow capacity for PF-4.

In addition to these two major elements, the following elements will be evaluated during conceptual design through the completion of option studies:

- Contingency space to accommodate future mission requirements.
- Large vessel containment and processing capabilities.
- Non-LANL user space requirements.
- Consolidation of LANL PF-4 AC/MC capabilities.

Net space requirements for the above listed scope elements within CMRR were developed through a LANL/NNSA INP workshop conducted in July 2001. The following space requirements were identified:

- 60,000 gross square feet of Hazard Category II space for AC/MC, large vessel containment and processing, material storage, and contingency space.
- 60,000 gross square feet of Hazard Category III/IV space for AC/MC and contingency space.
- 90,000 gross square feet for a light laboratory/office building.

Project Milestones

Light Lab/Office Building (design-build)

FY 2004	Initiate Design	1Q
FY 2004	Initiate Construction	2Q

Nuclear Laboratory(s)

FY 2004	Complete Conceptual Design	4Q
FY 2005	Complete Title I – Preliminary Design	1Q
FY 2006	Complete Title II – Final Design	3Q
FY 2011	Complete Title III – Construction	1Q
FY 2012	Complete Transition/Closeout	1Q

4. Details of Cost Estimate

(dollars in thousands)

	Current Estimate	Previous Estimate
Total, Design Phase (2.9% of TEC) [a]	14,500	N/A
Construction Phase		
Buildings	368,500	N/A
Construction Management (1.4% of TEC)	7,000	N/A
Project Management (5.0% of TEC)	25,000	N/A
Total, Construction Costs (80.1% of TEC)	400,500	N/A
Contingencies		
Construction Phase (17.0% of TEC)	85,000	N/A
Total, Line Item Costs (TEC) [b]	500,000	N/A

5. Method of Performance

An acquisition execution plan will be developed during Conceptual Design. However, the current cost estimate assumes that a design/build contract will be awarded during Title I for the light lab/office building and a design/build contract will be awarded during Title II for the Hazard Category II and II/III nuclear facilities.

[a] The TEC includes the cost of design activities ($14,500,000) which was appropriated in 03-D-103, Project Engineering and Design (PED) to support design-build acqusition. This is a preliminary baseline estimate. The performance baseline will be established following completion of preliminary design and Critical Decision 2.

[b] These values do not include escalation. This cost estimate is based on pre-conceptual planning. The project performance baseline will be established at CD-2.

6. Schedule of Project Funding

(dollars in thousands)

	Prior Years	FY 2002	FY 2003	FY 2004	Outyears	Total
Project Costs						
Facility Costs						
Design	0	0	0	14,500	0	14,500
Construction	0	0	0	1,700	483,800	485,500
Total, Line Item TEC [a]	0	0	0	16,200	483,800	500,000
Total Facility Costs (Federal and Non-Federal)	0	0	0	16,200	483,800	500,000
Other Project Costs						
Conceptual design cost	0	1,059	8,341	4,600	0	14,000
NEPA	0	141	859	300	0	1,300
Operational Readiness/Transition	0	0	0	0	45,700	45,700
Other project-related costs	189	3,203	5,408	5,000	25,200	39,000
Total Other Project Costs	189	4,403	14,608	9,900	70,900	100,000
Total Project Cost (TPC)	189	4,403	14,608	26,100	554,700	600,000

7. Related Annual Funding Requirements

(FY 2004 dollars in thousands)

	Current Estimate	Previous Estimate
Related annual costs (estimated life of project--30 years) [b]		
Annual facility operating costs	TBD	N/A
Facility maintenance and repair costs	TBD	N/A
Programmatic operating expenses directly related to the facility	TBD	N/A
Programmatic capital equipment not related to construction	TBD	N/A
Utility costs	TBD	N/A
Total related annual funding (operating from FY 2004 through FY 2033)	TBD	N/A

[a] The TEC includes the cost of design activities ($14,500,000) appropriated in 03-D-103, Project Engineering and Design (PED) to support design-build acqusition. This is a preliminary baseline estimate. The performance baseline will be established following completion of preliminary design and Critical Decision 2.

[b] Facility operating costs will be developed during the Title I Design.

04-D-126, Building 12-44 Production Cells Upgrade
Pantex Plant, Amarillo, Texas

The TEC and TPC presented are preliminary estimates that are based upon conceptual design. The Performance Baseline will be established following completion of a review and approval of Critical Decision 2 (CD-2) in FY 2004. An External Independent Review will be conducted prior to CD-2.

1. Construction Schedule History

	Fiscal Quarter				Total Estimated Cost ($000)	Total Project Cost ($000)
	A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
FY 2004 Budget Request *(Preliminary Estimate)*	2Q 2003	4Q 2004	1Q 2005 [a]	1Q 2007	11,380 [b]	16,840

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
Design [c]			
2002	1,500	1,500	0
2003	1,100	1,100	1,700
2004	0	0	900
Construction			
2004	8,780	8,780	740
2005	0	0	5,980
2006	0	0	1,800
2007	0	0	260

[a] Long-lead equipment procurement will proceed physical construction start.

[b] The TEC includes the cost of preliminary and final design ($2,600,000) appropriated in 02-D-103, Project Engineering and Design (PED). This is a preliminary baseline estimate. The performance baseline will be established following completion of preliminary design and Critical Decision 2.

[c] Design funding is appropriated in 02-D-103, Project Engineering and Design (PED).

3. Project Description, Justification and Scope

Project Description

The Building 12-44 Production Cells Upgrade will provide a crucial asset in meeting the DOE's objective of maintaining confidence in the nuclear weapons stockpile. This project will provide modifications to an existing facility to increase capacity to meet the impact of changing weapon complexity, projected workload, and Life Extension Program (LEP) activities. The W76 program is the first user to benefit from this additional capacity with other programs to follow.

This project will lessen the cell shortfall by modifying five cells in Building 12-44. The upgrade will bring these cells up to the same production capability/capacity level as other cells at Pantex. The modifications to each of the five cells include:

- Upgrade existing Heating, Ventilating, and Air Conditioning (HVAC) system to replace the existing system dehumidifier, pre-coolers, air handling units, fans, coils, blast valves, High Efficiency Particulate Air (HEPA) filters, duct work and controls; and to add a task exhaust capability.
- Remove existing wall mounted jib cranes and suspended ceiling in the round room and install a center pivot bridge crane with increased hook height and a new ceiling.
- Upgrade fire protection systems to replace the existing wet pipe system and to install new fire rated doors on the equipment room and on one storage room.
- Upgrade lightning protection system to include a new high mast system, new electrical service lightning arrestors and surge suppressors, and to upgrade the bonding system to achieve a reduced standoff distance that is the same as the new cells.
- Upgrade the electrical power systems to replace wire and conduit to install a ground wire in each circuit; replace the cell power and lighting distribution panels to permit lockout/tag out, and establish a dedicated circuit for the emergency lightning system.
- Upgrade the lighting system to install recessed fixtures in the round room, replace emergency lighting fixtures and install new fluorescent fixtures in the support areas.
- Seal all penetrations to limit leak pathways under accident conditions.

Project Milestones

FY 2003:	A-E Work Initiated	2Q
FY 2004:	Complete Preliminary Design	1Q
	A-E Work Completed	4Q
FY 2005:	Construction Start	1Q
FY 2007:	Physical Construction Complete	1Q

4. Details of Cost Estimate

(dollars in thousands)

	Current Estimate	Previous Estimate
Total, Design Phase (22.8% of TEC) [a]	2,600	N/A
Construction Phase		
Improvements to Land	40	
Buildings	5,510	N/A
Construction Management (5.1% of TEC)	580	N/A
Project Management (2.2% of TEC)	250	N/A
Total, Construction Costs (56.1% of TEC)	6,380	N/A
Contingencies		
Construction Phase (16.9% of TEC)	2,400	N/A
Total, Line Item Costs (TEC) [b]	11,380	N/A

5. Method of Performance

The design services (Title I, II, III) will be accomplished by an outside A-E firm and will be administered by the Operating Contractor (BWXT Pantex LLC). BWXT Pantex LCC will perform equipment design and procurement.

The construction services of this project will be performed by an outside construction contractor operating under a contract to be awarded on the basis of competitive bids. This contract will be administered by the Operating Contractor (BWXT Pantex LLC).

Construction Management Services will be performed by the DOE Operating Contractor (BWXT Pantex LLC).

Best value practices will be used for design and construction services.

[a] The TEC includes the cost of preliminary and final design ($2,600,000) which was appropriated in 02-D-103, Project Engineering and Design (PED). This is a preliminary baseline estimate. The performance baseline will be established following completion of preliminary design and Critical Decision 2.

[b] . Escalation rates were taken from the Departmental Price Change Index, January 2002 update. Overhead rates were calculated at a factor of 5% for procured services and 54% for internal labor.

6. Schedule of Project Funding

(dollars in thousands)

	Prior Years	FY 2002	FY 2003	FY 2004	Outyears	Total
Project Costs						
Facility Costs						
Design	0	0	1,700	900	0	2,600
Construction	0	0	0	740	8,040	8,780
Total, Line Item TEC [a]	0	0	1,700	1,640	8,040	11,380
Total Facility Costs (Federal and Non-Federal)	0	0	1,700	1,640	8,040	11,380
Other Project Costs						
Conceptual design cost	0	220	0	0	0	220
NEPA	0	30	20	0	0	50
Other project-related costs	0	0	245	279	4,666	5,190
Total Other Project Costs	0	250	265	279	4,666	5,460
Total Project Cost (TPC)	0	250	1,965	1,919	12,706	16,840

7. Related Annual Funding Requirements

(FY 2004 dollars in thousands)

	Current Estimate	Previous Estimate
Related annual costs (estimated life of project--30 years)		
Annual facility operating costs	400	N/A
Facility maintenance and repair costs	320	N/A
Programmatic operating expenses directly related to the facility	1,500	N/A
Programmatic capital equipment not related to construction	350	N/A
Utility costs	325	N/A
Total related annual funding (operating from FY 2004 through FY 2033)	2,895	N/A

[a] The TEC includes the cost of preliminary and final design ($2,600,000) which was appropriated in 02-D-103, Project Engineering and Design (PED). This is a preliminary baseline estimate. The performance baseline will be established following completion of preliminary design and Critical Decision 2.

04-D-127, Cleaning and Loading Modifications
Savannah River Site, Aiken, South Carolina

This project is still in the Planning Phase. As a result, the cost and schedule are preliminary estimates and are subject to change once the Performance Baseline is approved by the Acquisition Executive at the completion of the preliminary design (Critical Decision 2).

The funding request for FY 2004 supports long lead procurements of components required by the project prior to establishing the Performance Baseline and will be approved by the Acquisition Executive at Critical Decision 3A.

1. Construction Schedule History

	Fiscal Quarter				Total Estimated Cost ($000)	Total Project Cost ($000)
	A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
FY 2004 Budget Request *(Preliminary Estimate)*	3Q 2003	1Q 2005	1Q 2005	3Q 2007	37,000 [a]	56,000

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
Design [b]			
2002	1,000	0	0
2003	3,500	3,000	2,000
2004	1,750	3,250	3,000
2005	0	0	1,250
Construction			
2004	2,750	2,750	2,000
2005	15,000	13,000	11,000
2006	12,000	13,000	13,000
2007	1,000	2,000	4,750

[a] The TEC includes the cost of preliminary and final design (6,250,000) appropriated in 02-D-103, Project Engineering and Design (PED). This is a preliminary baseline estimate. The performance baseline will be established following completion of preliminary design and Critical Decision 2.

[b] Design will be accomplished in 02-D-103, Project Engineering and Design (PED).

3. Project Description, Justification and Scope

Project Description

This project will provide for modifications of reservoir equipment/facilities at the Savannah River Site. The requested construction funding in FY 2004 is for long-lead procurement of engineered equipment.

The Life Extension Program (LEP) will require additional Acorn type tritium reservoirs. New Acorn reservoirs for the W76 and W80 weapon systems will need to be filled in FY 2006. Starting in FY 2008, the projected number of required loadings exceeds the capacity of the Tritium Facilities. This line item will modify an existing reservoir loading line to enable filling of Acorn reservoirs. Also, the facility for cleaning Acorn reservoirs prior to filling will be expanded and an existing line will be modified. The objective is to provide the cleaning, filling, and unloading capacity necessary to support the LEP. In addition, the line will be modified to enable filling of the new proposed W87 reservoir. Impacts to on-going production activities will be minimized.

Project Milestones

FY 2003:	A-E Work Initiated	3Q
FY 2004:	Complete Preliminary Design	2Q
FY 2005:	A-E Work Completed	3Q
	Construction Start	3Q
FY 2007:	Physical Construction Complete	1Q

4. Details of Cost Estimate

(dollars in thousands)

	Current Estimate	Previous Estimate
Total, Design Phase (16.9% of TEC) [a]	6,250	N/A
Construction Phase		
Buildings	14,000	N/A
Standard Equipment	2,750	N/A
Construction Management (12.2% of TEC)	4,500	N/A
Project Management (6.8% of TEC)	2,500	N/A
Total, Construction Costs (64.2% of TEC)	23,750	N/A
Contingencies		
Construction Phase (18.9% of TEC)	7,000	N/A
Total, Line Item Costs (TEC)	37,000	N/A

5. Method of Performance

Design, construction and procurement is planned to be accomplished by the Management and Operating contractor. Specific scopes of work within this project are planned to be accomplished by fixed-price contracts awarded on the basis of competitive bidding.

[a] The TEC includes the cost of preliminary and final design ($6,250,000) which was appropriated in 02-D-103, Project Engineering and Design (PED). This is a preliminary baseline estimate. The performance baseline will be established following completion of preliminary design and Critical Decision 2.

6. Schedule of Project Funding

(dollars in thousands)

	Prior Years	FY 2002	FY 2003	FY 2004	Outyears	Total
Project Costs						
Facility Costs						
Design	0	0	2,000	3,000	1,250	6,250
Construction	0	0	0	2,000	28,750	30,750
Total, Line Item TEC [a]	0	0	2,000	5,000	30,000	37,000
Total Facility Costs (Federal and Non-Federal)	0	0	2,000	5,000	30,000	37,000
Other Project Costs						
Conceptual design cost	0	1,200	450	0	0	1,650
Other project-related costs	0	0	550	2,000	14,800	17,350
Total Other Project Costs	0	1,200	1,000	2,000	14,800	19,000
Total Project Cost (TPC)	0	1,200	3,000	7,000	44,800	56,000

7. Related Annual Funding Requirements

(FY 2003 dollars in thousands)

	Current Estimate	Previous Estimate
Related annual costs (estimated life of project--30 years) [b]		
Annual facility operating costs	10,000	N/A
Total related annual funding (operating from FY 2008 through FY 2038)	10,000	N/A

[a] The TEC includes the cost of preliminary and final design ($6,250,000) which was appropriated in 02-D-103, Project Engineering and Design (PED). This is a preliminary baseline estimate. The performance baseline will be established following completion of preliminary design and Critical Decision 2.

[b] Includes labor and materials for operations and maintenance.

04-D-128, TA-18 Mission Relocation
Los Alamos National Laboratory
Los Alamos, New Mexico

- In accordance with the Department of Energy's recently released Record of Decision (ROD) for the Final Environmental Impact Statement (EIS) for the Proposed Relocation of Technical Area 18 (TA-18) Capabilities and Materials at the Los Alamos National Laboratory dated December 17, 2002, the NNSA has decided to relocate TA-18 Security Category I/II missions and related materials to the Device Assembly Facility (DAF) at the Nevada Test Site (NTS). This programmatic decision has necessitated changes in the proposed funding profile and schedule for this project and are reflected in this Construction Data Sheet.
- The TA-18 Mission Relocation project (MRP) is vitally important to the NNSA and every effort is being made to expedite the project while still complying with the applicable DOE Order for construction project management. For this reason, FY 2004 construction funding is requested in advance of the completion of the Title I design and Critical Decision 2. The availability of this money in FY 2004 will allow the project the flexibility to initiate long lead procurements and necessary modifications to the DAF facility if they are supported by the project's plan and design, and approved by the Acquisition Executive. NNSA notes that the existing construction project management requirements and practices are designed to accommodate such special circumstances.

1. Construction Schedule History

	Fiscal Quarter				Total Estimated Cost ($000)	Total Project Cost ($000)
	A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
FY 2004 Budget Request *(Preliminary Estimate)*	1Q 2004	4Q 2005	4Q 2004	2Q 2008	111,000 [a]	130,000

[a] The TEC includes the cost of preliminary and final design ($21,024,000) appropriated in 01-D-103, Project Engineering and Design (PED). This is a preliminary baseline estimate. The performance baseline will be established following completion of preliminary design and Critical Decision 2.

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
Design [b]			
2001	998 [c]	0	0
2002	6,426	0	0
2003	6,164 [d]	0	0
2004	1,600	9,000	6,000
2005	12,000	12,024	15,024
Construction			
2004	8,820	8,820	2,000
2005	10,128	10,128	12,000
2006	22,000	22,000	20,000
2007	22,000	22,000	25,000
2008	22,000	22,000	20,000
2009	5,028	5,028	10,976

3. Project Description, Justification and Scope

The goal of the Technical Area (TA)-18 Mission Relocation Project (MRP) is to provide a secure, modern location for conducting general-purpose nuclear materials handling activities currently conducted at Los Alamos National Laboratory (LANL) TA-18. TA-18 is the sole remaining facility in the United States capable of performing general-purpose nuclear materials handling experiments and conducting training essential to support national security missions including: research and development of technologies in support of Homeland Defense and counter-terrorism initiatives; the continued safe and efficient handling and processing of fissile materials; the development of technologies vital to implementing arms control and nonproliferation agreements; the development of emergency response technologies to respond to terrorist attacks, etc.; training for criticality safety professionals, fissile materials handlers, emergency responders, International Atomic Energy Agency professionals, and other Federal and State organizations charged with Homeland Defense responsibilities. The need for this project is based on the projected large capital investment for security and infrastructure upgrades required over the next 10 years to remain at TA-18. The NNSA recently completed environmental reviews and technical and cost studies to evaluate siting options for the TA-18 missions, and designated that the preferred alternative is to relocate a portion of the TA-18

[b] Design accomplished in 01-D-103, Project Engineering and Design (PED).

[c] The FY 2001 Appropriations Act designated $1,000,000 for initiation of design activities for relocation of TA-18 Nuclear Materials Handling Facility at LANL. The original appropriation was $1,000,000. This was reduced by $2,000 for a recision enacted by Section 1403 of the FY 2001 Consolidated Appropriations Act.

[d] The FY 2003 funding of $6,164,000 will be proposed for reallocation to RTBF/Program Readiness to support critical pre-design activities for this project as part of the resolution of the final FY 2003 appropriation or, if necessary, as part of a reprogramming action after enactment of the FY 2003 appropriation. The obligations and costs reflected assume that this reallocation will occur.

missions (those requiring Security Category I/II special nuclear material) to the Device Assembly Facility (DAF) at the Nevada Test Site with the remaining missions (those requiring Security Category III/IV special nuclear material) residing at LANL. The previous preferred alternative was construction of a new facility at LANL. Given the recent change in direction, additional conceptual design activities are required to develop detailed project scope, schedules, and budget projects; however, it is anticipated that this project will include capabilities to house and operate critical assemblies, store associated special nuclear material, and provide infrastructure to support criticality training and detection development activities.

Project Milestones

Complete Conceptual Design	4Q 2003
Complete Preliminary Design (Title I)	4Q 2004
Complete Final Design (Title II)	4Q 2005
Complete Construction (Title III)	2Q 2008
Transition/Closeout	2Q 2009

4. Details of Cost Estimate

(dollars in thousands)

	Current Estimate	Previous Estimate
Total, Design Phase (18.9% of TEC) [a]	21,024	N/A
Construction Phase		
Improvements to Land	TBD	N/A
Buildings	TBD	N/A
Standard Equipment	TBD	N/A
Inspection, Design and Project Liaison, Testing, Checkout and Acceptance	TBD	N/A
Construction Management (% of TEC)	TBD	N/A
Project Management (% of TEC)	TBD	N/A
Total, Construction Costs (80.1% of TEC)	TBD	N/A
Contingencies		NA
Construction Phase (% of TEC)	TBD	N/A
Total, Line Item Costs (TEC) [b]	111,000	N/A

[a] The TEC includes the cost of preliminary engineering and final design ($21,024,000) which was appropriated in 01-D-103, Project Engineering and Design (PED). This is a preliminary baseline estimate. The performance baseline will be established following completion of preliminary design and Critical Decision 2.

[b] These values do not include escalation. This cost estimate is based on pre-conceptual planning. The project performance baseline will be established at CD-2.

5. Method of Performance

An acquisition execution plan will be developed during Conceptual Design. The current plan envisions early construction activity outside the DAF proper and transportation related work beginning in late FY 2004.

6. Schedule of Project Funding

(dollars in thousands)

	Prior Years	FY 2002	FY 2003	FY 2004	Outyears	Total
Project Costs						
Facility Costs						
Design	0	0	0	6,000	15,024	21,024
Construction				2,000	87,976	89,976
Total, Line Item TEC [a]	0	0	0	8,000	103,000	111,000
Total Facility Costs (Federal and Non-Federal)	0	0	0	8,000	103,000	111,000
Other Project Costs						
Other project-related costs	0	0	0	6,000	13,000	19,000
Total Other Project Costs	0	0	0	6,000	13,000	19,000
Total Project Cost (TPC)	0	0	0	14,000	116,000	130,000

7. Related Annual Funding Requirements

(FY 2003 dollars in thousands)

	Current Estimate	Previous Estimate
Related annual costs (estimated life of project--30 years) [b]		
Annual facility operating costs	TBD	N/A
Facility maintenance and repair costs	TBD	N/A
Programmatic operating expenses directly related to the facility	TBD	N/A
Programmatic capital equipment not related to construction	TBD	N/A
Utility costs	TBD	N/A
Total related annual funding (operating from FY 2004 through FY 2033)	TBD	N/A

[a] The TEC includes the cost of preliminary engineering and final design ($21,024,000) which was appropriated in 01-D-103, Project Engineering and Design (PED). This is a preliminary baseline estimate. The performance baseline will be established following completion of preliminary design and Critical Decision 2.

[b] Facility operating costs will be developed during the Title I Design.

03-D-101, Sandia Underground Reactor Facility (SURF), Sandia National Laboratories, Albuquerque, New Mexico

(Changes from the FY 2003 Congressional Budget are denoted with a vertical line [|] in the left margin)

Significant Changes

This project was cancelled by NNSA in October 2002 because the security cost savings envisioned in justification of the project were no longer valid due to the recently completed draft Design-Basis Threat. Coupled with an increase in the estimated cost to construct the facility since establishment of the performance baseline, the payback period for capturing the initial investment increased to the point that the programmatic benefit anticipated for the project was significantly reduced.

The first year of construction funding for this project was requested in the FY 2003 Congressional budget. Due to the cancellation of the project, however, the funding will be proposed for reallocation as part of a reprogramming action after enactment of the FY 2003 appropriation.

1. Construction Schedule History

	Fiscal Quarter				Total Estimated Cost ($000)	Total Project Cost ($000)
	A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
FY 2003 Budget Request *(Title I Performance Baseline)*	3Q 2001	4Q 2002	4Q 2003	3Q 2006	28,406 [a]	31,096
FY 2004 Budget Request	3Q 2001	4Q 2002	cancelled	cancelled	3,206	5,352

[a] The TEC includes the cost of preliminary and final design ($3,206,000), which was appropriated in 01-D-103, Project Engineering and Design.

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
Design [a]			
2001	2,696	2,696	764
2002	510	510	2,351
2003	0	0	91
Construction			
2003	2,000 [b]	0 [b]	0 [b]
2004	0	0	0

3. Project Description, Justification and Scope

This project was to provide a modern, secure, underground facility to house the existing Sandia Pulse Reactor (SPR) at significantly less annual security costs than are being incurred today. The project has been cancelled as explained under the Significant Change section.

Project Milestones:

FY 2003: Project cancelled 1Q

[a] Design funding was appropriated in 01-D-103, Project Engineering and Design (PED).

[b] The first year of construction funding for this project was requested in the FY 2003 Congressional budget. Due to the cancellation of the project, however, the funding will be proposed for reallocation as part of a reprogramming action after enactment of the FY 2003 appropriation. The obligations and costs reflected assume that the proposed reallocation will occur.

4. Details of Cost Estimate

(dollars in thousands)

	Current Estimate	Previous Estimate
Total, Design Phase (100% of TEC) [a]	3,206	3,206
Construction Phase		
Improvements to Land	0	490
Buildings	0	12,828
Special Equipment	0	848
Utilities	0	716
Standard Equipment	0	35
Massive Delay Barrier Doors	0	2,060
Inspection, Design and Project Liaison, Testing, Checkout and Acceptance	0	1,568
Construction Management (0% of TEC)	0	375
Project Management (0% of TEC)	0	568
Total Construction Costs (0% of TEC)	0	19,488
Contingencies		
Construction Phase (0% of TEC)	0	5,712
Total, Line Item Costs (TEC)	3,206	28,406

5. Method of Performance

Design services were obtained through competitive solicitation as a Cost plus Fixed Fee contract in Project Engineering and Design line item 01-D-103.

[a] Design funding was appropriated in 01-D-103, Project Engineering and Design (PED).

6. Schedule of Project Funding [a]

(dollars in thousands)

	Prior Years	FY 2002	FY 2003	FY 2004	Outyears	Total
Project Costs						
Facility Costs						
Design [b]	764	2,351	91	0	0	3,206
Construction	0	0	0	0	0	0
Total, Line item TEC	764	2,351	91	0	0	3,206
Total Facility Costs (Federal and Non-Federal)	764	2,351	91	0	0	3,206
Other Project Costs						
Conceptual design costs	1,211	0	0	0	0	1,211
Other project-related costs [c]	437	498	0	0	0	935
Total, Other Project Costs	1,648	498	0	0	0	2,146
Total Project Cost (TPC)	2,412	2,849	91	0	0	5,352

7. Related Annual Funding Requirements

(FY 2006 dollars in thousands)

	Current Estimate	Previous Estimate
Annual facility operating costs	0	100
Annual security costs	0	6,510
Programmatic operating expenses directly related to the facility	0	3,000
Total related annual funding	0	9,610

[a] Costs in this schedule assume that the proposed reallocation of $2,000,000 out of this project will occur.

[b] Design funding was appropriated in 01-D-103, Project Engineering and Design (PED).

[c] Including tasks such as preliminary Project Execution Plan, Pre-Title I Development, Design Criteria, Safeguards and Security Analysis, Architect/Engineer Selection, Value Engineering Study, Independent Cost Estimate, Energy Conservation Report, Fire Hazards Assessment, Site Surveys, Soils Reports, Permits, and Administrative Support during the conceptual design phase.

03-D-103, National Nuclear Security Administration Project Engineering and Design (PED), Various Locations

(Changes from FY 2003 Congressional Budget are denoted with a vertical line [|] in the left margin.)

Significant Changes

Since submission of the FY 2003 Congressional Budget, the Deputy Administrator for Defense Programs and the Associate Administrator for Facilities and Operations initiated the Integrated Construction Program Plan (ICPP) for the National Nuclear Security Administration. The ICPP is a planning and prioritization document that integrates the line item construction plans included in the sites' Ten Year Comprehensive Site Plans with the Future Years Nuclear Security Program (FYNSP) in support of NNSA's Planning, Programming, Budgeting and Evaluation (PPBES) process. The FY 2004 request for this project reflects the results of this new planning and prioritization effort, and includes a number of adjustments to funding amounts and project schedules.

  Specifically, the ICPP process resulted in a decision to delay design for one year for the Energetic Materials Processing Center and the Tritium Facility Modernization subprojects. Upon enactment of the FY 2003 appropriation, the original FY 2003 request totaling $4,400,000 for these subprojects will be reallocated as part of a reprogramming action.

The TEC for design of the Chemistry and Metallurgy Research Facility Replacement (CMRR) project is decreased by $40,500,000 due to a revised acquisition strategy, whereby a design-build approach will be utilized. Under this approach, the design funding decrement of $40,500,000 has been moved out of PED and is requested as part of the CMRR line item (04-D-125).

1. Construction Schedule History

	Fiscal Quarter				Total Estimated Cost ($000)
	A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete	
FY 2003 Budget Request (*A-E and technical design only*)	1Q 2003	4Q 2006	TBD	TBD	63,709 [a]
FY 2004 Budget Request (*A-E and technical design only*)	3Q 2003	3Q 2006	TBD	TBD	23,209 [a]

[a] The TEC estimate is for design only for the subprojects currently included in this data sheet.

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
2003	15,539 [a]	11,139 [a]	500 [a]
2004	10,570	10,570	19,200
2005	1,500	1,500	3,509

3. Project Description, Justification and Scope

This project provides for Architect-Engineering (A-E) services (Title I and Title II) for several National Nuclear Security Administration (NNSA) construction projects, allowing designated projects to proceed from conceptual design into preliminary design (Title I) and definitive design (Title II). The design effort will be sufficient to assure project feasibility, define the scope, provide detailed estimates of construction costs based on the approved design and working drawings and specifications, and provide construction schedules, including procurements. The designs will be extensive enough to establish performance baselines and to support construction or long-lead procurements in the fiscal year in which line item construction funding is requested and appropriated.

Conceptual design studies are prepared for each project using Operations and Maintenance funds prior to receiving design funding under a PED line item. These conceptual design studies define the scope of the project and produce a rough cost estimate and schedule.

FY 2003 PED design projects are described below. While not anticipated, some changes may occur due to continuing conceptual design studies or developments occurring after submission of this data sheet. These changes will be reflected in subsequent years. Preliminary estimates for the cost of Title I and II design and engineering efforts for each subproject are provided, as well as very preliminary estimates of the Total Estimated Cost (including physical construction) of each subproject.

[a] The start of design for the Energetic Materials Processing Center and Tritium Facility Modernization subprojects has been delayed by one year. Upon enactment of the FY 2003 appropriation, the FY 2003 funding for these projects ($4,400,000) will be reallocated as part of a reprogramming action. Obligations and costs assume that this reallocation will occur. If the FY 2003 reprogramming is not realized, the FY 2004 request would need to be amended.

FY 2003 Proposed Design Projects

03-01: Chemistry and Metallurgy Research Facility Replacement (CMRR) Project, LANL

Fiscal Quarter				Total Estimated Cost (Design Only ($000)	Preliminary Full Total Estimated Cost Projection ($000)
A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
1Q 2004	3Q 2006	2Q 2004	1Q 2011	14,500	500,000-700,000

Fiscal Year	Appropriations	Obligations	Costs
2003	10,000	10,000	0
2004	4,500	4,500	14,500

This subproject includes the design activities required to support the revised design-build acquisition strategy for the proposed Chemistry and Metallurgy Research Facility Replacement (CMRR) Project at Los Alamos National Laboratory. The existing Chemistry and Metallurgy Research (CMR) building is a Hazard Category 2 nuclear facility that is over fifty years old. CMR actinide chemistry research capabilities are vital to fulfil several critical LANL missions, including but not limited to, pit rebuild, pit surveillance and pit certification. In January 1999, DOE approved a strategy for managing risks at the CMR facility. This approval committed DOE and LANL on a course to upgrade and temporarily continue to operate the CMR facility through approximately 2010 with operational limitations. This approval also committed DOE and LANL to develop long-term facility and site plans to ensure continuous mission support beyond the year 2010. It was acknowledged that mission support beyond 2010 may require new facilities.

Line item 04-D-125 includes construction funding for this project.

03-02: Building 12-64 Production Bays Upgrade, PX

Fiscal Quarter				Total Estimated Cost (Design Only ($000)	Preliminary Full Total Estimated Cost Projection ($000)
A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
3Q 2003	3Q 2005	2Q 2005	4Q 2006	2,809	23,000-30,000

Fiscal Year	Appropriations	Obligations	Costs
2003	1,139	1,139	500
2004	1,670	1,670	1,400
2005	0	0	909

This subproject includes the preliminary and final design for the Pantex Building 12-64 Production Bays Upgrade. This project will lessen the bay shortfall by modifying the bays in Building 12-64 and bringing these bays up to the same operational/capacity level as other bays at Pantex. The modifications to each of the 17 bays include:

1. Task exhaust installation
2. Remove and replace dehumidifier system
3. Remove and replace HVAC
4. Remove and replace roof
5. Seamless flooring installation
6. UV Detection System installation
7. High speed deluge system installation
8. Lightening Bond installation
9. Installation of new hoists
10. Removal of asbestos on piping
11. Upgrade of restrooms and break area

The building 12-64 Production Bays Upgrade will provide a crucial asset in meeting the DOE's objective of maintaining confidence in the nuclear weapons stockpile. This project will provide modifications to an existing facility to increase capacity to meet the impact of changing weapon complexity, projected workload, and Life Extension Program (LEP) activities, specifically the first production unit for the W-76.

03-03: Energetic Materials Processing Center, LLNL

Fiscal Quarter				Total Estimated Cost (Design Only ($000))	Preliminary Full Total Estimated Cost Projection ($000)
A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
2Q 2004 [a]	4Q 2005	1Q 2006	3Q 2008	4,400	47,100-64,000

Fiscal Year	Appropriations	Obligations	Costs
2003	2,900 a	0 a	0 a
2004	2,900	2,900	2,500
2005	1,500	1,500	1,900

This subproject includes the preliminary and final design for the proposed Energetic Materials Processing Center (EMPC) project which replaces existing facilities and energetic material (EM) processing equipment that is quickly becoming obsolete and inadequate to meet the requirements at Lawrence Livermore National Laboratory (LLNL). This facility will support requirements of the Stockpile Stewardship Program, including the National Hydrotest Program, and help meet mission needs in research, development, and directed stockpile work, that are not available in other parts of the NNSA/DOE Complex. The EMPC focus is on custom explosives parts, extremely precise assemblies, and work with non-standard weapon explosives. LLNL will continue to rely on Pantex for its explosives production needs. The new facility will be located at LLNL Site 300 and used to support the Stockpile Stewardship Program. As currently planned, the facility will provide a total of approximately 23,000 gross square feet of space for EM machining, radiography, and inspection with separate control rooms, magazines, and a machining/office support building. By incorporating modern EM protection and safety philosophies, the EMPC will be designed to provide an increased level of worker and personnel protection in and around the facility in the event of an accidental detonation of up to 75 kilograms of Class 1 Division 1 explosives. This project will also have the additional benefit of vacating old EM facilities that are seriously degraded which will allow for further footprint reduction and reduction of maintenance backlog.

As part of NNSA's construction planning and prioritization effort, the design for this project has been deferred one year with design beginning in FY 2004.

a The design start date for EMPC has been revised and is planned to begin in FY 2004. The FY 2003 request of $2,900,000 will be reallocated as part of a reprogramming action after enactment of the FY 2003 appropriation. Obligations and costs assume that this reallocation will occur. If the FY 2003 reprogramming is not realized, the FY 2004 request would need to be amended.

03-04: Tritium Facility Modernization, LLNL

Fiscal Quarter				Total Estimated Cost (Design Only ($000))	Preliminary Full Total Estimated Cost Projection ($000)
A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
2Q 2004 [a]	2Q 2005	1Q 2006	4Q 2008	1,500	10,700-13,700

Fiscal Year	Appropriations	Obligations	Costs
2003	1,500 a	0 a	0 a
2004	1,500	1,500	800
2005	0	0	700

This subproject includes the preliminary and final design for the proposed Tritium Facility Modernization (TFM) project which will modernize the hydrogen isotope research and development capabilities at LLNL in order to meet future program requirements. The modernized capability will focus on the behavior, properties, and uses of hydrogen and its isotopes under a variety of extreme conditions ranging from cryogenic to high temperatures and pressures. Addition of this capability supports stockpile stewardship specifically by providing necessary infrastructure for high energy density physics, weapons effects and tritium/materials R&D, including aging effects on stockpile materials and components, tritium shipping and handling, and reimbursable work-for-others. More generally, it restores an important element of LLNL R&D capability in nuclear weapons science and enhances the lab's core competency in this vital area. The inertial confinement fusion (ICF) research program at LLNL also requires the capability and other areas of research interest, such as hydride energy storage and tritium/environmental interactions, will benefit from it.

As part of NNSA's construction planning and prioritization effort, the design for this project has been deferred one year with design beginning in FY 2004.

a The design start date for TFM has been revised and is planned to begin in FY 2004. The FY 2003 request of $1,500,000 will be reallocated as part of a reprogramming action after enactment of the FY 2003 appropriation. Obligations and costs assume that this reallocation will occur. If the FY 2003 reprogramming is not realized, the FY 2004 request would need to be amended.

4. Details of Cost Estimate [a]

(dollars in thousands)

	Current Estimate	Previous Estimate
Design Phase [b]		
Preliminary and Final Design Costs (Design Drawings and Specifications)	19,729	54,125
Design Management Costs (10% of TEC)	2,320	6,371
Project Management Costs (5% of TEC)	1,160	3,213
Total, Design Costs (100% of TEC)	23,209	63,709
Total, Line Item Costs (TEC)	23,209	63,709

5. Method of Performance

Design services will be obtained through competitive and/or negotiated contracts. M&O contractor staff may be utilized in areas involving security, production, proliferation, etc. concerns.

6. Schedule of Project Funding [c]

(dollars in thousands)

	Prior Years	FY 2002	FY 2003	FY 2004	Outyears	Total
Project Cost						
Facility Cost						
Project Engineering and Design	0	0	500	19,200	3,509	23,209
Total, Line item TEC	0	0	500	19,200	3,509	23,209
Total, Facility Costs (Federal and Non-Federal)	0	0	500	19,200	3,509	23,209
Other Project Costs						
Conceptual design costs	1,200	2,150	630		0	3,980
Other project-related costs	3,100	4,000	5,950	800	100	13,950
Total, Other Project Costs	4,300	6,150	6,580	800	100	17,930
Total, Project Cost (TPC)	4,300	6,150	7,080	20,000	3,609	41,139

[a] This cost estimate is based upon direct field inspection and historical cost estimate data, coupled with parametric cost data and completed conceptual studies and designs, when available. The cost estimate includes design phase activities only. Construction activities will be requested as individual line items upon completion of Title I design.

[b] The percentages for Design Management; Project Management; and Design Phase Contingency are estimates base on historical records and are preliminary estimates.

[c] Costs in this schedule assume that the proposed reallocation of $4,400,000 out of this project will occur.

03-D-121 Gas Transfer Capacity Expansion, Kansas City Plant, Kansas City, Missouri

(Changes from FY 2003 Congressional Budget Request are denoted with a vertical line [|] in the left margin.)

Significant Changes

The Total Project Cost increased by $488,000 and the funding profile changed consistent with the baseline cost established for Critical Decision 2.

1. Construction Schedule History

	Fiscal Quarter				Total Estimated Cost ($000)	Total Project Cost ($000)
	A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
FY 2003 Budget Request *(Preliminary Estimate)*	3Q 2002	4Q 2003	1Q 2003	2Q 2006	30,200	30,900
FY 2004 Budget Request *(Performance Baseline)*	3Q 2002	4Q 2003	1Q 2003	1Q 2006	30,200 [a]	31,388

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
Design [b]			
2002	300	300	163
2003	695	695	832
Construction			
2003	4,000	4,000	1,200
2004	15,300	15,300	7,500
2005	9,905	9,905	18,226
2006	0	0	2,279

[a] The TEC includes the cost of preliminary and final design ($995,000) appropriated in 02-D-103, Project Engineering and Design (PED).

[b] Design will be accomplished in 02-D-103, Project Engineering and Design (PED).

3. Project Description, Justification and Scope

Project Description

This project will provide the Kansas City Plant (KCP) with the required resources to support new designs in reservoir production in addition to the existing production schedules. It will provide the capital equipment and the facility modifications required to expand the current reservoir facility for new gas transfer system production.

The project will expand the current reservoir production department by approximately 13,000 square feet by extending the existing boundaries across an aisle and into the current Model Shop. This expansion area will house new machining, welding, and assembly equipment, a cleaning facility, and enlarged inspection facilities. Equipment such as assembly, finishing machines, lathes, welders, furnaces, wire EDM, coordinate measuring machine, cleaning equipment and inspection equipment will be procured as part of this project. The capital equipment plan includes both installation of new equipment and relocation of some existing equipment to improve production efficiency. In addition to this expansion, the A-Room will be expanded within the existing Reservoir facility by approximately 800 square-feet.

Project Justification

The W76 6.2 study has concluded that a need exists for a revised Acorn design and the W87 program is currently planning to implement Acorn during the Limited Life Component Exchange activities. The W80 Acorn, while currently on hold, is also authorized in Phase 6.3. SLEP program guidance indicates that the B61 also will require a new Acorn design.

The current gas transfer systems production facilities are not adequate to supply the proposed products. The new generation of gas transfer systems identified in SLEP program guidance require two to six times the work of the existing reservoirs that they will replace. This increased workload creates an extensive capacity overload for the existing reservoir facility. The overload covers many years, and cannot be accommodated with existing facilities or a larger staff. Due to security requirements, it is not appropriate to outsource these products.

The current reservoir facility and equipment are at capacity and are inadequate to support the new designs in reservoir production in addition to the existing production schedules. Reservoir workload has already doubled from the original non-nuclear reconfiguration scope and the facility is currently operating two shifts. Additional floor space, beyond the current reservoir facility boundaries, is required for additional equipment. An adjacent facility for finishing and inspecting new Acorn system designs, and for meeting peak reservoir production demands, is required. The expanded capacity is required in FY 2006 in order to meet planned schedules for the W76 and the W80. Failure to have the facility will prevent the KCP from meeting this program schedule. The W76 program has an FY 2007 First Production Unit (FPU) from the KCP, and the W87 system has an FPU date of FY 2008 from the KCP. The W80 program has a FY 2005 FPU from the KCP. Design must begin in FY 2002 and construction in FY 2003 in order to have the facility operational in FY 2006. This expansion will accommodate all reservoir scenarios envisioned in SLEP guidance and the Master Nuclear Schedule.

Relationships to Other Projects

This project will utilize floor space originally planned for the SMRI Model Shop/Tool Room consolidation. If this line item is funded, the Tool Room will be consolidated into the current Model Shop area. This will result in a slight increase to the KCP SMRI footprint, but not in excess of the SMRI target of approximately 2.3 million square feet. The schedule and funding requirements for this project includes the Model Shop/Tool Room consolidation.

As a result of the change to the plant footprint, the Structural Upgrades Line item required a baseline change to include the required upgrades in the retained area that will now be the consolidated Model Shop/Tool Room.

Project Milestones

FY 2002:	A-E Work Initiated	3Q
FY 2003:	Work Completed	4Q
	Physical Construction Starts and long lead procurements	1Q
FY 2006:	Physical Construction Complete	1Q

4. Details of Cost Estimate

(dollars in thousands)

	Current Estimate	Previous Estimate
Total, Design Phase (4.1% of TEC) [a]	995	995
Construction Phase		
Buildings	4,010	3,305
Standard Equipment	19,375	19,245
Inspection, Design and Project Liaison, Testing, Checkout and Acceptance	368	465
Construction Management (3.3% of TEC)	993	795
Project Management (2.4% of TEC)	716	290
Total, Construction Costs (87.8% of TEC)	25,462	24,100
Contingencies		
Construction Phase (12.4% of TEC)	3,743	5,105
Total, Line Item Costs (TEC) [b]	30,200	30,200

5. Method of Performance

Design and inspection will be performed under a KCP negotiated architect-engineer contract. Construction will be accomplished by fixed-price contract awarded on the basis of competitive proposals and administered by Honeywell.

[a] The TEC includes the cost of preliminary and final design ($995,000) which was appropriated in 02-D-103, Project Engineering and Design (PED).

[b] Escalation rates were taken from the Departmental Price Change Index, January 2002 update. Overhead rates were calculated at a factor of 17% for procurement, 42% for internal labor.

6. Schedule of Project Funding

(dollars in thousands)

	Prior Years	FY 2002	FY 2003	FY 2004	Outyears	Total
Project Costs						
Facility Costs						
Design [a]	0	163	832	0	0	995
Construction	0	0	1,200	7,500	20,505	29,205
Total, Line Item TEC [b]	0	163	2,032	7,500	20,505	30,200
Total Facility Costs (Federal and Non-Federal)	0	163	2,032	7,500	20,505	30,200
Other Project Costs						
Conceptual design cost	0	115	0	0	0	115
Other project-related costs	144	114	304	305	206	1,073
Total Other Project Costs	144	229	304	305	206	1,188
Total Project Cost (TPC) [b]	144	392	2,336	7,805	20,711	31,388

7. Related Annual Funding Requirements

(FY 2004 dollars in thousands)

	Current Estimate	Previous Estimate
Related Annual Costs (Estimated Life of Project--30 Years)		
Annual Facility Operating Costs	7,000	7,000
Total Related Annual Funding (Operating from FY 2006 through FY 2036)	7,000	7,000

[a] Design will be accomplished in 02-D-103, Project Engineering and Design (PED).

[b] The TEC includes the cost of preliminary and final design ($995,000) which was appropriated in 02-D-103, Project Engineering and Design (PED).

03-D-122, Purification Facility, Y-12 National Security Complex, Oak Ridge, Tennessee

(Changes from FY 2003 Congressional Budget Request are denoted with a vertical line [|] in the left margin.)

Significant Changes

- # The original plan for this project was to build a prototype facility that would simulate production-scale operations and allow near-term Life Extension Program (LEP) requirements to be met. The prototype facility would have been followed by a production facility which would have provided full-scale, long-term purification production process capability. Upon subsequent development of the prototype project, it has been determined that the prototype facility can be designed and constructed to meet both near-term LEP requirements and support projected longer-term weapons program needs thus eliminating the need for the large scale production facility which was estimated to cost up to $80,000,000.
- # The name of this project has been changed from "Purification Prototype Facility" to "Purification Facility" to reflect the change in strategy to a stand-alone project, and the funding profile and the TEC/TPC have been changed to reflect the proposed Performance Baseline currently under review:
  - The design TEC increased by $3,010,000 and was accomplished by a reprogramming action that was completed in FY 2002.
  - A total of $7,384,000 from FY 2003 funds will be proposed for reprogramming into this project after enactment of the FY 2003 appropriation to support the increase in the construction TEC ($3,684,000), and to fully fund the project in FY 2003 to support LEP schedules ($3,700,000 that was previously planned for FY 2004). The obligations, costs, and TEC/TPC in this data sheet assume that the proposed reallocation will occur.
  - No funding is requested in FY 2004 assuming that the proposed reallocation will occur.

1. Construction Schedule History

	Fiscal Quarter				Total Estimated Cost ($000)	Total Project Cost ($000)
	A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
FY 2003 Budget Request *(Preliminary Estimate)*	2Q 2002	3Q 2003	1Q 2003	4Q 2004	31,283	41,053
FY 2004 Budget Request *(Current Estimate)*	2Q 2002	3Q 2003	3Q 2003	4Q 2004	37,977[a]	49,275

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
Design [b]			
2001	6,783	6,783	0
2002	3,010 [c]	3,010	3,080
2003	0	0	6,713
Construction			
2003	20,800 [d]	28,184 [d]	16,000 [d]
2004	0	0 [d]	12,184 [d]

[a] The TEC includes the cost of preliminary and final design ($9,793,000), which was appropriated in 01-D-103, Project Engineering and Design. It also assumes that the proposed reallocation of $7,384,000 will occur in FY 2003.

[b] $9,793,000 of design funding was appropriated in 01-D-103, Project Engineering and Design (PED).

[c] Reflects a reprogramming action of $3,010,000 that was completed in FY 2002.

[d] Upon enactment of the FY 2003 appropriation, a total of $7,384,000 will be proposed for reallocation into this project as part of a reprogramming action. Obligations and costs assume that this reallocation will occur. If the FY 2003 reprogramming is not realized, the FY 2004 request would need to be amended.

3. Project Description, Justification and Scope

Currently, only a small, development-scale purification facility and capability exist at Y-12 National Security Complex. The previous full-scale purification production facility was shut down in the late 1980s. Given the length of time that has passed since the initial startup of this facility and its operation, there is a need to reestablish and define the operating parameters and controls and process prove-in requirements for this production process.

The project will provide an essential wet chemistry process to meet three fundamental objectives:

- Replacement of original purification process. The reuse of the shutdown facility is not viable as a result of the evolution of health and safety requirements and considerations over the intervening years.
- Provide enhanced process control to augment product quality and manufacturing consistency. The operation of the original facility was highly dependent on operator process knowledge and lacked comprehensive process control instrumentation to ensure consistent product quality and control of operation parameters.
- Redefine and reestablish requirement for process prove-in of this production operation before delivery of certified product.

The Purification Facility project consists of building a facility to mimic the original production process, while meeting current engineering codes and standards. Construction will be performed at the 9720-40 site at the Y-12 National Security Complex, but outside the Perimeter Intrusion Detection and Assessment System (PIDAs). The project will consist of a facility design with limited processing capability and will be supported with a vapor recovery system. The facility will use a purification process that mimics the historical purification process, using modern control equipment that satisfies current engineering codes and standards. This purification system will provide a single process stream and will contain only those processes that do not now exist and/or are not considered viable to restart and/or refurbish.

Operations performed within the Purification Facility will include: 1) dissolution, filtration, and recrystallization; and 2) powder processing in a nitrogen atmosphere.

Project Milestones:

FY 2002:	Initiate Design	2Q
	Complete Preliminary Design	4Q
FY 2003:	Intitiate long lead procurement	2Q
	Initiate Physical Construction	3Q
	Complete Design	4Q
FY 2004:	Complete Physical Construction	4Q

4. Details of Cost Estimate

(dollars in thousands)

	Current Estimate	Previous Estimate
Total, Design Phase (21.7% of TEC) [a]	9,793	6,783
Construction Phase		
Improvements to land	1,235	996
Buildings	4,217	4,106
Special facilities	6,589	4,926
Utilities	38	1,499
Inspection, design & project liaison, testing, checkout, and acceptance	1,309	5,042
Construction Management (8.6% of TEC)	3,249	1,575
Project Management (8.5% of TEC)	3,210	2,543
Total Construction Costs (52.3% of TEC)	19,847	20,687
Contingencies		
Construction Phase (21.9% of TEC)	8,337	3,813
Total, Line Item Costs (TEC)	37,977	31,283

5. Method of Performance

Design services will be obtained through competitive and/or negotiated contracts. The M&O contractor staff may be utilized in areas involving security, production, proliferation, etc. concerns. To the extent feasible, procurement and construction will be accomplished by fixed-price contracts awarded on the basis of competitive bidding. All contracts will be administered by the operating contractor.

Best value practices will be used for design and construction services.

[a] $9,793,000 of design funding was appropriated in 01-D-103, Project Engineering and Design (PED).

6. Schedule of Project Funding [b]

(dollars in thousands)

	Prior Years	FY 2002	FY 2003	FY 2004	Outyears	Total
Project Costs						
Facility Costs						
Design [c]	0	3,080	6,713	0	0	9,793
Construction	0	0	16,000	12,184	0	28,184
Total, Line Item TEC	0	3,080	22,713	12,184	0	37,977
Total, Facility Costs (Federal and Non-Federal)	0	3,080	22,713	12,184	0	37,977
Other Project Costs						
Other project-related costs	1,493	3,200	2,618	3,987	0	11,298
Total, Other Project Costs	1,493	3,200	2,618	3,987	0	11,298
Total, Project Cost (TPC)	1,493	6,280	25,331	16,171	0	49,275

7. Related Annual Funding Requirements

(FY 2002 dollars in thousands)

	Current Estimate	Previous Estimate
Annual facility operating costs	3,564	0
Annual facility maintenance/repair costs	3,896	0
Programmatic operating expenses directly related to the facility	0	0
Other costs	314	0
Total related annual funding (operating from FY 2005 through FY 2054)	7,774	0

[b] Costs in this schedule assume that the proposed reallocation of $7,384,000 into this project will occur.

[c] $9,793,000 of design funding was appropriated in 01-D-103, Project Engineering and Design (PED).

03-D-123, SNM Component Requalification Facility, Pantex Plant, Amarillo, Texas

(Changes from FY 2003 Congressional Budget Request are denoted with a vertical line [|] in the left margin.)

Significant Changes

- The TEC and TPC presented are preliminary estimates. Critical Decision 3A, Long Lead Procurement, was approved in support of the FY 2003 construction request. Completion of the entire project Performance Baseline will be provided at the completion of preliminary design. However, the FY 2004 request does reflect the NNSA planning and prioritization process that culminated in the Integrated Construction Program Plan (ICPP), and which resulted in adjustments to funding amounts and project schedules.
- The TEC increase is primarily due to additional equipment items required by the Design Agencies to perform the requalification activities and to include equipment design, management and installation costs that were previously planned to be funded from another program. This is offset slightly by a decrease of $307,000 in the design effort under PED (02-D-103) based on a detailed resource loaded schedule and actual contract amounts for the design work.
- A total of $3,620,000 from FY 2003 funds will be proposed for reprogramming into this project after enactment of the FY 2003 appropriation. The reprogramming will revise the funding profile to reduce risk and support LEP schedules. The obligations, costs, TEC/TPC, and FY 2004 request in this data sheet assume that the proposed reallocation will occur.
- The initial design schedule has slipped from previous plans, but the design can still be accomplished in time to coincide with the FY 2004 appropriations planned for the construction phase.

1. Construction Schedule History

	Fiscal Quarter				Total Estimated Cost ($000)	Total Project Cost ($000)
	A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
FY 2003 Budget Request *(Preliminary Estimate)*	2Q 2002	2Q 2004	2Q 2004	2Q 2005	11,300	13,300
FY 2004 Budget Request *(Current Estimate)*	2Q 2003	1Q 2004	1Q 2004	1Q 2006	15,341 [a]	16,584

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
Design [b]			
2002	950	950	0
2003	450 [c]	143 [c]	900 [c]
2004	0	0	193 [c]
Construction			
2003	3,000 [c]	6,620 [c]	1,500 [c]
2004	7,628	6,380 [c]	6,000 [c]
2005	0	1,248 [c]	6,748 [c]

3. Project Description, Justification and Scope

This project consists of additions and modifications necessary to convert a portion of building 12-86 into the SNM Component Requalification Facility (SNMCRF).

The Department of Energy (DOE) has given the mission assignment to the Pantex Plant to develop the capability to process pits through recertification and/or requalification (re: Record of Decision:

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[a] The TEC includes the cost of preliminary and final design ($1,093,000), which was appropriated in 02-D-103, Project Engineering and Design (PED). This is a preliminary baseline. The performance baseline will be established following completion of preliminary design and Critical Decision 2.

[b] Design funding was appropriated in 02-D-103, Project Engineering and Design (PED).

[c] Upon enactment of the FY 2003 appropriation, a total of $3,620,000 will be proposed for reallocation into this project as part of a reprogramming action. In addition, a total of $307,000 in design funding for this project will be proposed for reallocation from line item 02-D-103 as part of a reprogramming action after enactment of the FY 2003 appropriation. Obligations and costs assume that these reallocations will occur. If the FY 2003 reprogramming is not realized, the FY 2004 request would need to be amended.

Programmatic Environmental Impact Statement for Stockpile Stewardship and Management). In total, approximately 350 pits per year will require either recertification or requalification. These 350 pits will be reused to rebuild War Reserve weapons that are required to maintain the enduring stockpile. Since the recertification and requalification processes are less extensive than reuse, recertification and requalification of 350 pits per year is equivalent to the workload criterion established in the Stockpile Stewardship and Management Program. The process to recertify/requalify existing SNM components is a much more desirable alternative than manufacturing new components. The recertification/ requalification concept is more environmentally prudent. The number of pits proposed for recertification or requalification will complement the approximately 20 new pits per year which will be manufactured by Los Alamos National Laboratory (reference the Programmatic Environmental Impact Statement Stewardship and Management).

Project Milestones

FY 2003:	A-E Work Initiated	2Q
	Procurement of Long Lead Equipment	2Q
FY 2004:	A-E Work Complete	1Q
	Start Construction	1Q
FY 2006:	Complete Construction	1Q

4. Details of Cost Estimate

(dollars in thousands)

	Current Estimate	Previous Estimate
Total, Design Phase (11.0% of TEC)	1,093	1,400
Construction Phase		
Improvements to Land	0	50
Buildings	3,202	2,900
Other Structures	241	240
Utilities	0	100
Standard Equipment	7,536	3,510
Removal Cost Less Salvage	86	60
Construction Management (2.6% of TEC)	594	300
Project Management (8.6% of TEC)	487	975
Total Construction Costs (71.9% of TEC)	12,146	8,135
Contingencies		
Construction Phase (15.6% of TEC)	2,102	1,765
Total, Line Item Costs (TEC) [a]	15,341	11,300

5. Method of Performance

The design services (Title I, II, III) will be accomplished by an outside A-E firm and will be administered by the Operating Contractor (BWXT Pantex LLC). BWXT Pantex LLC will perform equipment design and procurement.

The construction services of this project will be performed by an outside construction contractor operating under a contract to be awarded on the basis of competitive bids. This contract will be administered by the Operating Contractor (BWXT Pantex LLC).

Construction Management Services will be performed by the DOE Operating Contractor (BWXT Pantex LLC).

Best value practices will be used for design and construction services.

[a] The TEC includes the cost of preliminary and final design ($1,093,000), which was appropriated in 02-D-103, Project Engineering and Design (PED). This is a preliminary baseline. The performance baseline will be established following completion of preliminary design and Critical Decision 2.

6. Schedule of Project Funding [a]

(dollars in thousands)

	Prior Years	FY 2002	FY 2003	FY 2004	Outyears	Total
Project Costs						
Facility Costs						
Design	0	0	900	193	0	1,093
Construction	0	0	1,500	6,000	6,748	14,248
Total, Line Item TEC [b]	0	0	2,400	6,193	6,748	11,300
Total, Facility Costs (Federal and Non-Federal)	0	0	2,400	6,193	6,748	15,341
Other Project Costs						
Conceptual design costs	0	440	0	0	0	440
NEPA documentation costs	0	4	0	0	0	4
Other ES&H costs	0	0	0	0	5	5
Other project-related costs	37	0	130	30	597	794
Total, Other Project Costs	37	444	130	30	602	1,243
Total, Project Cost (TPC)	37	444	2,530	6,223	7,350	16,584

7. Related Annual Funding Requirements

(FY2003 dollars in thousands)

	Current Estimate	Previous Estimate
Related annual costs (estimated life of project--30 years)		
Facility operating costs	360	360
Facility maintenance and repair costs	200	200
Programmatic operating expenses directly related to the Facility	1,500	1,500
Capital equipment not related to construction but related to the programmatic effort in the facility	350	350
Utility costs	150	150
Total related annual costs (operating from FY 2004 through FY 2033)	2,560	2,560

[a] Costs in this schedule assume that the proposed reallocation of $3,620,000 into this project for the construction phase, and the proposed reallocation of $307,000 out of 02-D-103 for the design phase, will occur.

[b] The TEC includes the cost of preliminary and final design ($1,093,000), which was appropriated in 02-D-103, Project Engineering and Design (PED). This is a preliminary baseline. The performance baseline will be established following completion of preliminary design and Critical Decision 2.

02-D-103, National Nuclear Security Administration, Project Engineering and Design (PED), Various Locations

(Changes from FY 2003 Congressional Budget are denoted with a vertical line [|] in the left margin.)

Significant Changes

Since submission of the FY 2003 Congressional Budget, the Deputy Administrator for Defense Programs and the Associate Administrator for Facilities and Operations initiated the Integrated Construction Program Plan (ICPP) for the National Nuclear Security Administration. The ICPP is a planning and prioritization document that integrates the line item construction plans included in the sites' Ten Year Comprehensive Site Plans with the Future Years Nuclear Security Program (FYNSP) in support of NNSA's Planning, Programming, Budgeting and Evaluation (PPBES) process. The FY 2004 request for this project reflects the results of this new planning and prioritization effort, and includes a number of adjustments to funding amounts and project schedules, as well as the cancellation of some projects.

The ICPP process has resulted in a number of planned reallocations from the original FY 2003 request. A total of $9,939,000 will be proposed for reallocation out of this project as part of a reprogramming action after enactment of the FY 2003 appropriation.

The FY 2002 appropriation amount does not reflect a reprogramming of -$4,000,000 from the U1A Support Facilities design subproject to RTBF/Operations of Facilities which was requested in FY 2002, but not approved until December 2002.

1. Construction Schedule History

	Fiscal Quarter				Total Estimated Cost ($000) [a]
	A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete	
FY 2002 Budget Request (*A-E and technical design only*)	1Q 2002	4Q 2004	N/A	N/A	19,880
FY 2003 Budget Request (*A-E and technical design only*)	1Q 2002	4Q 2005	N/A	N/A	83,275
FY 2004 Budget Request (*A-E and technical design only*)	1Q 2002	4Q 2006	N/A	N/A	54,628

[a] The Total Estimated Cost reflected here is the design total for all the subprojects currently included in this data sheet.

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
2002	17,542 [a]	7,337 [a]	2,104 [a]
2003	27,245 [b]	15,341 [b]	14,249 [b]
2004	10,950	18,750	15,825
2005	11,630	12,000	20,650
2006	1,200	1,200	1,800

3. Project Description, Justification and Scope

This project provides for Architect-Engineering (A-E) services (Title I and Title II) for several National Nuclear Security Administration (NNSA) construction projects, allowing designated projects to proceed from conceptual design into preliminary design (Title I) and definitive design (Title II). The design effort will be sufficient to assure project feasibility, define the scope, provide detailed estimates of construction costs based on the approved design and working drawings and specifications, and provide construction schedules, including procurements. The designs will be extensive enough to establish performance baselines and to support construction or long-lead procurements in the fiscal year in which line item construction funding is requested and appropriated.

Conceptual design studies are prepared for each project using Operations and Maintenance funds prior to receiving design funding under a PED line item. These studies define the scope of the project and produce a rough cost estimate and schedule.

FY 2002 PED design projects are described below. While not anticipated, some changes may occur due to continuing conceptual design studies or developments occurring after submission of this data sheet. These changes will be reflected in subsequent years. Preliminary estimates for the cost of Title I and II design and engineering efforts for each subproject are provided, as well as very preliminary estimates of the Total Estimated Cost (including physical construction) of each subproject.

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a Original FY 2002 appropriation of $22,830,000 was reduced by $183,000 as part of the Weapons Activities general reduction, and by $3,010,000 as part of a reprogramming to 01-D-103. The appropriated amount was further reduced by $2,095,000 as a result of a rescission pursuant to the FY 2002 Supplemental Appropriations Act, P.L. 107-206.

Obligations and costs assume the reprogramming of -$4,000,000 from the U1A Support Facilities subproject to RTBF/Operations of Facilities which was requested in FY 2002, but not approved until December 2002 (the FY 2002 appropriation amount does not reflect the reprogramming).

b Upon enactment of the FY 2003 appropriation, $9,939,000 of the FY 2003 budget request will be reallocated as part of a reprogramming action. Obligations and costs assume that this reallocation will occur. If the FY 2003 reprogramming is not realized, the FY 2004 request would need to be amended.

FY 2002 Proposed Design Projects

02-01: Test Capabilities Revitalization, Phase I, SNL

Fiscal Quarter				Total Estimated Cost (Design Only ($000)	Preliminary Full Total Estimated Cost Projection ($000)
A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
3Q 2002	4Q 2003	2Q 2004	3Q 2005	4,490 [a]	40,000-48,000

Fiscal Year	Appropriations	Obligations	Costs
2002	3,090	3,090	1,203
2003	3,500 [a]	1,400 [a]	3,287 [a]

This subproject provides the preliminary and final design for the Sandia Test Capabilities Revitalization (TCR) project. The TCR project will support urgently needed renovation and renewal work on the physical testing facilities and infrastructure at Sandia National Laboratories (SNL) required to support nuclear weapons refurbishment work. All of the physical test facilities are decades old and in need of very significant repair and maintenance. Some of them are in need of outright reconstitution in order to enable them to meet currently scheduled stockpile refurbishment requirements, or even the minimum anticipated demands over the next few decades. The goal of the proposed Test Capabilities Revitalization (TCR) project is to ensure that SNL is fully prepared to meet the physical testing demands of the stockpile refurbishment mission under any circumstances. An operational "fit-for-use" survey of existing physical testing capabilities, cross-referenced against currently scheduled or reliably anticipated stockpile refurbishment requirements, has revealed the need to renovate, rebuild, or otherwise revitalize up to three dozen different physical testing facilities, the bulk of which are located in Sandia's Technical Area III (TA-III). The objective of the proposed TCR project is to redress the aging and deterioration of physical testing facilities and infrastructure in an orderly, integrated, efficient, organized, and cost-effective manner. The testing capabilities revitalization effort has been split into two phases. This design subproject supports only Phase I of the revitalization effort, which includes the Aerial Cable Facility and the Thermal Test Complex.

Construction funding for this project is requested in FY 2004 in line item 04-D-101.

02-02: Nevada Test Site (NTS) Facility Consolidation, NV

As a result of the ICPP planning and prioritization process, NNSA has cancelled this project.

a The TCR project has been split into two phases. As a result the design funding required is reduced. Upon enactment of the FY 2003 appropriation, $2,100,000 of the FY 2003 budget request will be reallocated as part of a reprogramming action. Obligations and costs assume that this reallocation will occur.

02-03: Exterior Communications Infrastructure Modernization (ECIM), SNL

Fiscal Quarter				Total Estimated Cost (Design Only ($000)	Preliminary Full Total Estimated Cost Projection ($000)
A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
3Q 2002	2Q 2004	3Q 2004	3Q 2006	2,500	22,500-28,000

Fiscal Year	Appropriations	Obligations	Costs
2002	1,497 [a]	1,497	738
2003	1,500 a	1,003 a	1,530 a
2004	0	0	232 a

This subproject provides the preliminary and final design of the Exterior Communications Infrastructure Modernization (ECIM) project. The objectives of this project are to modernize and integrate the exterior communications duct bank system that provides data, voice, dedicated security communications and facility control systems connectivity within Tech Area I of the Sandia National Laboratories (SNL) New Mexico site. The original duct bank system, much of which is still used today, was installed in the 1950s. It is composed of collapsing clay and ceramic duct banks mixed with direct burial cables. Manholes often flood and remain filled with water for long periods of time. Some of the 50-year-old copper cables are constructed with hazardous lead sheathing and deteriorating paper composites that have become unreliable. Optical fiber cables installed in the 1970s have become inadequate in capacity, brittle, and difficult to maintain and service.

The infrastructure system currently supports a workforce of approximately 9,000 people at the SNL/NM site. Many of SNL's current and emerging capabilities rely heavily on the communications infrastructure. Ideally, this infrastructure system enables the high-speed, high-fidelity transmission of data within and between buildings, and across sites, in support of a multitude of mission activities. SNL/NM invested $30 million to modernize the interior cabling systems within most large buildings on the site from 1992 through 1996. Eighty percent of interior telecommunication cabling has been completed, thereby permitting modern internal connectivity and enhanced maintenance cost effectiveness. However, these enabled facilities now communicate with each other with an aging, failing, and incapable inter-building cabling system. The ECIM project addresses these issues and integrates voice, data, security and access control telecommunications systems as well as providing the flexibility to adjust to future requirements. The new exterior infrastructure will provide a combination of new and renovated exterior duct banks, manholes, cabling and building termination equipment within Tech Area I of the SNL/NM site.

Construction funding for this project is requested in FY 2004 in line item 04-D-102.

a FY 2003 funding required for the ECIM project is reduced because $497,000 available in FY 2002 due to the cancellation of the Replace Oil Based Protective Interrupting Devices subproject was made available to ECIM to expedite design. Upon enactment of the FY 2003 appropriation, $497,000 of the FY 2003 budget request will be reallocated as part of a reprogramming action. Obligations and costs assume that this reallocation will occur.

02-04: Replacement of Function Tester, SRS

Fiscal Quarter				Total Estimated Cost (Design Only ($000)	Preliminary Full Total Estimated Cost Projection ($000)
A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
1Q 2005	4Q 2006	1Q 2007	4Q 2008	9,100	35,000-38,000

Fiscal Year	Appropriations	Obligations	Costs
2002	0	0	0
2003	800	0	0
2004	0	0	0
2005	7,100	7,900	7,900
2006	1,200	1,200	1,200

This subproject, to design the replacement of the existing Function Test Facility located in 232-H at SRS, has been deferred and will begin design in 2005. The Function Test Facility building is over 40 years old and employs obsolete technology. It is being deactivated to reduce operating and maintenance costs. Two other function testers are currently located in 233-H. The number of required function tests to support reservoir surveillance in the future will require the use of a third tester to ensure that there is no backlog of testing. It is proposed to locate a new function tester in 233-H near the existing two testers. The new tester will make use of existing support systems where practical. The capability of a real time mass spectrometer will be included.

02-05: LIGA Technologies Facility, SNL

Fiscal Quarter				Total Estimated Cost (Design Only ($000)	Preliminary Full Total Estimated Cost Projection ($000)
A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
1Q 2004	4Q 2005	1Q 2006	4Q 2007	3,000	35,000-38,000

Fiscal Year	Appropriations	Obligations	Costs
2002	0	0	0
2003	1,500 [a]	0 [a]	0 [a]
2004	1,500	1,500	1,500
2005	1,500	1,500	1,500

This subproject, which provides the preliminary and final (Title I and Title II) design for the proposed Sandia National Laboratories LIGA Technologies Facility (LTF) project at Sandia National Laboratories in Livermore, California (SNL/CA), has been delayed until 2004 as a result of ICPP planning and

a The LTF has been delayed one year. Upon enactment of the FY 2003 appropriation, the FY 2003 budget request of $1,500,000 will be reallocated as part of a reprogramming action. Obligations and costs assume that this reallocation will occur. If the FY 2003 reprogramming is not realized, the FY 2004 request would need to be amended.

prioritization. The LTF is needed for the research and development (R&D) and the prototyping of LIGA and LIGA-like microdevices necessary to meet current and future programmatic requirements of refurbishing and modernizing the current nuclear weapon stockpile. LIGA, an acronym from the German words for lithography, electroforming and molding, is a microfabrication process involving x-ray lithography, electrodeposition, and replication. The reduced size and weight of microsystems parts fabricated using the LIGA process permits the replacement of critical components, as well as the addition of new capabilities including safety improvements, without unacceptably impacting the weapon system performance.

LTF is necessary because existing facilities at SNL/CA lack a sufficient quantity of high quality, dedicated cleanroom space and support infrastructure. These facilities are necessary not only to develop and prototype LIGA microparts, but also to reduce the risk associated with weaponization by conducting R&D to obtain fundamental understanding of processing and the associated performance of LIGA systems in the weapons environment.

As currently planned, the LTF will provide process and process support cleanrooms, functional areas, and laboratory environments of the appropriate size and with the necessary technical performance characteristics essential for LIGA and LIGA-like part and device microfabrication, assembly, aging, and testing. It will also consolidate the various LIGA processes and related support areas currently located in three separate primary labs and numerous secondary laboratories scattered throughout SNL/CA into a common and efficiently structured facility.

02-06: North Las Vegas Fire Alarm System, NV

This subproject, to provide for the installation of a new fire alarm notification system to replace the existing obsolete system at the North Las Vegas Facility (NLVF), has been downscoped as a result of the ICPP planning and prioritization process and is now being considered as a candidate for operations and maintenance funding under the Facilities and Infrastructure Recapitalization Program. The FY 2002 funding of $400,000 originally planned for this design project was rescinded pursuant to the FY 2002 Supplemental Appropriations Act, P.L. 107-206.

02-07: Replace Oil Based Protective Interrupting Devices, NTS

Fiscal Quarter				Total Estimated Cost (Design Only ($000)	Preliminary Full Total Estimated Cost Projection ($000)
A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
cancelled	N/A	N/A	N/A	cancelled	N/A

Fiscal Year	Appropriations	Obligations	Costs
2002	0 [a]	0	0
2003	200 [b]	0 b	0 b

This subproject, to replace protective interrupting devices within critical transmission stations on the 138kV-power transmission loop at the NTS, is now considered a candidate for funding under the Facilities and Infrastructure Recapitalization Program as a result of the ICPP planning and prioritization process. The FY 2002 appropriation originally planned for this design subproject has been reallocated to the ECIM subproject. The FY 2003 appropriation will be reallocated as part of a reprogramming action upon enactment of the FY 2003 appropriation.

a Original FY 2002 appropriation of $497,000 was made available to the ECIM subproject as a result of cancellation of this project as a line item in RTBF.

b Upon enactment of the FY 2003 appropriation, the FY 2003 budget request of $200,000 will be reallocated as part of a reprogramming action. Obligations and costs assume that this reallocation will occur.

02-08: Beryllium Manufacturing Facility, Y-12

Fiscal Quarter				Total Estimated Cost (Design Only ($000)	Preliminary Full Total Estimated Cost Projection ($000)
A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
2Q 2003	2Q 2006	3Q 2006	3Q 2009	24,600	150,000-200,000

Fiscal Year	Appropriations	Obligations	Costs
2002	5,205 [a]	0	0
2003	10,000 [b]	8,000 [b]	4,000 [b]
2004	7,700	14,000 [b]	10,000 [b]
2005	3,030	2,600 [b]	10,000 [b]
2005	0	0	600 [b]

This subproject provides the preliminary and final (Title I and Title II) design for the proposed Beryllium Facility at the Y-12 Plant. The Beryllium Facility will: 1) consolidate all beryllium operations at Y-12; 2) provide long-term capability and capacity to support the Stockpile; 3) benefit from knowledge and experience gained from early/expedited prototype efforts of the NNSA Y-12 Special Materials Capabilities Program and; 4) will comply with the new ACGIH limit for suspended beryllium in air. Beryllium operations at Y-12 are currently performed in multiple, aging facilities that require extensive administrative controls to maintain compliance; the new facility would eliminate the use of respirators during normal operations.

The Beryllium Manufacturing Facility would contain blank forming, machining, laboratory analysis, inspection and certification operations in addition to other supporting functions. Primary operations would be enclosed in gloveboxes to protect workers from exposure to beryllium and the facility would be equipped with secondary and tertiary confinement ventilation systems.

This project is being done in support of the remanufacturing requirements for the Nuclear Weapons Complex. This project will provide modern facilities that are designed to the latest standards for worker and environmental protection.

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[a] Original FY 2002 appropriation of $7,700,000 was reduced by $800,000 as part of a reprogramming to 01-D-103 for the Purification Facility design. The appropriated amount was further reduced by $1,695,000 as a result of a rescission pursuant to the FY 2002 Supplemental Appropriations Act, P.L. 107-206.

[b] Start of design for the Beryllium Manufacturing project has been delayed pending completion of program evaluations at the site. As a result, the design funding required in FY 2003 is reduced. Upon enactment of the FY 2003 appropriation, $1,335,000 of the FY 2003 budget request will be reallocated as part of a reprogramming action. Obligations and costs assume that this reallocation will occur. If the FY 2003 reprogramming is not realized, the FY 2004 request would need to be amended and/or the outyear profile revised.

02-09: Purification Production Facility, Y-12

Fiscal Quarter				Total Estimated Cost (Design Only ($000)	Preliminary Full Total Estimated Cost Projection ($000)
A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
cancelled	N/A	N/A	N/A	cancelled	N/A

Fiscal Year	Appropriations	Obligations	Costs
2002	0 [a]	0	0
2003	4,000 [b]	0 [b]	0 [b]

This subproject has been cancelled as a result of the determination that the prototype facility can be designed and constructed to meet both near-term LEP requirements and support projected longer-term weapons program needs thus eliminating the need for the large scale production facility. An FY 2002 reprogramming action moved the FY 2002 funding of $2,210,000 from this project to 01-D-103 for design of the Purification Facility, and the $4,000,000 originally planned for FY 2003 is planned for reallocation.

02-10 Building 12-44 Production Cells Upgrade, PX

Fiscal Quarter				Total Estimated Cost (Design Only ($000)	Preliminary Full Total Estimated Cost Projection ($000)
A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
2Q 2003	4Q 2004	1Q 2005	1Q 2007	2,600	10,000-15,000

Fiscal Year	Appropriations	Obligations	Costs
2002	1,500	1,500	0
2003	1,100	1,100	1,700
2004	0	0	900

This subproject provides the preliminary and final (Title I and Title II) design for the Pantex Building 12-44 Production Cells Upgrade (5 Cells). This project will lessen the cell shortfall by modifying five cells in building 12-044. The upgrade will bring these cells up to the same operational/capacity level as other cells at Pantex. The modifications to each of the five cells include:

1.1 Task exhaust installation
1.2 Contaminated Waste Isolation installation
1.3 Dehumidifier installation

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[a] Original FY 2002 appropriation of $2,210,000 was reprogrammed to 01-D-103 for the Purification Facility design.

[b] Due to the cancellation of this project, upon enactment of the FY 2003 appropriation, the FY 2003 budget request of $4,000,000 will be reallocated as part of a reprogramming action. Obligations and costs assume that this reallocation will occur.

1.4 HVAC replacement

The Building 12-44 Production Cells Upgrade will provide a crucial asset in meeting the DOE's objective of maintaining confidence in the nuclear weapons stockpile. This project will provide modifications to an existing facility to increase capacity to meet the impact of changing weapon complexity, projected workload, and the stockpile refurbishment activities. The W-76 program is the first user to benefit from this additional capacity with other programs to follow.

Construction funding for this facility is requested in FY 2004 in line item 04-D-126.

02-11: SNM Component Requalification Facility, PX

Fiscal Quarter				Total Estimated Cost (Design Only ($000)	Preliminary Full Total Estimated Cost Projection ($000)
A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
2Q 2003	1Q 2004	1Q 2004	1Q 2006	1,093 [a]	11,000-16,000

Fiscal Year	Appropriations	Obligations	Costs
2002	950	950	0
2003	450 a	143 a	900 a
2004	0	0	193 a

This subproject provides the preliminary and final (Title I and Title II) design for the Pantex SNM Component Requalification Facility (SNMCRF). The SNMCRF will be constructed within a section of Building 12-86 which will be reconfigured to meet DOE Order 6430.1A requirements for a hazard Category II Non-Reactor Nuclear Facility, as determined by DOE-STD-1027-92 for hazard potentials and quantities of radioactive material in the facility. Radioactive materials will be handled and process-staged in the SNMCRF. The SNMCRF will be constructed as a vault with Class 5 vault doors at each entrance to establish a new security area that will control and detect unauthorized access into the facility.

The DOE has given the mission assignment to the Pantex Plant to develop the capability to process pits through recertification and/or requalification in the Record of Decision on the Programmatic Environmental Impact Statement for Stockpile Stewardship and Management. In total, approximately 350 pits per year will require either recertification or requalification. These 350 pits will be reused to rebuild War Reserve weapons that are required to maintain the enduring stockpile. The process to recertify/requalify existing SNM components is a much more desirable alternative than manufacturing new components. The recertification/requalification concept is more environmentally prudent as well.

Line item 03-D-123 includes construction funding for this project.

a The actual design costs for this subproject are lower than planned. As a result, the design TEC has been reduced and upon enactment of the FY 2003 appropriation, $307,000 of the FY 2003 budget request will be reallocated as part of a reprogramming action. Obligations and costs assume that this reallocation will occur.

02-12: U1A Support Facilities, NTS

Fiscal Year	Appropriations	Obligations	Costs
2002	4,000 [a]	0	0
2003	0	0	0

This subproject was added specifically by Congress in the FY 2002 Appropriations Act for modernization of the surface support facilities for the U1A Complex at the Nevada Test Site. The funding was reprogrammed to RTBF/Operations of Facilities to conduct the modernization work.

02-13: Gas Transfer Capacity Expansion, KC

Fiscal Quarter				Total Estimated Cost (Design Only ($000)	Preliminary Full Total Estimated Cost Projection ($000)
A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
3Q 2002	4Q 2003	1Q 2003	1Q 2006	995	30,000-35,000

Fiscal Year	Appropriations	Obligations	Costs
2002	300	300	163
2003	695	695	832
2004	0	0	0

This subproject provides the preliminary and final (Title I and Title II) design for the proposed Gas Transfer Expansion project at the Kansas City Plant. This project will provide the KCP with the required equipment and facility resources to support new designs in reservoir production in addition to the existing production schedules for stockpile refurbishments. It will provide the capital equipment and the facility modifications required to expand the current reservoir facility for new gas transfer system production.

As currently planned, the project will expand the current reservoir production department by approximately 13,000 square feet by extending the existing boundaries across an aisle and into the current Model Shop. This expansion area will house new weld and weld finishing equipment, and enlarge inspection facilities. The capital equipment plan includes both installation of new equipment and relocation of some existing equipment to improve production efficiency. In addition the A-Room will be expanded within the existing Reservoir facility by approximately 800 square-feet.

Line item 03-D-121 includes construction funding for this project.

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a The FY 2002 appropriation amount does not reflect a reprogramming of $4,000,000 from the U1A Support Facilities subproject to RTBF/Operations of Facilities which was requested in FY 2002, but not approved until December 2002. Obligations and costs reflect the reprogramming.

02-14: Cleaning and Loading Modifications (CALM), SRS

Fiscal Quarter				Total Estimated Cost (Design Only ($000)	Preliminary Full Total Estimated Cost Projection ($000)
A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
3Q 2003	1Q 2005	1Q 2005	3Q 2007	6,250	35,000-50,000

Fiscal Year	Appropriations	Obligations	Costs
2002	1,000	0	0
2003	3,500	3,000	2,000
2004	1,750	3,250	3,000
2005	0	0	1,250

This subproject provides the preliminary and final (Title I and Title II) design for the Acorn Loading and Cleaning Modification (CALM) project. This project will provide for modifications of reservoir equipment/facilities at the Savannah River Site. The Life Extension Program (LEP) will require additional Acorn type tritium reservoirs. New Acorn reservoirs for the W76 and W80 weapon systems will need to be filled in FY 2006. Starting in FY 2008, the projected number of required loadings exceeds the capacity of the Tritium Facilities. This line item will modify an existing reservoir loading line to enable filling of Acorn reservoirs. Also, the facility for cleaning Acorn reservoirs prior to filling will be expanded and an existing line will be modified. The objective is to provide the cleaning, filling, and unloading capacity necessary to support the LEP. In addition, the line will be modified to enable filling of the new proposed W87 reservoir. Impacts to on-going production activities will be minimized.

| Construction funding has been requested for this project in FY 2004 in line item 04-D-127.

4. Details of Cost Estimate [a]

(dollars in thousands)

	Current Estimate	Previous Estimate
Design Phase [b]		
Preliminary and Final Design Costs (Design Drawings and Specifications)	40,973	62,428
Design Management Costs (15% of TEC)	8,195	12,491
Project Management Costs (10% of TEC)	5,460	8,356
Total, Design Costs (100% of TEC)	54,628	83,275
Total, Line Item Costs (TEC)	54,628	83,275

5. Method of Performance

Design services will be obtained through competitive and/or negotiated contracts. M&O contractor staff may be utilized in areas involving security, production, proliferation, etc. concerns.

6. Schedule of Project Funding [c]

(dollars in thousands)

	Prior Years	FY 2002	FY 2003	FY 2004	Outyears	Total
Project Costs						
Facility Costs						
Project Engineering and Design	0	2,104	14,249	15,825	22,450	54,628
Total, Line item TEC	0	2,104	14,249	15,825	22,450	54,628
Total, Facility Costs (Federal and Non-Federal)	0	2,104	14,249	15,825	22,450	54,628
Other Project Costs						
Conceptual design costs	5,778	0	0	0	0	5,778
Other project-related costs	1,213	4,697	2,598	895	1,550	10,953
Total, Other Project Costs	6,991	4,697	2,598	895	1,550	16,731
Total, Project Cost (TPC)	6,991	6,801	16,847	16,720	24,000	71,359

[a] This cost estimate is based upon direct field inspection and historical cost estimate data, coupled with parametric cost data and completed conceptual studies and designs, when available. The cost estimate includes design phase activities only. Construction activities will be requested as individual line items upon completion of Title I design.

[b] The percentages for Design Management; Project Management; and Design Phase Contingency are estimates base on historical records and are preliminary estimates.

[c] Costs in this schedule assume that the proposed reallocation of $9,939,000 out of this project will occur.

02-D-105, Engineering Technology Complex Upgrade, Lawrence Livermore National Laboratory, Livermore, California

(Changes from FY 2003 Congressional Budget are denoted with a vertical line [|] in the left margin.)

Significant Changes

The preliminary cost estimate range for this project that was developed in January 2002, included seismic upgrades that complied with the existing Department of Energy standards. Subsequent to the preliminary estimate, the Federal Emergency Management Administration (FEMA) established new, more stringent, seismic requirements that existing facilities must meet. In addition, the preliminary estimate did not adequately anticipate the need to remove and relocate or reinstate existing utilities that obstruct access to the structural systems that were being seismically upgraded. The cost to seismically upgrade the facility to meet FEMA's more stringent requirements and to remove and relocate the existing utilities exceeded the preliminary cost estimate by approximately $10 million.

In order to maintain the preliminary cost and schedule estimates for this project, the project scope has been revised to delete the following: all Seismic Upgrade work in Building 321A and B; and all General Modifications work in Building 321A and B, including the pedestrian entrance and Corporation Yard site screen and canopy. The seismic upgrades to Building 321A and B that have been deleted from the scope of this project will be included in a future Line Item project, which will comprehensively address institution-wide seismic issues at Lawrence Livermore National Laboratory.

1. Construction Schedule History

	Fiscal Quarter				Total Estimated Cost ($000)	Total Project Cost ($000)
	A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
FY 2003 Budget Request (*Preliminary Estimate*)	2Q 2002	4Q 2003	4Q 2002	4Q 2006	26,700	27,700
FY 2004 Budget Request (*Preliminary Estimate*)	2Q 2002	3Q 2003	3Q 2002	1Q 2006	26,700 [a]	27,700

[a] The TEC includes the cost of preliminary and final design ($2,250,000), which was appropriated in 01-D-103, Project Engineering and Design (PED). This is a preliminary estimate. The performance baseline will be established following completion of preliminary design and Critical Decision 2 currently scheduled for the third quarter of FY 2003.

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
Design [a]			
2002	2,250	2,250	984
2003	0	0	1,266
Construction			
2002	4,674 [b]	4,674	268
2003	10,000	10,000	8,600
2004	9,776	9,776	8,900
2005	0	0	5,450
2006	0	0	1,232

3. Project Description, Justification and Scope

The Engineering Technology Complex Upgrade (ETCU) project addresses technological obsolescence and corrects code compliance shortfalls associated with structural seismic design of Building 321C. It also upgrades Building 321 A & C to improve current environmental, safety and health compliance while improving cost effective operations by consolidating and reorganizing laboratory functions in Building 321C.

The B321 Complex was constructed in increments, beginning in 1956, to provide engineering fabrication services for research programs at LLNL. Today, the 46 year old Complex and associated machine tool equipment are obsolete and do not meet current or anticipated future Weapons Program requirements. Building 321 Complex systems vary in age and condition and generally fail to comply with current seismic design and construction codes, life safety code requirements or environmental health, safety and energy compliance standards. Failure to upgrade the B321 Complex will: 1) further degrade existing deteriorated infrastructure, which will increase maintenance costs, continue higher energy use costs, lower operating efficiency and reduce the quality of manufactured research components; 2) critical Stockpile Stewardship Program operations will continue to be adversely impacted by the lack of quantity and quality of non-state-of –the-art research components.

The ETCU project upgrades aging Building 321 Complex infrastructure, which supports critical LLNL Defense Programs research activities, including the National Ignition Facility (NIF), Lasers, Computations, Chemistry and Materials Science and Engineering. LLNL Defense Programs research activities directly support the National Nuclear Security Administration (NNSA) Stockpile Stewardship Program goals and associated NNSA Campaigns. The ETCU Project will benefit the following NNSA Campaigns, which are designed to develop and maintain critical capabilities needed to achieve confidence in the certification of the nuclear weapons stockpile without nuclear testing: the Primary

[a] Design funding was appropriated in 01-D-103, Project Engineering and Design (PED).

[b] Appropriation of $4,750,000 was reduced by $76,000 for the FY 2002 Weapons Activities general reduction.

Certification Campaign and the Secondary Certification and Systems Margins Campaign will benefit from the new enhanced Building 321 fabrication capabilities. The upgraded Complex will directly support the Dynamic Materials Campaign by creating a facility designed to enhance the fabrication of unusual test components for probing material properties. The ETCU project will help achieve Advanced Radiography Campaign objectives by creating an environment for improving complex, hydro test component fabrication tolerances. The ETCU project is an integral part of the FY 2002 DP Strategic Plan for LLNL Line Item construction, as documented in the LLNL Ten (10) Year Plan.

ETCU project blends the rehabilitation of Building 321A and C and consolidation of research activities with upgrading machine tool equipment to achieve building and life safety code compliance, enhanced Weapons Program fabrication capabilities and improved operational efficiency. To plan and execute the project performance scope, cost and schedule baselines within the constraints imposed by multi-year funding appropriations, the ETCU project is divided into four separate tasks. This approach matches the sequencing of construction activities and purchase of long lead equipment to the availability of project funding. The B321 Roof Equipment Replacement task will replace aging roof mounted HVAC equipment serving Buildings 321A and C and retrofit selected exhaust systems with new HEPA filters to improve facility temperature control and enhance clean laboratory environments. The replacement of roof equipment is being coordinated with the Protection of Real Property: Roofs, Phase II project (99-D-104), which will replace the Building 321Complex roof The B321 Machining Equipment task provides for the purchase and installation of new and replacement machine tools, machine tool upgrades and inspection equipment to enhance the B321 precision manufacturing capability. The B321C Seismic Upgrade task provides for retrofitting the Building 321C structural systems to meet current seismic design standards. Building 321C covers approximately 85,000 square feet in area. The Building 321C General Modifications task reconfigures approximately 20,000 square feet of existing Building 321C floor space to improve space utilization of the Numerical Control Machining and Ultra-precision Machining areas, consolidate and improve the operational efficiency of the Building 321C Beryllium Machining and Inspection operations, upgrade or replace selected building systems) and modify restrooms to reflect changes in workplace diversity and current accessibility standards.

Project Milestones:

FY 2003:	Start Construction B321A&C Roof Equipment Replacement	1Q
	Start Activation ETCU Machine Tool Equipment	1Q
	Start Construction B321C Seismic Upgrade	4Q
	Start Construction B321 General Modifications	4Q
FY 2004	Start Activation of B321 A&C Roof Equipment Replacement	2Q
	Start Operations of Machine Tools	4Q

4. Details of Cost Estimate

(dollars in thousands)

	Current Estimate	Previous Estimate
Total, Design Phase (8.4% of TEC) [a]	2,250	2,250
Construction Phase		
Buildings	13,610	11,900
Standard Equipment	4,470	6,610
Inspection, Design and Project Liaison, Testing, Checkout and Acceptance	1,070	1,040
Construction Management (3.8% of TEC)	1,010	910
Project Management (2.8% of TEC)	760	690
Total Construction Costs (78.3% of TEC)	20,920	21,150
Contingencies		
Construction Phase (13.2% of TEC)	3,530	3,300
Total, Line Item Costs (TEC)	26,700	26,700

5. Method of Performance

Design will be performed by a combination of AE firms and LLNL forces. Major construction will be accomplished by negotiated fixed-price delivery order contracts awarded to the LLNL Labor Only Contractor. Selected minor construction and activation will be done by LLNL forces.

[a] Design funding was appropriated in 01-D-103, Project Engineering and Design (PED).

6. Schedule of Project Funding

(dollars in thousands)

	Prior Years	FY 2002	FY 2003	FY 2004	Outyears	Total
Project Cost						
Facility Costs						
Design [a]	0	984	1,266	0	0	2,250
Construction	0	268	8,600	8,900	6,682	24,450
Total, Line item TEC	0	1,252	9,866	8,900	6,682	26,700
Total Facility Costs (Federal and Non-Federal)	0	1,252	9,866	8,900	6,682	26,700
Other Project Costs						
Conceptual design costs	370	0	0	0	0	370
NEPA documentation costs	20	0	0	0	0	20
Other project-related costs	50	80	0	0	480	610
Total, Other Project Costs	440	80	0	0	480	1,000
Total Project Cost (TPC)	440	1,332	9,866	8,900	7,162	27,700

7. Related Annual Funding Requirements

(FY 2006 dollars in thousands)

	Current Estimate	Previous Estimate
Annual facility operating costs	1,500	1,360
Total related annual funding (operating from FY 2006 through FY 2025)	1,500	1,360

[a] Design funding was appropriated in 01-D-103, Project Engineering and Design (PED).

02-D-107, Electrical Power Systems Safety, Communications and Bus Upgrades, Nevada Test Site, Nye County, Nevada

(Changes from FY 2003 Congressional Budget are denoted with a vertical line [|] in the left margin.)

Significant Changes

The Performance Baseline for this project was approved on November 1, 2002, and is reflected in this data sheet.

1. Construction Schedule History

	Fiscal Quarter				Total Estimated Cost ($000)	Total Project Cost ($000)
	A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
FY 2002 Budget Request	1Q 2002	3Q 2003	4Q 2002	2Q 2005	16,531 [a]	16,896
FY 2003 Budget Request *(Preliminary Estimate)*	2Q 2002	3Q 2003	4Q 2002	2Q 2005	16,531 a	16,696
FY 2004 Budget Request *(Performance Baseline)*	2Q 2002	4Q 2003	3Q 2004	4Q 2005	16,531 a	16,696

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
Design [b]			
2002	2,693	2,693	727
2003	0	0	1,754
2004	0	0	212
Construction			
2002	3,451	3,451	29
2003	7,500	7,500	1,725
2004	2,887	2,887	7,525
2005	0	0	4,559

[a] The TEC includes the cost of preliminary and final design ($2,693,000) which was appropriated in 01-D-103, Project Engineering and Design.

[b] Design funding was appropriated in 01-D-103, Project Engineering and Design (PED).

3. Project Description, Justification and Scope

A safe, reliable power system at the Nevada Test Site (NTS) is a critical element of the science-based Stockpile Stewardship program. This project is necessary to support the increased demands for safety and reliability in the power system for sub-critical experiments and planned gas gun experiments, as well as emergency management, test readiness, other weapons experiments, work for other national security organizations, and other experimental programs. It is part of an ongoing, multi-year construction program needed to maintain the NTS in a state of readiness to support DOE's strategic objectives. Previous line item projects have upgraded various aspects of the NTS Power Distribution and Transmission System, which includes eight substations and one switching center. These projects (the Power Systems Distribution project, 90-D-102, and the 138kV Substation Modernization project, 96-D-102) provided for a Supervisory Control and Data Acquisition (SCADA) System at all but one of the substations, and SCADA fiber optics communications systems and relay upgrades at all of the substations.

Most of the NTS transmission facilities and systems are already between 35 and 40 years old. As such, during the next decade as many critical components of the 138 kV transmission system experience failure, vital replacement components (e.g., transformers, circuit switchers, oil circuit breakers, etc.) will no longer be manufactured or even available for purchase. Over the past several years increased outages due to the equipment failure have demonstrated that these facilities have reached the end of their expected useful life span. In fact, in 1998 at Mercury Distribution Substation, a "flash-over" incident occurred and "substation configuration" was a major contributing factor. This project will correct this and other hazardous conditions.

Timely upgrades on obsolete portions of the power system must be made to maintain the ability to meet the following minimum criteria for the NTS Power Transmission and Distribution System.

1. Maintain all basic safety requirements in accordance with the American National Standards Institute (ANSI), the Institute of Electrical & Electronic Engineers (IEEE) and the Occupational Safety and Health Act (OSHA).
2. Maintain voltage levels at 95% or more of nominal on the entire 138 kV system during normal operating condition and above 90% during emergency or single outage conditions of limited duration. The voltage levels are in accordance with ANSI/IEEE Standards 141 and ANSI C84.1 which have been adopted for the NTS power system.
3. Act as a *de facto* public utility in providing adequate and reliable power to the users of the NTS, which have no other source of power.
4. Provide sufficient capacity to ensure reliable service to existing loads while allowing additional moderate-sized loads to come on line.
5. Ensure adequate system fault protection.

| The Electrical Power Systems Safety, Communications and Bus Upgrades project will provide for a new Mercury Distribution Substation and the upgrade of Jackass Flats Substation (JF) and Mercury Switching Center. The substations and the switching center are located within the primary power transmission loop at the Nevada Test Site (NTS). The project will mitigate safety and environmental

issues that now exist in the old Mercury Substation and take it off the radial feed from the Mercury Switching Center and place the new Mercury Distribution Substation directly on the 138 kilovolt (kV) loop. Previous line item projects that addressed the Mercury Substation, the oldest substation at the NTS, merely kept the substation operational. Building a new Mercury Distribution Substation has been determined to be the most cost effective means of alleviating the issues. A key element of this project will improve the connection between the NTS power system and Valley Electric Association transmission lines, one of two external power sources available to the test site, at the Jackass Flats Substation. Another key element of this project will include adding a transfer bus scheme at the Mercury Switching Center by reusing the existing radial feeder gas circuit breaker and associated bay which will become available when the new Mercury Distribution Substation is built. Mercury Switching Center serves as either the back-up or primary point of connection for commercial power at the NTS.

Specifically, the upgrades supported by this project will include the following:

1. New Mercury Distribution Substation - This replacement substation will be constructed on the 138 kV transmission loop and be located near the existing substation. The new substation will include four new 138 kV gas circuit breakers; a new indoor 15 kV metal-clad switchgear lineup; and two new dual rated 138 kV-12.47/4.16 kV, 10 MVA oil-filled transformers with automatic load tap changer (LTC). In addition, the new substation will include a new control house, new substation Supervisory Control and Data Acquisition (SCADA) components which will tie into the existing SCADA system, and miscellaneous relaying and hardware required for a complete substation installation. The existing substation will be de-energized and demolished aboveground. Site improvements at the proposed Mercury Distribution Substation will include site and access road grading, conduit trenching, perimeter fencing, area lighting, extension of the existing underground distribution system, and concrete foundations for power equipment installation.

2. Upgrade Jackass Flats Substation - The upgrade will include four new gas circuit breakers, a new 138 kV-12.47 kV, 15 MVA oil-filled transformer with automatic LTC, and 12 new 138kV air switches, and will remove four existing 138 kV oil circuit breakers and the existing 138 kV-69 kV, 20 MVA transformer. It will also rearrange the existing bus configuration into a more efficient and safer layout. The twelve existing obsolete 138 kV gang operated disconnect switches will be removed and replaced and the new upgrades will be tied to the existing SCADA system.

   The reconfiguration of JF will replace the existing 69 kV and 15 kV distribution systems with an upgraded 15 kV distribution system. This upgrade will add four 15 kV outdoor distribution breakers, controls and associated hardware; and remove one 69 kV oil circuit breaker, one 2.5 MVA, 69 kV-12.47 kV transformer with regulators, and associated controls and hardware. The 69 kV overhead distribution lines will be converted to 15 kV along with the distribution transformers, disconnect switches, and associated hardware being fed from the 69 kV overhead distribution lines.

3. Upgrade Mercury Switching Center - This is the main switching station at the NTS, and it serves as a back-up or primary connection point for commercial power from Valley Electric Association or Nevada Power Company and provides power to the NTS transmission and distribution system. The upgrade will reuse the existing Mercury Substation gas circuit breaker and associated bay, which will be converted into a transfer bus scheme, once the new Mercury Distribution Substation is built. Once this circuit breaker and associated bus, controls, hardware and protection devices are

developed into a transfer bus breaker scheme, it can then be used as a replacement for any of the other three existing breakers, during maintenance or loss of a feeder breaker. This will also allow for relay settings to match the original breaker settings and offer full circuit protection.

Project Milestones:

FY 2003	Complete Design. Complete advanced procurement process for long lead items.
FY 2004	Award construction contract. Start construction on Mercury Distribution Substation and Upgrade Jackass Flats Substation.
FY 2005	Start construction on Mercury Switching Center. Complete all construction and project closeout.

4. Details of Cost Estimate

(dollars in thousands)

	Current Estimate	Previous Estimate
Total, Design Phase (16.3% of TEC) [a]	2,693	2,693
Construction Phase		
Improvements to Land	10,931	9,520
Inspection, Design and Project Liaison, Testing, Checkout and Acceptance	401	503
Construction Management (2.5% of TEC)	417	938
Project Management (2.9% of TEC)	480	645
Total Construction Costs (74% of TEC)	12,229	11,606
Contingencies		
Construction Phase (9.7% of TEC)	1,609	2,232
Total, Line Item Costs (TEC) [b]	16,531	16,531

5. Method of Performance

Design engineering services and other related functions will be performed by the on-site performance based management contractor. To the extent feasible, construction and procurement will be accomplished by fixed-priced contracts and subcontracts awarded on the basis of competitive bidding. Inspection, contract administration, surveying, and related project functions will be accomplished by the performance-based management contractor.

[a] Design funding was appropriated in 01-D-103, Project Engineering and Design (PED).

[b] Escalation rates based on FY 2002 DOE escalation multiplier tables: 4% on labor and midpoint activity escalation range.

6. Schedule of Project Funding

(dollars in thousands)

	Prior Years	FY 2002	FY 2003	FY 2004	Outyears	Total
Project Cost						
Facility Costs						
Design [a]	0	727	1,754	212	0	2,693
Construction	0	29	1,725	7,525	4,559	13,838
Total, Line item TEC	0	756	3,479	7,737	4,559	16,531
Total Facility Costs (Federal and Non-Federal)	0	756	3,479	7,737	4,559	16,531
Other Project Costs						
Conceptual design costs	90	0	0	0	0	90
Other project related costs	75	0	0	0	0	75
Total, Other Project Costs	165	0	0	0	0	165
Total Project Cost (TPC)	165	756	3,479	7,737	4,559	16,696

7. Related Annual Funding Requirements

(FY 2002 dollars in thousands)

	Current Estimate	Previous Estimate
Annual facility operating costs	0	0
Total related annual funding (operating from FY 2002 through FY 2035)	0	0

[a] Design funding was appropriated in 01-D-103, Project Engineering and Design (PED).

01-D-103, National Nuclear Security Administration
Project Engineering and Design (PED),
Various Locations

(Changes from FY 2003 Congressional Budget are denoted with a vertical line [|] in the left margin.)

Significant Changes

The TEC for this line item is reduced by $964,000 due to changes to two subprojects: TA-18 Mission Relocation Project (-$3,974,000) and Purification Facility (+$3,010,000).

The TEC, design start and completion dates, and the design funding profile for the TA-18 Mission Relocation subproject have been modified in accordance with the Department of Energy's recently released Record of Decision (ROD) for the Final Environmental Impact Statement (EIS) for the Proposed Relocation of Technical Area 18 (TA-18) Capabilities and Materials at the Los Alamos National Laboratory dated December 17, 2002. The NNSA has decided to relocate TA-18 Security Category I/II missions and related materials to the Device Assembly Facility (DAF) at the Nevada Test Site (NTS). This programmatic decision has necessitated changes in this project, which are reflected in this data sheet.

FY 2003 design funding ($6,164,000) for the TA-18 Mission Relocation subproject will be proposed for reallocation to support critical pre-design activities in support of the ROD as part of a reprogramming action after enactment of the FY 2003 appropriation.

Originally, this line item supported design of a prototype Purification Facility that would have been followed by a production facility. Upon subsequent development of the prototype project, it was determined that the prototype facility can be designed and constructed to meet both near-term LEP requirements and support projected longer-term weapons program needs thus eliminating the need for the large scale production facility. The name of the project has been changed to reflect the change in strategy by dropping "Prototype" from the title.

The design TEC has been increased by $3,010,000 as a result of the switch in strategy to a stand-alone project, and was accomplished by a reprogramming action that was completed in FY 2002.

1. Construction Schedule History

	Fiscal Quarter				Total Estimated Cost ($000)
	A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete	
FY 2001 Budget Request (*A-E and technical design only)*	1Q 2001	2Q 2002	N/A	N/A	14,500
FY 2002 Budget Request *(A-E and technical design only)*	1Q 2001	4Q 2003	N/A	N/A	110,665
FY 2001 Congressional Budget Supplemental *(A-E and technical design only)*	1Q 2001	4Q 2003	N/A	N/A	82,676
FY 2003 Budget Request *(A-E and technical design only)*	2Q 2001	2Q 2005	N/A	N/A	56,086
FY 2004 Budget Request *(A-E and technical design only)*	2Q 2001	4Q 2005	N/A	N/A	55,122

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
2001	22,133 [a] [b]	21,135	8,583
2002	19,389 [c]	12,963	14,608
2003	6,164 [d]	0 [d]	10,695 [d]
2004	1,600	9,000	6,212
2005	12,000	12,024	15,024

3. Project Description, Justification and Scope

This is the fourth year of a pilot project to provide for Architect-Engineering (A-E) services (Title I and Title II) for several National Nuclear Security Administration (NNSA) construction projects. This

[a] The FY 2001 Energy and Water Development appropriation for design and other non-design activities increased the requested appropriation from $14,500,000 to $35,500.000. This was reduced by $78,000 for a rescission enacted by Section 1403 of the FY 2001 Consolidated Appropriations Act.

[b] The FY 2001 Congressional Budget Supplemental transferred $13,289,000 of the FY 2001 appropriation to 01-D-108 ($9,500,000) and 01-D-107 ($3,789,000).

[c] Includes a reprogramming of $3,010,000 for the Purification Facility subproject.

[d] The FY 2003 funding of $6,164,000 will be proposed for reallocation as part of a reprogramming action after enactment of the FY 2003 appropriation. The obligations and costs reflected assume that this reallocation will occur. If the FY 2003 reprogramming is not realized, the outyear funding profile would need to be revised.

allows designated projects to proceed from conceptual design into preliminary design (Title I) and definitive design (Title II). The design effort will be sufficient to assure project feasibility, define the scope, provide detailed estimates of construction costs based on the approved design and working drawings and specifications, and provide construction schedules, including procurements. The designs will be extensive enough to establish performance baselines and to support construction or long-lead procurements in the fiscal year in which line item construction funding is requested and appropriated.

Conceptual design studies are prepared for each project using Operations and Maintenance funds prior to receiving design funding under a PED line item. These conceptual design studies define the scope of the project and produce a rough cost estimate and schedule. Currently they are completed 9-12 months before a Congressional budget is submitted requesting line item funding for a project. The effect of this process is that the conceptual design study is at least 24 months old by the time a line-item appropriation for the project is enacted. The use of a PED line item will enable a project to proceed immediately upon completion of the conceptual design into preliminary and final designs. It will permit acceleration of new facilities, provide savings in construction costs based on current rates of inflation, and permit more mature cost, schedule, and technical baselines for projects when the budget is submitted to Congress.

NNSA has made decisions as to which sub-projects should proceed to Title I design efforts to best support the Stockpile Stewardship mission; the amount of funding to be applied to each of these subprojects is reflected in this data sheet. The FY 2004 request provides funding to continue one subproject not fully funded in previous fiscal years. New NNSA design requests are included in a new FY 2004 PED line item, 04-D-103.

Following completion of Title I design activities, NNSA will determine preliminary Title I project baselines, providing detailed funding and schedule estimates for Title II and physical construction. NNSA will request external independent experts to assess the project scope, schedule and budget. Based upon the results of this assessment, and a review of the continuing programmatic requirement for the project, NNSA will either cancel further action on the subproject, or set final Title I performance baselines for the project and proceed to Title II activities. The Title I baseline will be the basis for the request to Congress for authorization and appropriations for physical construction, though some projects may require construction funding for long lead procurements prior to establishment of the performance baseline. Each project that proceeds to physical construction will be separated into an individual construction line item, the total estimated cost (TEC) of which will include the costs of the engineering and design activities funded through the PED line item.

A number of projects which began design in this line item have established performance baselines and have proceeded to construction, including the Microsystems and Engineering Sciences Applications (MESA) Complex, the Electrical Power Systems Safety, Communications and Bus Upgrades project, and the Atlas Relocation to the Nevada Test Site project. One project, the Sandia Underground Reactor Facility, was cancelled following design because the security cost savings envisioned in justification of the project were no longer valid due to a revised Design-Basis Threat and an increase in the estimated cost to construct the facility. Following are the NNSA subprojects funded within this PED line item. Design continues on several projects utilizing funding appropriated in prior years; funding is requested in FY 2004 only for the TA-18 Mission Relocation subproject. Changes may continue to occur due to continuing conceptual design studies or developments occurring after submission of this data sheet. Any changes that occur will be reflected in subsequent years.

FY 2001 Design Projects

01-01: Microsystems and Engineering Sciences Applications (MESA), SNL

Fiscal Quarter				Total Estimated Cost (Design Only ($000)	Performance Baseline Total Estimated Cost ($000)
A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
2Q 2001	1Q 2003	3Q 2003	3Q 2011	14,956 [a]	462,500

Fiscal Year	Appropriations	Obligations	Costs
2001	10,456	10,456	6,673
2002	4,500	4,500	7,426
2003	0	0	857

This subproject provides for preliminary and final design of the Microsystems and Engineering Sciences Applications (MESA) Complex at Sandia National Laboratories in Albuquerque, a proposed state-of-the-art national complex that will provide for the design, integration, prototyping and fabrication, and qualification of microsystems into weapon components, subsystems, and systems within the stockpile.

The design of the MESA Complex includes the following elements:

- Supporting infrastructure upgrades (systems upgrades and site utility upgrades);
- Retooling of equipment in Sandia's existing Microelectronics Development Lab (MDL);
- Construction of new facilities: Microsystems Fabrication (MicroFab) Microsystems Laboratory (MicroLab) and Weapons Integration Facility (WIF). MicroFab will provide cleanrooms that replace the Compound Semiconductor Research Lab (CSRL) and transition cleanroom space for prototyping new devices. MicroLab will be used to conduct research and development critical to the development of microsystems components as well as rapid prototyping and testing of these components. The WIF will include a classified portion (WIF-C) that will facilitate design, system integration, and the qualification of weapons systems, and an unclassified portion (WIF-U) that will enable collaboration and close proximity between partners from industry and academia and Sandia scientists and engineers, which will encourage and provide the environment necessary for process development and information transfer;
- New tooling for the MicroFab and MicroLab; and
- Integration of classified and unclassified supercomputing, visualization and ultra-high speed telecommunications resources to the MESA Complex.

This project received Critical Decision 2 on October 8, 2002, establishing the Performance Baseline, reflected above.

[a] Congress provided $20,000,000 in the FY 2001 appropriation for design and supporting infrastructure upgrades for MESA. The total TEC for design is $15,000,000. This was reduced by $44,000 for a rescission enacted by Section 1403 of the FY 2001 Consolidated Appropriations Act. Funding for the infrastructure upgrades originally appropriated here in FY 2001 was transferred to line item 01-D-108 as part of the FY 2001 Congressional Budget Supplemental.

01-02: Special Materials Complex, Y-12

The Special Materials Complex (SMC) subproject at Y-12 was originally planned as a single large project to provide for both critical near-term weapons refurbishments and long-term production capabilities, but has subsequently been divided into several smaller projects.

01-03: Electrical Power Systems Safety, Communications and Bus Upgrades, NTS

Fiscal Quarter				Total Estimated Cost (Design Only ($000)	Performance Baseline Total Estimated Cost ($000)
A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
2Q 2002	4Q 2003	3Q 2004	4Q 2005	2,693	16,531

Fiscal Year	Appropriations	Obligations	Costs
2001	0	0	0
2002	2,693	2,693	727
2003	0	0	1,754
2004	0	0	212

This subproject provides for preliminary and final design of the proposed Electrical Power Systems Safety, Communications and Bus Upgrades project. A safe, reliable power system at the Nevada Test Site (NTS) is a critical element of the science-based Stockpile Stewardship program. This project is necessary to support the increased demands for safety and reliability in the power system for sub-critical experiments and planned gas gun experiments, as well as emergency management, test readiness, other weapons experiments, work for other national security organizations, and other experimental programs. It is part of an ongoing, multi-year construction program needed to maintain the NTS in a state of readiness to support DOE's strategic objectives.

The Electrical Power Systems Safety, Communications and Bus Upgrades project will provide for a new Mercury Distribution Substation and the upgrade of Jackass Flats Substation and Mercury Switching Center. The substations and the switching center are located within the primary power transmission loop at the Nevada Test Site (NTS). The project will mitigate safety and environmental issues that now exist in the old Mercury Substation and take it off the radial feed from the Mercury Switching Center and place the new Mercury Distribution Substation on the 138 kilovolt (kV) loop. Previous line item projects that addressed the Mercury Substation, the oldest substation at the NTS, merely kept the substation operational. Building a new Mercury Distribution Substation has been determined to be the most cost effective means of alleviating the issues. A key element of this project will improve the connection between the NTS power system and Valley Electric Association transmission lines, one of two external power sources available to the test site, at the Jackass Flats Substation. Another key element of this project will include adding a transfer bus scheme at the Mercury Switching Center by reusing the existing radial feeder gas circuit breaker and associated bay which will become available when the new Mercury Distribution Substation is built. Mercury Switching Center serves as either the back-up or primary point of connection for commercial power at the NTS.

Construction funding is appropriated concurrent with this design funding, in line item 02-D-107 to support long-lead procurements that must be placed from 6 to 18 months in advance of the time they are needed for installation. In addition, the detailed specifications from the vendors for these items are

needed in order to complete the preliminary design. The long-lead procurements include transformers with load tap changers (12-18 months), gas circuit breakers (9-12 months), and 15kV metal-clad switchgear (6-9 months).

This project received Critical Decision 2 on November 1, 2002, establishing the Performance Baseline, reflected above.

01-04: Engineering Technology Complex Upgrade, LLNL

Fiscal Quarter				Total Estimated Cost (Design Only ($000)	Preliminary Full Total Estimated Cost Projection ($000)
A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
2Q 2002	3Q 2003	3Q 2002	1Q 2006	2,250	26,000-28,000

Fiscal Year	Appropriations	Obligations	Costs
2001	0	0	0
2002	2,250	2,250	984
2003	0	0	1,266

This subproject provides for preliminary and final design of the Engineering Technology Complex Upgrade (ETCU) project. The Building 321 Complex at Lawrence Livermore National Laboratory (LLNL) currently supports the weapons program by manufacturing parts for research programs important to the Stockpile Stewardship Program including the National Ignition Facility (NIF), Lasers, Computations, and the Weapons Program. Services of programmatic importance include diamond turning of small classified targets; dimensional inspection of a variety of parts with tolerances measured in the millionths of an inch; and characterization of various unique weapons materials.

The Building 321 Complex was constructed in 1956 to provide fabrication services to research programs at LLNL. Existing equipment and facilities will not adequately meet anticipated program requirements. This project will address the issue of technological obsolescence, as well as correcting a number of code compliance issues including accessibility and gender-based standards and current stringent environmental, safety and health (ES&H) requirements. The project will provide for improved and cost effective operations by consolidating and reorganizing laboratories and shops and maintaining all of the programmatic functions in a contiguous complex.

Construction funding is appropriated for this project concurrent with this design funding in 02-D-105 in order to support long lead procurements needed to optimize the construction schedule and meet the milestone dates.

01-05: Stockpile Quality Evaluation and Surveillance Upgrades, Y-12 Plant

This project has been deferred.

01-06: Atlas Relocation to the Nevada Test Site, NTS

Fiscal Quarter				Total Estimated Cost (Design Only ($000)	Performance Baseline Total Estimated Cost ($000)
A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
2Q 2001	1Q 2002	1Q 2002	3Q 2003	1,200	16,312

Fiscal Year	Appropriations	Obligations	Costs
2001	1,200	1,200 [a]	1,146
2002	0	0	40
2003	0	0	14

This subproject supported the design efforts of a joint team of Los Alamos National Laboratory (LANL), Bechtel Nevada (BN), personnel from other laboratories, and NNSA Nevada Operations Office staff in the development and implementation of the plan to relocate Atlas to the Nevada Test Site (NTS). The design has been completed and the project is proceeding with construction under line item 01-D-107.

01-07: TA-18 Mission Relocation, LANL

Fiscal Quarter				Total Estimated Cost (Design Only ($000)	Preliminary Full Total Estimated Cost Projection ($000)
A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
1Q 2004	4Q 2005	4Q 2004	2Q 2008	21,024	111,000

Fiscal Year	Appropriations	Obligations	Costs
2001	998 [b]	0	0
2002	6,426	0	0
2003	6,164 [c]	0 [c]	0 [c]
2004	1,600	9,000	6,000
2005	12,000	12,024	15,024

This subproject provides for preliminary and final design associated with the Los Alamos National Laboratory Technical Area (TA)-18 Mission Relocation Project (MRP), the goal of which is to provide a secure, modern location for conducting general-purpose nuclear materials handling activities currently conducted at Los Alamos National Laboratory (LANL) TA-18. TA-18 is the sole remaining facility in

[a] Original appropriation was $5,000,000. This was reduced by $11,000 for a rescission enacted by Section 1403 of the FY 2001 Consolidated Appropriations Act, and a total of $3,789,000 in construction funding was transferred to line item 01-D-107 as part of the FY 2001 Congressional Budget Supplemental.

[b] Original appropriation was $1,000,000. This was reduced by $2,000 for a rescission enacted by Section 1403 of the FY 2001 Consolidated Appropriations Act.

[c] The FY 2003 funding of $6,164,000 will be proposed for reallocation as part of a reprogramming action after enactment of the FY 2003 appropriation. The TEC, obligations and costs reflected assume that this reallocation will occur. If the FY 2003 reprogramming is not realized, the outyear funding profile would need to be revised.

the United States capable of performing general-purpose nuclear materials handling experiments and conducting training essential to support national security missions including: research and development of technologies in support of Homeland Defense and counter-terrorism initiatives; the continued safe and efficient handling and processing of fissile materials; the development of technologies vital to implementing arms control and nonproliferation agreements; the development of emergency response technologies to respond to terrorist attacks, etc.; training for criticality safety professionals, fissile materials handlers, emergency responders, International Atomic Energy Agency professionals, and other Federal and State organizations charged with Homeland Defense responsibilities. The need for this project is based on the projected large capital investment for security and infrastructure upgrades required over the next 10 years to remain at TA-18. NNSA recently completed environmental reviews and technical and cost studies to evaluate siting options for the TA-18 missions, and designated that the preferred alternative is to relocate a portion of the TA-18 missions (those requiring Security Category I/II special nuclear material) to the Device Assembly Facility (DAF) at the Nevada Test Site with the remaining missions (those requiring Security Category III/IV special nuclear material) residing at LANL. The previous preferred alternative was construction of a new facility at LANL. Given the recent change in direction, additional conceptual design activities are required to develop detailed project scope, schedules, and budget; however, it is anticipated that this project will include capabilities to house and operate critical assemblies, store associated special nuclear material, and provide infrastructure to support criticality training and detection development activities.

Construction funding is requested in line item 04-D-128 concurrent to design funding for this project in order to expedite this vitally important NNSA project and allow the fexibility to initiate long lead procurements and necessary modifications to the DAF facility.

01-08: Sandia Underground Reactor Facility (SURF), SNL

Fiscal Quarter				Total Estimated Cost (Design Only ($000)	Preliminary Full Total Estimated Cost Projection ($000)
A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
3Q 2001	4Q 2002	cancelled	cancelled	3,206 [a]	cancelled

Fiscal Year	Appropriations	Obligations	Costs
2001	2,696	2,696	764
2002	510	510	2,351
2003	0	0	91

This subproject provided for preliminary and final design of the proposed Sandia Underground Reactor Facility (SURF). The objective of the Sandia Underground Reactor Facility (SURF) project was to provide a modern, secure, underground facility to house the existing Sandia Pulse Reactor (SPR) at significantly less annual security costs than are being incurred today. This project was cancelled by NNSA in October 2003 because the security cost savings envisioned in justification of the project were

[a] Original amount allocated to this subproject was reduced by $4,000 for a rescission enacted by Section 1403 of the FY 2001 Consolidated Appropriations Act.

no longer valid due to the recently completed draft Design-Basis Threat. Coupled with an increase in the estimated cost to construct the facility since establishment of the performance baseline, the payback period for capturing the initial investment increased to the point that the programmatic benefit anticipated for the project was significantly reduced.

01-09: Purification Facility, Y-12

Fiscal Quarter				Total Estimated Cost (Design Only ($000)	Preliminary Full Total Estimated Cost Projection ($000)
A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
2Q 2002	3Q 2003	3Q 2003	4Q 2004	9,793 [a]	35,000 - 40,000

Fiscal Year	Appropriations	Obligations	Costs
2001	6,783	6,783	0
2002	3,010 [b]	3,010	3,080
2003	0	0	6,713

This subproject provides for preliminary and final design of the proposed Purification Facility at the Y-12 Plant, and is one of the individual subprojects that replaces the Special Materials Complex subproject at Y-12.

Currently, only a small, development-scale purification facility and capability exist at Y-12. The previous full-scale purification production facility was shut down in the late 1980s. Given the length of time that has passed since the initial startup of this facility and its operation, there is a need to re-establish and define the operating parameters and controls and process prove-in requirements for this production process, in advance of the completion of the construction of a production facility.

The original plan was to build a prototype facility that would simulate production-scale operations and allow near-term Life Extension Program (LEP) requirements to be met. The prototype facility would have been followed by a production facility which would have provided full-scale, long-term purification production process capability. Upon subsequent development of the prototype project, it has been determined that the prototype facility can be designed and constructed to meet both near-term LEP requirements and support projected longer-term weapons program needs thus eliminating the need for the large scale production facility which was estimated to cost up to $80,000,000. The name of this subproject has been revised to the Purification Facility to reflect the change in strategy to a stand-alone project.

Operations performed within the Purification Facility will include 1) dissolution, filtration, and recrystallization: and, 2) powder processing in a nitrogen atmosphere.

Line item 03-D-122 includes construction funding for this project.

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[a] Original amount allocated to this subproject was reduced by $17,000 for a rescission enacted by Section 1403 of the FY 2001 Consolidated Appropriations Act.

[b] $3,010,000 was reprogrammed to this subproject in FY 2002 to support the increased design TEC.

4. Details of Cost Estimate [a]

(dollars in thousands)

	Current Estimate	Previous Estimate
Design Phase		
Preliminary and Final Design Costs (Design Drawings and Specifications)	42,722	43,505
Design Management Costs (8.7% of TEC)	4,800	4,880
Project Management Costs (13.7% of TEC)	7,600	7,701
Design Phase Contingency (current estimates include contingency based on risk analysis)	0	0
Total Design Costs (100% of TEC)	55,122	56,086
Total, Line Item Costs (TEC)	55,122	56,086

5. Method of Performance

Design services will be obtained through competitive and/or negotiated contracts. M&O contractor staff may be utilized in areas involving security, production, proliferation, etc. concerns.

6. Schedule of Project Funding [b]

(dollars in thousands)

	Prior Years	FY 2002	FY 2003	FY 2004	Outyears	Total
Project Cost						
Facility Costs						
Design	8,583	14,608	10,695	6,212	15,024	55,122
Total, Line item TEC	8,583	14,608	10,695	6,212	15,024	55,122
Total Facility Costs (Federal and Non-Federal)	8,583	14,608	10,695	6,212	15,024	55,122
Other Project Costs						
Conceptual design costs	8,830	30	0	0	0	8,860
Other project-related costs	12,460	4,280	620	100	100	17,560
Total, Other Project Costs	21,290	4,310	620	100	100	26,420
Total Project Cost (TPC)	29,873	18,918	11,315	6,312	15,124	81,542

[a] This cost estimate is based upon direct field inspection and historical cost estimate data, coupled with parametric cost data and completed conceptual studies and designs, when available.

[b] Costs in this schedule assume that the proposed reallocation of $6,164,000 out of this project will occur.

01-D-124, Highly Enriched Uranium Materials Facility

Y-12 National Security Complex, Oak Ridge, Tennessee

(Changes from FY 2003 Congressional Budget Request are denoted with a vertical line [|] in the left margin.)

Significant Changes

| # The National Nuclear Security Administration (NNSA) has recently completed a thorough evaluation of this project to address revision of programmatic and security requirements, and the establishment of a new Management and Operating Contractor (BWXT Y-12) at the Y-12 National Security Complex. The original concept for this project included an earthen berm on the top and three sides of the facility to address security concerns. After consideration of revised security threat guidance, the project design concept changed to one that provides multiple barriers to potential adversaries. As a result, the earthen berm on top of the facility has been eliminated, and the roof design has been changed to provide security forces with significantly more flexibility to address security threats. In addition, the project design now includes additional storage racks and pallets to support long term operation of the facility. The "Surge" area and International Atomic Energy Agency (IAEA) capability were eliminated and the storage capacity was reduced in order to lower total project costs. The project design and construction schedule has been revised to reflect implementation of these changes, and current escalation and overhead rates have been applied. The net result of these changes is that the project Total Estimated Cost has increased from $119,949,000 to $184,000,000, and the Total Project Cost has increased from $143,949,000 to $222,500,000. Based on this estimate, an anticipated HEUMF total project cost range of $207,000,000 to $268,000,000 was established. Start of operations is now scheduled for 1Q FY2008.

| # NNSA has implemented significant changes to the way it conducts Project Management since this project was authorized. These project management changes were implemented in part to address Congressional concern over the project management performance of the Department of Energy (DOE). DOE Order 413.3 was issued in FY2001 to institutionalize these changes, which included increased Independent Project Reviews and establishment of performance measurement baselines for projects after Preliminary Design (nominally 30% design) was completed. This project is being transitioned to conform to Order 413.3, thus the cost and schedule baselines presented in this data sheet should be considered preliminary. They will be finalized and established as performance measurement baselines following Preliminary Design.

1. Construction Schedule History

	Fiscal Quarter				Total Estimated Cost ($000)	Total Project Cost ($000)
	A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
FY 2001 Budget Request *(Preliminary Estimate)*	1Q 2001	1Q 2002	2Q 2001	2Q 2005	120,000	144,000
FY 2002 Budget Request	3Q 2001	4Q 2002	4Q 2001	2Q 2005	119,949[a]	143,949
FY 2003 Budget Request	3Q 2001	4Q 2003	2Q 2002	4Q 2006	119,949	143,949
FY 2004 Budget Request (Current Estimate)[b]	3Q 2002	4Q 2003	3Q 2002	3Q 2006	184,000	222,500

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
2001	17,710[c d]	17,710	0
2002	0	0	1,242
2003	25,000	25,000	20,880
2004	45,000	45,000	34,600
2005	64,000	64,000	76,480
2006	32,290	32,290	37,710
2007	0	0	13,088

[a] Original appropriation was $120,000,000. This was reduced by $51,000 for Safeguards and Security (S&S) Amendment in 2001

[b] This information is considered preliminary. Final performance measurement baselines will be established following completion of Preliminary Design in accordance with DOE Order 413.3 requirements.

[c] The original 2001 appropriation request was $17,800,000. This was reduced by $51,000 by the Safeguards and Security (S&S) Amendment, and the amount appropriated in FY 2001 was $17,749,000.

[d] The revised 2001 appropriate request of $17,749,000 was reduced by $39,000 to $17,710,000 for a rescission enacted by Section 1403
of the FY 2001 Consolidated Appropriations Act.

3. Project Description, Justification and Scope

| The Highly Enriched Uranium (HEU) Materials Facility will support the consolidation of long-term highly enriched uranium materials into a state-of-the-art facility. The new facility will result in cost savings and an increased security posture and will feature: storage in a hardened concrete structure for enhanced security, new Safe Secure Trailer (SST) or Safeguard Transport (SGT) shipping/receiving station, a central location near HEU processing facilities, that includes a small administrative area to house the building operators. This facility will be located in a Protected Area. The Program Requirements Document for the Y-12 National Security Complex HEU Materials Facility, DOE/ORO-2113 Rev.1, documents the minimum storage requirements of 24,000 containers.

The Y-12 National Security Complex Environmental, Safety, and Health (ES&H) Vulnerability Assessment, dated October 1996, resulted in a number of findings related to the current storage of HEU in multiple buildings. The assessment raised issues concerning fire, flooding, natural phenomena, and related concerns which would likely involve major upgrades to existing facilities in order to continue present HEU storage. In addition to ES&H vulnerabilities, existing conditions are inefficient. Maintaining and expanding HEU storage in multiple facilities involves increased security personnel, increased operations personnel, increased maintenance and utility costs, increased Special Nuclear Material (SNM) vehicle transfers, increased cost for ES&H, facility safety assessments and upgrades, and management oversight. Costs for HEU storage will be reduced by implementing this initiative. Cost savings are achieved by reduced personnel requirements, by the efficient use of space and technology, by reduction of the footprint, and by eliminating the necessity for creating additional storage in the old facilities.

This project will provide the following:

- receipt and storage for Canned Sub-Assemblies (CSAs) as well as cans of uranium oxide and metal
- docks for SST/SGT shipping/receiving
- a small administrative area inside the facility

The life expectancy of the facilities is 50 years, thereby assuring a viable, long-term HEU storage capability to support the enduring weapons stockpile and strategic reserve for the foreseeable future.

The facilities will be designed to meet Conduct of Operations requirements, minimize the number of personnel required for operations, and meet DOE requirements for SNM accountability and control.

| FY 2004 funding will be utilized to perform site preparation and facility construction activities.

Project Milestones:

FY 2002:	A-E Work Initiated	3Q	
	Physical Construction Started	3Q	
FY 2003:	A-E Work Completed	4Q	
FY 2004:	Facility Construction Started		2Q
FY 2006:	Physical Construction Completed	3Q	
FY 2007:	Startup testing	2Q	
	Operational Readiness Review Completed	2Q	
FY 2008:	Project Closeout and Begin Operations	1Q	

4. Details of Cost Estimate

(dollars in thousands)

	Current Estimate	Previous Estimate[a]
Design Phase		
Preliminary and Final Design costs (Design Drawings and Specifications)	17,610	7,470
Design Management Costs (0.6% of TEC)	1,095	853
Project Management Costs (2.0% of TEC)	3,778	1,098
Total, Design Costs (12.2% of TEC)	22,483	9,421
Construction Phase		
Other Structures	102,688	72,350
Other Program Activities [b]	9,222	
Construction Management (5.6% of TEC)	10,329	10,090
Project Management (4.7% of TEC)	8,616	6,220
Total, Construction Costs (71.1% of TEC)	130,855	88,660
Contingencies		
Design Phase (2.4% of TEC)	4,497	2,070
Construction Phase (14.2% of TEC)	26,165	19,798
Total, Contingencies (16.7% of TEC)	30,662	21,868
Total, Line Item Costs (TEC) [c]	184,000	119,949

5. Method of Performance

Overall project direction and responsibility for this project resides with the NNSA. NNSA has assigned day-to-day management of project activities to the Y-12 Operating Contractor, BWXT Y-12. BWXT Y-12 has completed Conceptual Design of this project utilizing site forces. BWXT Y-12 will perform initial site preparation. Preliminary and detail design for this project will be performed by an architectural engineering firm under subcontract to BWXT Y-12. After completion of design, construction and initial component and system testing will be performed via a fixed price construction subcontract to BWXT Y-12. Specialty systems and equipment will be designed and procured by BWXT Y-12 and provided for installation by the construction subcontractor. Final connection of the facility to existing plant security and support systems will be performed by BWXT Y-12. Following construction, integrated system testing and startup testing of the facility will be performed by BWXT Y-12. NNSA will provide oversight and review of the entire project process, and will perform an Operational

a As submitted with FY2003 Congressional Budget

b Includes FSAR, CAAS Programming, UCNI Security, Project Documentation

c The annual escalation rates assumed are based on forward pricing rates for BWXT labor and approved DOE annual escalation rates for other costs.

Readiness Review at the completion of the project prior to authorization of the facility to begin operations.

6. Schedule of Project Funding

(dollars in thousands)

	Prior Years	FY 2002	FY 2003	FY2004	Outyears	Total
Project Cost						
Facility Cost						
Design	0	1,242	17,970	0	0	19,212
Construction	0	0	2,910	34,600	127,278	164,788
Total, Line item TEC	0	1,242	20,880	34,600	127,278	184,000
Total, Facility Costs	0	1,242	20,880	34,600	127,278	184,000
Other Project Costs						
Conceptual design cost [a]	1,925	0	0	0	0	1,925
Other project-related costs [b]	11,135	6,798	2,006	1,304	15,332	36,575
Total, Other Project Costs	13,060	6,798	2,006	1,304	15,332	38,500
Total, Project Costs (TPC)	13,060	8,040	22,886	35,904	142,610	222,500

[a] A Conceptual Design Report (CDR) was completed in FY1999 at an estimated cost of $1,160,000. An Addendum to the CDR was completed in FY2001 for an additional cost of $765,000.

[b] Other project-related prior year costs include $7,010,000 in FY2000 and $4,125,000 in FY2001. Major FY2001 costs included selection of AE subcontractor and RFP preparation, storage system development criticality safety evaluations and preparations of technical safety basis documentation. These tasks accounted for $3,233,000. Additional tasks included preparation of the PPEP, design criteria, acquisition plans in support of issuing CD-1. Site characterizations, operations support, project management, other project support personnel and other miscellaneous costs was performed for $892,000.

Major tasks planned for FY2002 include preparing a waste management plan, final project execution plan, final project execution plan draft transition plan, and finalizing plans for CD-1 for $199,000. Support for award of AE subcontract for $568,000. Site planning and investigations for $820,000. Storage system development for $1,213,000. Project management and project support for $1,160,000. Independent project assessments for $180,000. ORR support for $17,000 DNFSB support for $52,000. Process descriptions for $73,000. Criticality safety evaluations and CAAS analysis for $360,000. Preliminary safety analysis report for $1,462,000. Vulnerability analysis for $42,000, and a Hazardous Materials Evaluation for $34,000. Contingency of $618,000.

Major tasks planned for FY2003 include updating the project execution plan for $20,000. Project support for $298,000. Independent project assessments for $176,000. ORR support for $18,000, DNFSB support for $54,000. Criticality safety evaluation, CAAS analysis, and other activities for $1,254,000. Contingency of $186,000.

Out year activities will include preparation of the final transition plan, project management and project support, independent project assessments, ORR support and an ORR, DNFSB support, criticality safety evaluations and CAAS analysis, training, procedures and user acceptance test.

Cost for moving material into the new facility is not included.

7. Related Annual Funding Requirements [a]

(FY 2008 dollars in thousands)

	Current Estimate	Previous Estimate
Annual facility operating costs[b]	1,050	60
Facility maintenance and repair costs[c]	1,650	2,000
Programmatic operating expenses directly related to the facility[d]	5,900	7,600
Other costs [e]	400	350
Security Forces [f]	0	0
Total related annual funding (operating from FY 2008 through FY 2057)	9,000	10,010

[a] These costs are from the cost/benefit analysis for the defense-in depth design concept.

[b] Operating costs are the costs of managing the facility. Part of these cost were included in programatic operating expense in previous estimate.

[c] Facility utility costs are combined with the facility maintenance and repair costs.

[d] These are the costs for receipt, storage, and inventory of the contents.

[e] Other costs include the ES&H costs for keeping the facility compliant.

[f] Security forces are funded as a part of the overall site security budget. However, the defense-in-depth facility concept will require more guards than assumed for the berm facility concept. Security force expense for new facility are estimated to be $2.2 million less per year than current HEU Storage Security related costs.

01-D-126, Weapons Evaluation Test Laboratory (WETL), Sandia National Laboratories

(Changes from FY 2003 Congressional Budget Request are denoted with a vertical line [|] in the left margin.)

Significant Changes

The Performance Baseline for this project was established on December 2, 2002, and is reflected in this data sheet.

1. Construction Schedule History

	Fiscal Quarter					
	A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete	Total Estimated Cost ($000)	Total Project Cost ($000)
FY 2001 Budget Request *(Preliminary Estimate)*	2Q 2001	2Q 2002	3Q 2002	1Q 2004	22,181	23, 483
FY 2002 Budget Request	2Q 2001	2Q 2002	3Q 2002	1Q 2004	22,181	23, 483
FY 2003 Budget Request	3Q 2001	4Q 2002	1Q 2003	2Q 2004	22,181	23, 483
FY 2004 Budget Request *(Performance Baseline)*	3Q 2001	4Q 2002	2Q 2003	3Q 2004	22,181	23, 483

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
2001	2,993 [a]	2,993	286
2002	7,700	7,700	1,679
2003	8,650	8,650	6,656
2004	2,838	2,838	9,717
2005	0	0	3,843 [b]

[a] Original appropriation was $3,000,000. This was reduced by $7,000 for a rescission enacted by Section 1403 of the FY 2001 Consolidated Appropriations Act. There is no change to the TEC due to a corresponding increase to the FY 2004 appropriation amount.

[b] Physical construction of the building is scheduled to be completed in 3Q2004. The equipment relocation and installation is scheduled to be completed in 1Q2005. Therefore the planned costing amount in FY 2005 is to pay for the planned equipment relocation and installation into the building of this line item.

3. Project Description, Justification and Scope

The Weapons Evaluation Testing Laboratory (WETL) facility is currently located at the Department of Energy Pantex Plant in Amarillo, Texas, and has been in operation since 1965. This project will construct a new facility at the Pantex site; relocate some of the existing equipment, augmented with state-of-the-art upgraded high resolution test data acquisition hardware and software systems, from the existing WETL into the new facility; continue existing functions and operations of the WETL in the new facility indefinitely into the future, and remediate any legacy contamination in the existing facility. The existing facility will be retained for other Pantex operations.

The WETL will be relocated from a Material Access Area (MAA) to a Limited Area (LA) zone on the Pantex site. Removal of WETL from the MAA will result in reduction of man-hours necessary to process or move material between WETL and other Pantex facilities. There will be operational cost savings on any material that comes to WETL from outside sources due to decreased security requirements. By locating WETL outside the MAA, guard inspections, security requirements, and radiation safety requirements for outside shipments will be reduced. In addition to providing the operational cost savings from the safeguards and security and radiation safety operations, the new facility will provide cost savings from the workflow improvements, automated data collection and analysis, and material handling procedures.

The new WETL consists of an approximately 31,400-gross-square-foot facility, providing offices and office support, lab/test and test support spaces, and storage space. It is designed architecturally to enhance functional operations and flexibility and provide a more suitable work environment. The proposed site, which is located next to a LA, will be fenced for inclusion into the existing LA at the completion of construction.

The new facility will enhance efficiency in performing existing work functions. No operational changes will be expected to result from the transfer of functions from the old to new facility. New diagnostic equipment to perform special investigations at the materials/component level will be acquired. This provides a new capability that will be a significant enhancement to the stockpile evaluation program.

The new facility will provide a laboratory environment capable of supporting the Enhanced Surveillance Campaign (ESC) through flexibility of floor space configuration, appropriate adjacencies for an optimal work environment, and the mechanical and data infrastructure to be dependable and efficient in supporting advanced test technologies.

Each year the Stockpile Evaluation Program draws weapons from the stockpile. These are disassembled and inspected in other Pantex facilities. Some non-nuclear parts and components from these weapon samples are built into system beds and tested at environmental extremes at WETL. Approximately 65 principal tests and hundreds of subsequent tests are conducted each year. If problems are detected or failures occur, a team is formed to evaluate the cause of the anomaly, assess its impact (on stockpile reliability), and recommend a solution. This testing is conducted and the necessary data acquired with special test equipment that is housed in the WETL.

The inefficient layout of the current facility does not support optimal workflow, and the facility also has a number of issues that require immediate attention, including roof leaks and an aging mechanical system. An improved WETL is needed to modernize the facility to integrate ESC initiatives, decrease operational expenses, upgrade old and outdated equipment, and mitigate risk of loss (these needs are discussed in more detail in the following sections).

Support to the Enhanced Surveillance Campaign (ESC)

ESC is an initiative to develop advanced capabilities for understanding degradation mechanisms in the enduring stockpile. The campaign has invested tens of millions of dollars in research and development of methodologies to observe and analyze changes in stockpile material prior to aging failure.

The modernized Systems Test Equipment is outside the scope of the construction project. It will be funded by the Enhanced Surveillance Campaign. There is no linkage between the new WETL facility and the modernized Systems Test Equipment, although both are needed to meet 21st century SEP requirements. The existing testers will continue to be used either in the new facility or in the existing facility until replacement testers are designed and fabricated. New testers will be deployed into whatever facility is in use as they become available.

Decreased Operational Expense

The WETL facility is currently located within the MAA at the Pantex plant, but for security reasons is only required to be located in a LA. The Complex 21 Study completed in May 1993 recommended that WETL should be relocated outside the MAA.

The MAA is the most secure area on the site, designed to protect access to special nuclear material. Because of WETL's location within the MAA, all staff and visitors are subject to security and personnel assurance program (PAP) requirements. This program actively monitors and periodically re-certifies personnel as suitable to perform nuclear explosive duties in a safe and reliable manner and involves medical and psychological evaluation. The security and PAP requirements for WETL personnel and visitors add operational expense that will be avoided if WETL is relocated to a LA. Additionally, there will be operational cost savings on any material that comes to WETL from outside sources due to decreased security requirements. Incoming and outgoing shipments of support material are now received in an area outside the MAA due to security requirements of the MAA. All shipments are inspected prior to movement to WETL, and all shipments require movement through many guard stations. Outgoing shipments require green tags from radiation safety, as does the calibration equipment discussed above. Locating WETL outside the MAA will reduce guard inspections, security requirements and radiation safety requirements. In addition, the project will provide funding for the acquisition of diagnostic equipment. New building systems will be designed to meet Federal guidelines for energy efficiency, which will also reduce operating costs.

Scope:

Plan and design the project.

Construct a new facility, approximately 30,000 gsf, which includes test support spaces, below grade centrifuge rooms and laboratories, storage space, offices and support space, conference and video conference space, and mechanical and electrical systems.

Provide site work including curbs and gutters, walkways, parking lot, minor paving, and landscaping.

Extend site utilities to serve WETL.

Provide new diagnostic equipment.

Provide standard equipment, including new furniture and video conferencing equipment.

The FY 2003 funds will be used to initiate physical construction.

Project Milestones:

FY 2001:	Start Design	3Q
FY 2002:	Complete Preliminary Design	3Q
	Complete Design	4Q
FY 2003:	CD3	2Q
	Construction Start	2Q
FY 2004:	Construction Complete	3Q
FY 2005:	Fit Up/Move In Complete	1Q
	CD4	3Q
	Project Closeout	4Q

4. Details of Cost Estimate

(dollars in thousands)

	Current Estimate	Previous Estimate
Design Phase		
Preliminary and Final Design costs (Design, Drawings and Specifications $629)	1,354	1,343
Design Management Costs (1.7% of TEC)	342	359
Project Management Costs (0.7% of TEC)	146	100
Total, Design Costs (8.9% of TEC)	1,842	1,802
Construction Phase		
Procurement	99	98
Improvements to Land	231	485
Buildings	8,855	7,288
Special Equipment	2,858	3,570
Utilities	345	1,006
Standard Equipment	544	306
Equipment Relocation	779	684
Inspection, Design and Project Liaison, Testing, Checkout and Acceptance	1,026	2,787
Construction Management (2.4% of TEC)	497	720
Project Management (4.7% of TEC)	970	779
Total, Construction Costs (78.7% of TEC)	16,204	17,723
Contingencies		
Design Phase (0.5% of TEC)	107	107
Construction Phase (18.1 of TEC)	4,028	2,549
Total, Contingencies (18.6% of TEC)	4,135	2,656
Total, Line Item Costs (TEC) [a]	22,181	22,181

5. Method of Performance

Architectural and engineering design will be performed under a negotiated fixed-price contract based on capability and capacity to perform the work. Inspection will be performed by Sandia Facilities Department. Construction will be performed under a competitive-bid fixed-price contract based on best value. BWXT Pantex will provide consultation as needed.

[a] Escalation rates taken from the FY 2001 DOE escalation multiplier tables.

6. Schedule of Project Funding

(dollars in thousands)

	Prior Years	FY 2002	FY 2003	FY 2004	Outyears	Total
Project Cost						
Facility Cost						
Design	286	1,620	43	0	0	1,949
Construction	0	59	6,613	9,717	3,843	20,232
Total, Line item TEC	286	1,679	6,656	9,717	3,843	22,181
Total Facility Costs (Federal and Non-Federal)	286	1,679	6,656	9,717	3,843	22,181
Other Project Costs						
Conceptual design cost [a]	458	0	0	0	0	458
Other project-related costs [b]	512	71	87	87	87	844
Total, Other Project Costs	970	71	87	87	90	1,302
Total, Project Costs (TPC)	1,256	1,750	6,743	9,804	2,335	23,483

7. Related Annual Funding Requirements

(FY 2004 dollars in thousands)

	Current Estimate	Previous Estimate
Annual facility operating costs [c]	194	194
Annual facility maintenance/repair costs [d]	118	118
Programmatic operating expenses directly related to the facility [e]	7,343	7,343
Utility costs	23	23
Total related annual funding (operating from FY 2005 through FY 2045)	7,678	7,678

[a] Includes NEPA documentation costs.

[b] Including tasks such as Project Execution Plan, Pre-Title I Development, Design Criteria, Safeguards and Security Analysis, Architect/Engineer Selection, Value Engineering Study, Independent Cost Estimate, Energy Conservation Report, Fire Hazards Assessment, Site Surveys, Soils Reports, Permits, Administrative Support, Operations and Maintenance Support, ES&H Monitoring, Operations Testing, Energy Management Control System Support, Readiness Assessment.

[c] When the facility is operational in the 2nd Quarter of FY 2005, the average cost will be $265,000 for labor and materials per year.

[d] A total of 1.0 staff years per year is required to maintain the facility.

[e] Annual programmatic operating expenses are estimated at $7.4M, based on representative current WETL operating expenses and the System Test Equipment (STE) labor. The majority of this funding is expected to come from DOE/DP for activities in support of the Nuclear Weapons Stockpile Stewardship Program. If a new WETL is constructed, funds will be provided to acquire modern test equipment, which reduces the number of testers required, thus reducing the current labor costs to the representative amount. This labor savings, estimated over a 40-year life cycle, returns the initial investment by a factor of 7.

99-D-104, Protection of Real Property (Roof Reconstruction-Phase II) , Lawrence Livermore National Laboratory, Livermore, California

(Changes from FY 2003 Congressional Budget Request are denoted with a vertical line [|] in the left margin.)

Significant Changes

None.

1. Construction Schedule History

	Fiscal Quarter				Total Estimated Cost ($000)	Total Project Cost ($000)
	A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
FY 1999 Budget Request (*Preliminary Estimate*)	1Q 1999	1Q 2000	3Q 1999	4Q 2001	19,900	19,930
FY 2000 Budget Request	3Q 1999	2Q 2003	4Q 1999	4Q 2003	19,900	19,970
FY 2001 Budget Request	4Q 1999	2Q 2003	4Q 1999	4Q 2003	19,900	19,970
FY 2002 Budget Request	4Q 1999	2Q 2003 [a]	4Q 1999 [a]	4Q 2003	19,886 [b]	19,956
FY 2003 Budget Request	4Q 1999	2Q 2003 [a]	4Q 1999 [a]	4Q 2004	19,886	19,956
FY 2004 Budget Request (*Performance Baseline)*	4Q 1999	2Q 2004 [a]	4Q 1999 [a]	1Q 2005	19,886	19,956

[a] Design and construction is planned as five separate packages, each including 1 to 4 buildings. Construction on each package will begin upon completion of the design for that package, while design continues on the remaining packages.

[b] Appropriation of $2,800,000 was reduced by $14,000 by the Safeguards and Security (S&S) amendment.

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
1999	2,500	2,500	419
2000	2,391 [a]	2,391	2,090
2001	2,780 [b] [c]	2,780	3,474
2002	2,800	2,800	3,490
2003	5,915	5,915	5,406
2004	3,500	3,500	4,207
2005	0	0	800

3. Project Description, Justification and Scope

This project is the second of three phases of the LLNL roof replacement program. The first Phase is funded under 96-D-102. Phase II addresses 11 Weapons Stockpile Stewardship Program buildings which require complete roofing system replacement along with the replacement of associated roof mounted equipment and piping systems which have deteriorated beyond economical repair. This is required in order to maintain and protect the integrity of the facilities and to assure that programmatic work can proceed without the risk of serious damage to the buildings or the programmatic efforts contained within. Work includes buildings: B111, B113, B121, B141, B194, B231, B241, B251, B281, B321, and B332. In all cases, the roofing systems have exceeded their 20-year design life by 11 to 23 years. The same holds true for most of the roof mounted equipment and piping systems as they are original equipment, again with an average design life of 20 years. Both the roofing and mechanical systems have deteriorated to the point where normal repair is no longer a viable alternative.

The 11 roofs in this project are experiencing severe deterioration problems including membrane failure, and the associated roof mounted mechanical equipment is also showing high levels of unreliable operation which adversely effect the support to the programmatic effort. As stated, normal maintenance procedures no longer are effective to maintain weather integrity of the roofing systems, to the point that leaks in the roofing system are jeopardizing experiments, experimental data and equipment. The impact from not replacing the roofing and mechanical equipment systems will result in excessive maintenance and repair costs. In addition, the adverse programmatic impact could cost the Lab and Defense Programs significant dollars in lost production.

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[a] Original appropriation was $2,400,000. This was reduced by $9,000 for the FY 2000 rescission enacted by P.L. 106-113.

[b] Appropriation of $2,800,000 was reduced by $14,000 by the Safeguards and Security (S&S) amendment.

[c] Original appropriation was $2,786,000. This was reduced by $6,000 for a rescission enacted by Section 1403 of the FY 2001 Consolidated Appropriation Act. There is no change to the TEC due to a corresponding increase to the FY 2003 appropriation amount.

Operating expense budgets fund maintenance at a level of required repair, but not at the level required to replace roofs and roof mounted mechanical equipment. Since these 11 buildings are required to support critical Weapons Stockpile Stewardship Program missions, capital funding is requested for the replacement of the roofs and associated roof mounted mechanical equipment.

Project Milestones:

FY 2003:	Package No. 5 (Buildings 113 and 231)		
		Start Design	1Q
		Complete Design	2Q
		Start Construction	3Q
		Complete Construction	4Q
FY 2004:	Package No. 6 (Building 321)		
		Start Design	1Q
		Complete Design	2Q
		Start Construction	3Q
FY 2005:		Complete Construction	1Q

4. Details of Cost Estimate

(dollars in thousands)

	Current Estimate	Previous Estimate
Design Phase		
Preliminary and Final Design costs (Design Drawings and Specifications - $640)	929	947
Design Management Costs (0.2% of TEC)	30	29
Project Management Costs 0.3% of TEC)	50	50
Total Design Costs (5.2% of TEC)	1,009	1,026
Construction Phase		
Other Structures	10,343	9,018
Standard Equipment	3,900	3,672
Inspection, Design and Project Liaison, Testing, Checkout and Acceptance	1,295	2,160
Construction Management (2.2% of TEC)	400	444
Project Management (4.3% of TEC)	873	857
Total Construction Costs (81.2% of TEC)	16,811	16,151
Contingencies		
Design Phase (1.0% of TEC)	200	200
Construction Phase (12.6% of TEC)	1,866	2,509
Total Contingencies (13.6% of TEC)	2,066	2,709
Total, Line Item Costs (TEC) [a]	19,886	19,886

5. Method of Performance

Roof reconstruction is performed by fixed price construction subcontracts issued by LLNL. The companies allowed to bid are pre-qualified by the project team. With the experience gained on Phase I, LLNL will supply mechanical and electrical support rather than have the contractor sub the work out. LLNL will also correct any mechanical equipment and electrical conduit deficiencies prior to roof construction beginning.

[a] Escalation rates taken from FY 1999 DOE escalation multiplier tables. Current estimate based on Conceptual Design Report of March 1997.

6. Schedule of Project Funding

(dollars in thousands)

	Prior Years	FY 2002	FY 2003	FY 2004	Outyears	Total
Project Cost						
Facility Costs						
Design	586	166	226	171	60	1,209
Construction	5,397	3,324	5,180	4,036	740	18,677
Total, Line item TEC	5,983	3,490	5,406	4,207	800	19,886
Total Facility Costs (Federal and Non-Federal)	5,983	3,490	5,406	4,207	800	19,886
Other Project Costs						
Conceptual design costs	30	0	0	0	0	30
NEPA documentation costs	2	0	0	0	0	2
Other ES&H costs	38	0	0	0	0	38
Total, Other Project Costs	70	0	0	0	0	70
Total Project Cost (TPC)	6,053	3,490	5,406	4,207	800	19,956

7. Related Annual Funding Requirements

(FY 2003 dollars in thousands)

	Current Estimate	Previous Estimate
Annual facility operating costs	0	0
Total related annual funding (operating from FY 2003 through FY 2022)	0	0

99-D-127, Stockpile Management Restructuring Initiative Kansas City Plant, Kansas City, Missouri

(Changes from FY 2003 Congressional Budget Request are denoted with a vertical line [|] in the left margin.)

Significant Changes

| # None.

1. Construction Schedule History

	Fiscal Quarter				Total Estimated Cost ($000)	Total Project Cost ($000)
	A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
FY 1999 Budget Request *(Preliminary Estimate)*	1Q 1999	2Q 2004	3Q 1999	3Q 2006	122,500	139,500
FY 2000 Budget Request	2Q 1999	3Q 2004	3Q 1999	2Q 2005	119,500	139,700
FY 2001 Budget Request	2Q 1999	3Q 2004	3Q 1999	2Q 2005	122,400	141,600
FY 2002 Budget Request	2Q 1999	3Q 2004	3Q 1999	2Q 2005	122,201	141,401
FY 2003 Budget Request (Baseline Estimate)	2Q 1999	3Q 2004	3Q 1999	4Q 2005	120,420	138,949
| FY 2004 Budget Request	2Q 1999	3Q 2004	3Q 1999	4Q 2005	120,420	138,950

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
1999	13,700	13,700	153
2000	16,935 [a]	26,066	12,385
2001	23,514 [b] [c]	25,734	24,017
2002	22,200	22,200	18,035
2003	29,900	29,900	32,703
2004	12,475	12,475	25,175
2005	1,696	1,696	7,952

3. Project Description, Justification and Scope

The end of the Cold War radically changed the defense posture of the United States, calling for significant changes and reductions in nuclear weapons complex structure and operations. The initial phase of this retrenchment began when the Department of Energy decided to cease nonnuclear production at three plants and consolidate most of its nonnuclear manufacturing at the Kansas City Plant (KCP). However, even with the influx of new missions, the downturn in defense production meant continued reductions in operating costs and work force.

The Stockpile Management Restructuring Initiative provides a cost-effective plan that capitalizes on the KCP's logistic and manufacturing expertise to ensure quality nonnuclear products through the year 2010 and beyond. Furthermore, the initiative minimizes NNSA costs in the near term by lessening risks and reducing operating expenditures concurrent with capital investments. It also provides the technical capability, production capacity, and flexibility necessary to allow the KCP to support scheduled nonnuclear production and a wide range of unanticipated production requirements, confidently and effectively.

The Stockpile Management Restructuring Initiative will allow the KCP's infrastructure to be altered and greatly reduced from the current plant profile, substantially reducing costs to operate the KCP. The restructuring initiative consists of changing the existing plant and operational approach in four major aspects: 1) physically reducing the size of the facility, 2) changing the approach to manufacturing from product-based to process-based, 3) reducing the support infrastructure appropriate for the right-sized operation, and 4) further streamlining the organizational structure to focus directly on the core-manufacturing mission.

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[a] Original appropriation was $17,000,000. This was reduced by $65,000 for the FY 2000 rescission enacted by P.L. 106-113.

[b] Original appropriation request was $23,765,000. This was reduced by $199,000 by the Safeguards and Security (S&S) Amendment. The comparable S&S amount for FY 2000 for this project was $142,000; the comparable appropriation amount was $16,793,000.

[c] Original appropriation was $23,566,000. This was reduced by $52,000 for a rescission enacted by Section 1403 of the FY 2001 Consolidated Appropriations Act. There is no change to the TEC due to a corresponding increase to the FY 2005 appropriation amount.

Currently, the KCP consists of approximately 3.2 million square feet of floor space contained in three connected buildings: the main building, the Manufacturing Support Building (MSB) and the Technology Transfer Center (TTC). Much of the floor space is underutilized and costly to maintain. The SMRI project is responsible for vacating approximately 465,000 square feet of the 840,000 reduction. The KCP will be rearranged into three business units and a support operations business unit to bring about an overall reduction in total managed floor space, streamline operations, and produce increased long-term operating efficiencies in manufacturing processes. The approximate square footage of each business unit after consolidation is as follows:

	Square Ft.	
Electrical Products Business Unit	236,000	
Mechanical Business Unit	350,000	
Engineered Materials Business Unit	198,000	
Support Operations Business Unit	910,000	
Unallocated and Unusable	666,000	(includes aisles, restrooms, and utility set backs)
Total	2,360,000	

The SMRI project supports the implementation of process-based manufacturing by consolidating similar operations into three business units and one support operations unit. These business units are established according to the various electronic, mechanical and engineering materials technologies and processes. The Support Operations unit encompasses the remaining functions. Unless otherwise noted, all of the areas within these business units are impacted by the SMRI project.

Electronics Products Business Unit (EPBU) Technology Overview

The electronics products factory includes three process modules: microelectronics, interconnects, and final assembly. Each electronic process module will fabricate all product lines that require the processes of that module. In addition to the three process modules, there will be three manufacturing areas for specialized products: Joint Test Assembly (JTA), Special Electronic Assembly (SEA), and Test Equipment.

The three process modules are:

Microelectronics: All substrates, hybrid microcircuits, chip packages, and leadless chip carriers that require clean room processing are fabricated in the state-of-the-art microelectronics module. The module is located in the new microelectronics facility which was completed in June 1995 and became fully operational in September 1998 (not impacted or part of the SMRI project).

Interconnects: The interconnects module contains the manufacturing of round-wire cables, flat flex cables and junction boxes. These are used to attach and interconnect components. The only two process affected by SMRI are flat-flex cable and junction box manufacturing.

Final Assembly: The fabrication of complete electronic systems is performed in the final assembly module. This consists of the assembly and encapsulation of all components required for complete electronic products. Procured components, printed wiring assemblies, and manufactured hardware are assembled to produce complete electronic systems such as radars, programmers, trajectory sensing, and firesets.

Mechanical Business Unit (MBU) Technology Overview

The MBU will consist of 14 modules which will fabricate or procure all required product lines. This is a process-based approach for most mechanical technologies, complemented by generic product-based manufacturing departments, mechanical support laboratories, and engineering services as follows:

Mechanical Welding: Mechanical Welding is a process-based activity group providing welding mechanical hardware and welding operations in common support of factory operations. The in-place consolidation will combine operations, which currently exist in Welding Operations, Interim Reservoir Welding, Model Shop and Tool Room, and the Mechanical Welding Laboratory.

Sheet Metal and Mechanical Assembly: The sheet metal fabrication assembly area will provide common support for a range of mechanical and electromechanical products, and includes typical sheet metal processes as well as laser marking.

Electromechanical Assembly: Electromechanical Assembly will be restructured in a downsized and consolidated operation to provide support of stronglinks and other miniature assemblies which have design features that include miniature solenoids, ceramic electrical headers, miniature springs, friction reducing coatings and bearings, low resistance electrical contacts, magnetically coupled switching, and a host of other unique designs. Most miniature mechanisms require assembly in a class 100 clean environment, utilizing clean benches within a class 100,000 clean room.

Heat Treating and Abrasive Blasting: The heat treat and abrasive blasting areas provide service for all mechanical product lines. Included in the relocation of the Heat Treat department is the replacement of a portion of the furnaces and support equipment, which will not survive the relocation due to their poor condition. The structural integrity of the furnaces being replaced is very poor and modifications would be required to refurbish firebrick and heating elements and the equipment may not survive the relocation. Due to the large size of these furnaces and the criticality of this equipment as a unique capability, new furnaces will be procured and installed in the new location prior to excess of the old equipment.

Mechanical Machining: Mechanical machining and inspection will be a downsized and consolidated operation that will fabricate hardware through traditional and non-traditional means in sizes ranging from large case-type housings to miniature piece parts for assemblies. The machined hardware provided by this module would support requirements of all programs at KCP for both internal and external customers.

Reservoir Fabrication and Assembly: Reservoir production responsibility was transferred from the DOE's Rocky Flats Plant to the KCP through the nonnuclear reconfiguration program. Because of special handling, cleaning and contamination considerations associated with reservoir production, KCP's reservoir facility contains most processes necessary to manufacture, test, and inspect a wide variety of production reservoirs. SMRI implementation will not change the Reservoir facility.

STA Products Manufacturing: The Office of Transportation and Safeguard (OTS) Products Manufacturing supports the secure transportation needs for the DOE Secure Transportation Asset including refurbishment of existing trailers, original manufacture of the new design Safeguards Transporter Trailer (SGT) and multiple short-term special maintenance activities. The OTS manufacturing area will be consolidated by combining the secure trailer sheet metal area with the primary SGT assembly facility.

Mechanical Support Laboratories: Support laboratories for Mechanical Operations will continue to provide the current types of support, though in a smaller footprint through consolidation.

Plastics Molding & Filled Elastomers: This area supports injection, compression, and transfer molding of thermoset and thermoplastic compounds, and material preparation and compression molding of filled elastomeric products.

Foam Products: Foam Products is a process-based approach, which has combined equipment needed for fabrication of rigid polyurethane foams, filled elastomer foams and foam desiccant product lines.

Plastics Machining, Assembly & Inspection: In the Plastics Machining, Assembly & Inspection module, the manufacturing and machining of all Special Plastics Case Assemblies and Subassemblies, Gas Getters, Composites, and all other plastic products and the related inspection of these products will be consolidated. This consolidation allows for some enhanced utilization of floor space and equipment.

Plating & Painting: These two process modules provide custom metal finishing services to the entire plant. These two operations are not impacted by the SMRI project.

Engineered Materials Business Unit (EMBU) Technology Overview

The engineered materials factory consists of four processing modules as follows:

Model Shop and Tool Room: The Model Shop and Tool Room is a support organization that will provide prototype and evaluation hardware, tool and gage fabrication and maintenance, special grinding of cutting tools, and limited tool design in support of unique and short-cycle time needs of production operations. This area will not be impacted by SMRI.

Engineering Laboratories: The Engineered Materials Business Unit contains several large laboratories. Only the Nuclear Grade Steels Receiving and Inspection, and Non-Destructive Test Labs will be affected by SMRI. The other Engineering Laboratories will remain unchanged.

Engineering Services: The Engineered Materials Business Unit provides document control, drafting, and other support services for the other business units. These functions are primarily office areas, and are not modified in the SMRI project.

Metrology: Metrology provides calibration services to the plant and will not be modified under SMRI.

Support Operations Technology Overview

Support operations includes boilerhouses, waste management operations, patrol headquarters, stores (including enduring stockpile), maintenance, cafeteria, office and other functions that are essential for plant operations. Included under this function is the physical plant separation work for walls and utilities and security guard support during construction. Also included is the construction and relocation of a

downsized cafeteria. These functions, generally placed in the category of support, are common to plant operations and are not assigned to a specific factory.

Physical Plant Separation: Maximum Foreseeable Fire Loss (MFL) rated separation between the NNSA and GSA will be provided by construction of fire rated subdivision walls. Major air handling and utilities systems serving both NNSA and GSA will be separated to allow for independent maintenance of these services on both sides of the separation line after the SMRI project is complete.

Stores: Stores' areas will be consolidated and reduced in number. Gages and fixtures, chemicals, and some of the production and non-production stores areas will remain in their current locations. Bulk materials and large production and non-production areas will be relocated and resized to meet future stores requirements. This bulk storage area will be located in a high-roof, unexcavated area of the plant, which is adjacent to a new high-rack storage area.

Project Milestones:

FY 1999:	A-E Work Initiated	2Q
	Physical Construction Starts	3Q
FY 2004:	A-E Work Completed	3Q
FY 2005:	Physical Construction Completed	4Q

4. Details of Cost Estimate

(dollars in thousands)

	Current Estimate	Previous Estimate
Design Phase		
Preliminary and Final Design Costs (Design Drawings and Specifications)	6,971	7,411
Design Management Costs (0.9% of TEC)	1,046	1,112
Project Management Costs (0.3% of TEC)	349	371
Total, Design Costs (6.9% of TEC)	8,366	8,894
Construction Phase		
Buildings	39,460	42,423
Standard Equipment	42,379	36,793
Inspection, Design and Project Liaison, Testing, Checkout and Acceptance	2,812	3,170
Construction Management (5.1% of TEC)	6,189	6,392
Project Management (6.6% of TEC)	7,917	6,330
Total, Construction Costs (82.0% of TEC)	98,757	95,108
Contingencies		
Design Phase (0.9% of TEC)	1,043	1,377
Construction Phase (10.2% of TEC)	12,254	15,041
Total, Contingencies (11.1% of TEC)	13,297	16,418
Total, Line Item Costs (TEC) [a]	120,420	120,420

5. Method of Performance

Design and inspection are performed under a KCP negotiated architect-engineer contract. Construction will be accomplished either by fixed-price contract awarded after competitive proposals or by cost plus incentive fee contracts. All contracts will be administered by Honeywell.

Best value contracting methods will be used for design and construction services.

[a] The Conceptual Design Report was completed in March 1997. Escalation is calculated to the midpoint of each activity. Escalation rates were taken from the FY 1998 DOE escalation multiplier tables. Overhead estimates were calculated at a factor of 14 percent for procurement and 85 percent for internal labor.

6. Schedule of Project Funding

(dollars in thousands)

	Prior Years	FY 2002	FY 2003	FY 2004	Outyears	Total
Project Cost						
Facility Cost						
Design	6,951	1,745	713	0	0	9,409
Construction	29,005	16,290	32,589	25,175	7,952	111,011
Total, Line item TEC	35,956	18,035	33,302	25,175	7,952	120,420
Total, Facility Costs (Federal and Non-Federal)	35,956	18,035	33,302	25,175	7,952	120,420
Other Project Costs						
Conceptual Design Cost	1,000	0	0	0	0	1,000
Other Project-Related Costs	10,959	1,611	1,510	1,705	1,745	17,530
Total, Other Project Costs	11,959	1,611	1,510	1,705	1,745	18,530
Total, Project Cost (TPC)	47,915	19,646	34,812	26,880	9,697	138,950

7. Related Annual Funding Requirements

(FY 2005 dollars in thousands)

	Current Estimate	Previous Estimate
Annual facility operating costs [a]	3,700	3,700
Annual facility maintenance/repair costs	5,400	5,400
Programmatic operating expenses directly related to the facility	9,374	9,374
Total related annual funding (operating from FY 2005 through FY 2034)	18,474	18,474

[a] Estimated life of project–30 years.

96-D-102, Nuclear Weapons Stockpile Stewardship Facilities Revitalization, Phase VI, Various Locations

(Changes from FY 2003 Congressional Budget Request are denoted with a vertical line [|] in the left margin.)

Significant Changes

The TEC/TPC are reduced by $448,000 due to the financial close-out of five of the six subprojects in this construction project data sheet. Only the Storm Drain, Sanitary Sewer, and Domestic Water Systems Modernization at SNL is ongoing, and it will be completed at the end of FY 2004.

1. Construction Schedule History

	Fiscal Quarter				Total Estimated Cost ($000)	Total Project Cost ($000)
	A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
FY 1996 Budget Request [a]	1Q 1996	1Q 1999	3Q 1997	4Q 1999	33,700	34,660 [a]
FY 1997 Budget Request	1Q 1996	4Q 1999	3Q 1997	1Q 2002	69,659	70,748
FY 1998 Budget Request	1Q 1996	4Q 1999	3Q 1997	1Q 2002	72,876	75,475
FY 1999 Budget Request	1Q 1996	4Q 1999	3Q 1997	4Q 2000	74,226	76,254
FY 2000 Budget Request	1Q 1996	3Q 2002	3Q 1997	4Q 2003	74,226	76,298
FY 2002 Budget Request	1Q 1996	3Q 2002	3Q 1997	4Q 2003	71,725 [b]	73,817
FY 2003 Budget Request	1Q 1996	3Q 2002	3Q 1997	4Q 2004	71,725	73,817
FY 2004 Budget Request *(Current Baseline Estimate)*	1Q 1996	3Q 2002	3Q 1997	4Q 2004	71,277	73,369

[a] The TEC/TPC for this project in FY 1996 includes only two subprojects. Additional subprojects were included in the FY 1997 (two) and FY 1998 (two) Construction Project Data Sheets bringing the total number of subprojects funded within this line item to six.

[b] The FY 2001 appropriation amount of $2,640,000 was reduced by $1000 for the FY 2000 rescission enacted by P.L. 106-113, and by $2,500,000 which was offset by the use of prior year balances available from the Water Well Replacements subproject as required by the FY 2001 appropriation.

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
1996	2,520	2,520	340
1997	19,250	19,250	3,744
1998	19,810	19,810	21,470
1999	24,106 [a]	24,106	21,149
2000	139 [b]	139	14,323
2001	0	0	3,844
2002	2,900	2,900	3,008
2003	1,000	1,000	1,593
2004	1,552	1,552	1,322
2004	0	0	484

3. Project Description, Justification and Scope

This series of projects provides for the construction of new facilities, and modifications, relocations, and additions to existing facilities for the Nuclear Weapons Stockpile Stewardship facilities at Sandia National Laboratories (SNL), Los Alamos National Laboratory (LANL), Lawrence Livermore National Laboratory (LLNL) and the Nevada Test Site (NTS). These projects are a multiyear capital investment program to revitalize the Nuclear Weapons Stockpile Stewardship complex. These facilities will replace or add to existing facilities and infrastructure that are overaged, deteriorated, overcrowded, or are inadequate to preserve capabilities required for the current and future weapons stockpile stewardship program.

The Nuclear Weapons Stockpile Stewardship program is made up of a highly complex set of activities which are extremely dependent on current and advanced technology facilities and equipment to meet its varied needs. The successful performance of the Stockpile Stewardship program contributes directly to the quality and reliability of the nuclear weapons stockpile. In addition to unremitting requirements for reliability and performance, we are committed to pursue new safety and safeguards features for the enduring stockpile. These standards require innovative physics concepts and designs, the development of new materials and material applications, and extension of both engineering and manufacturing technologies beyond the current "state-of-the-art." All of this requires support of a reliable infrastructure.

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[a] A reprogramming action that received final Congressional approval on November 5, 1998, increased FY 1999 funding for the 138 kV Substation Modernization subproject by $3,683,000 and eliminated the corresponding FY 2001 funding requirement.

[b] The FY 2000 appropriation amount of $2,640,000 was reduced by $1000 for the FY 2000 rescission enacted by P.L. 106-113, and by $2,500,000 which was offset by the use of prior year balances available from the Water Well Replacements subproject as required by the FY 2000 appropriation.

The revitalization effort was initiated in FY 1984 with Project 84-D-107, Nuclear Testing Facilities Revitalization, and was followed in FY 1985, FY 1988, FY 1990, FY 1992 and FY 1994 by follow-on phases. These projects were defined based on needs identified by representatives from the Albuquerque and Nevada Operations Offices, and the three weapons laboratories. Since the initiation of these projects, all aspects of the laboratory complex capital asset base continued to be critically reviewed and have resulted in the initiation of this line item project which contains six subprojects.

The consolidation of the Nuclear Weapons Stockpile Stewardship revitalization needs into one project data sheet focuses the issue of the total needs of the Stockpile Stewardship program. With the decreased demand for new weapon systems, this project is oriented toward preserving the critically needed infrastructure at LANL, NTS, SNL, and LLNL. These subprojects all cover general purpose facilities at various DOE locations that are an integral part of the installation support infrastructure. Included are basic utility systems, such as electrical power distribution, sewage, roads, parking lots, gas distribution, water supply, and the like. Many of these systems were constructed during the 1940s to World War II specifications with a 10-year maximum life expectancy. Despite extensive preventative maintenance over the intervening years, many of them are now deteriorated beyond economic repair and do not meet present-day standards for safety and environmental protection.

Full funding for subprojects 01, Water Well Replacements; 02, Fire Protection Improvements; 03, 138 kV Substation Modernization; 04, Roof Replacement; and 06, Site 300 Fire Station/Medical Facility has been provided through prior year appropriations.

| Details for subproject 05, Storm Drain, Sanitary Sewer, and Domestic Water Systems, Modernization, is provided.

Subproject 01 - Water Well Replacements, LANL, Los Alamos, New Mexico

TEC	Previous	FY 2002	FY 2003	FY 2004	Outyears	Construction Start - Completion Dates
$14,127	$14,200	$ -127	$ 0	$ 0	$ 0	3Q 1997 - 2Q 2000

This project received its final funding in FY 1999. No additional funding is required.

Project Milestones:

None.

Subproject 02 - Fire Protection Improvements, LANL, Los Alamos, New Mexico

TEC	Previous	FY 2002	FY 2003	FY 2004	Outyears	Construction Start - Completion Dates
$16,923	$17,000	$ -77	$ 0	$ 0	$ 0	4Q 1997 - 2Q 2001

This project received its final funding in FY 1999. No additional funding is required.

Project Milestones:

None.

Subproject 03 - 138kV Substation Modernization, NTS, Las Vegas, Nevada

TEC	Previous	FY 2002	FY 2003	FY 2004	Outyears	Construction Start - Completion Dates
$ 11,786	$11,991	$ -205	$ 0	$ 0	$ 0	4Q 1997 - 4Q 2001

This project received its final funding in FY 2000. No additional funding is required.

Project Milestones:

None.

Subproject 04 - Roof Reconstruction - Protection of Real Property, LLNL, Livermore, California

TEC	Previous	FY 2002	FY 2003	FY 2004	Outyears	Construction Start - Completion Dates
$7,774	$7,810	$ -36	$ 0	$ 0	$ 0	2Q FY 1998 - 4Q FY 1999

This project received its final funding in FY 1998. No additional funding is required.

Project Milestones:

None.

Subproject 05 - Storm Drain, Sanitary Sewer, and Domestic Water Systems, Modernization, SNL, Albuquerque, New Mexico

TEC	Previous	FY 2002	FY 2003	FY 2004	Outyears	Construction Start - Completion Dates
$15,374	$9,474	$ 3,348	$ 1,000	$ 1,552	$ 0	1Q 1999 - 4Q 2004

Much of the storm drain system, sanitary sewer system, and water distribution system at SNL have been in place for 30 to 50 years. Studies and video inspection have shown that the systems are in need of rehabilitation and expansion. As time passes, utilities that support DOE programs will be threatened, and the probability of losses of equipment and time will increase. Systems in deteriorated condition have high maintenance costs.

This subproject at SNL will: (1) rehabilitate and enlarge the storm drain system to reduce the risk of flooding of existing facilities, reduce or eliminate risks of soil and groundwater contamination, and minimize maintenance costs caused by the erosion of unlined channels; (2) rehabilitate the sanitary

sewer system to address the issues of old, deteriorating sewer lines, and the threat of contamination of soil and water due to leakage by rehabilitating sewer lines and manholes; and (3) improve the water distribution system and fire protection by improving electronic controls, installing water meters, and replacing several deteriorated water lines.

One of Sandia's environmental missions is to be in full compliance with the Federal environmental regulations, including all appropriate permitting. Regulatory drivers for this subproject include the Safe Drinking Water Act, National Pollutant Discharge Elimination System, 40 CFR 122, 123, and 124, the Clean Water Act, DOE Order 6430.1A, and Tiger Team Finding SW/CF-04.

Storm Drain System

Comprehensive drainage system analyses have been completed for SNL. These system analyses showed that six facilities in Technical Areas I, II, and IV would be impacted by the 100-year floodplain, including Building 880, which houses several Cray mainframe computers, key to a number of programs. Eight facilities in Technical Areas III and V would be impacted by the 100-year floodplain. Improvement to and expansion of the storm drain system as described below would remove the facilities in Technical Areas I, II, III, IV, and V from the 100-year floodplain.

Camera equipment was used to inspect the storm drain lines in 1992 and showed that approximately 26,524 feet of storm drain systems require major repair or replacement to alleviate flooding and structural failure. The majority of the failing system is in Technical Area I and has exceeded its 40-year design life.

A sedimentation and capacity analysis performed for existing earth-lined channels determined that existing utilities adjacent to the channels are at risk to damage due to erosion of the channel flow. The results show that no matter how well the channels are maintained, failure is imminent. Failure will lead to roads being washed out leading to Technical Area IV, overtopping of the channel, and possibly flooding of facilities. This project proposes to line the existing channels with concrete to prevent erosion, increase capacity, protect utilities, and reduce the amount of sediment carried downstream.

The following improvements will be made to the Storm Drain System:

- Enlarge the 9th Street and 17th Street storm drains to accommodate the 100-year developed-conditions runoff, including the diversion of flows from the 14th Street and H Avenue intersection.
- Line the 9th Street, 14th Street, 17th Street, and a portion of the 20th Street channels to eliminate erosion and minimize sediment transport.
- Install a storm-drain pipe in the 20th Street channel from Hardin Blvd. to M Avenue.
- Construct berms, channels, and inlets and upsize culverts in Technical Areas III and V.
- Further integrate streets and storm inlets to ensure that storm flows can reach the storm sewer systems.
- Replace deteriorated storm drain inlets and manholes.

Sanitary Sewer System

A condition assessment report for the sewer system was completed in 1992 using in-line camera inspection data. The report was updated in 1995. The report categorized 25 percent of the sanitary sewer lines in Technical Areas I, II, and IV, and 164 sewer manholes as in either "poor" or "fair" condition. This means that several miles of pipe have a high probability of leaking industrial wastewater into the surrounding soil through cracks, separated joints, and corroded pipes. The worst section of pipe are also in danger of collapsing and backing wastewater up into buildings, many of which are critical to the mission of SNL. The proposed project will mitigate the poor condition of the system.

The following improvements will be made to the Sanitary Sewer System:

- Rehabilitate approximately 22,000 linear feet of the existing, deteriorated system using u-liner, slip lining, and open cut methods.
- Repair approximately 100 sewer manholes that are in "fair" or "poor" condition.

Water Distribution System

The existing water distribution system does not have electronic storage-tank monitoring devices needed to monitor the system properly. SNL is responsible via an interagency agreement with the Air Force for the operation and maintenance of the water system within SNL boundaries. With basic electronic monitoring, SNL will be able to monitor the system with confidence.

SNL is currently unable to monitor water consumption. As part of a Memorandum of Understanding with Federal and state agencies, SNL has agreed to cooperate in a water conservation effort. This project will provide meters at tie-in points to the KAFB system and will provide consumption data. This data will be used as part of a water conservation effort.

The following improvements will be made to the water distribution system:

- Install electronic monitoring equipment on the system.
- Install water meters at connections between Sandia and KAFB.
- Rehabilitate or replace selected deteriorated water lines.

Project Milestones:

FY 2002:	Complete verification of Title II Design on the Storm Drain System Improvements, Phase 2	4Q
	Start Construction on Storm Drain System Improvements , Phase 2	2Q
	Complete Design of Water Line Replacement/Rehabilitation	4Q
FY 2003:	Start Construction on Water Line Rehabilitation	2Q
	Complete Construction on Water Line Rehabilitation	4Q
FY 2004:	Complete Construction on Storm Drain System Improvements, Phase 2	4Q

Subproject 06 - Site 300 Fire Station/Medical Facility, LLNL, Livermore, California

TEC	Previous	FY 2002	FY 2003	FY 2004	Outyears	Construction Start - Completion Dates
$ 5,347	$ 5,350	$ -3	$ 0	$ 0	$ 0	3Q 1999 - 4Q 2000

This project received its final funding in FY 1999. No additional funding is required.

Project Milestones:

None.

4. Details of Cost Estimate

(dollars in thousands)

	Current Estimate	Previous Estimate
Design Phase		
Preliminary and Final Design costs (Design Drawings and Specifications)	5,441	5,411
Design Management Costs (1.3% of TEC)	972	969
Project Management Costs (1.0% of TEC)	774	773
Total Design Costs (10% of TEC)	7,187	7,153
Construction Phase		
Improvements to Land	12,937	12,758
Buildings	8,616	8,616
Special Equipment	9,269	9,269
Other Structures	7,452	7,452
Utilities	17,735	17,735
Standard Equipment	200	200
Removal Cost Less Salvage	704	704
Inspection, Design and Project Liaison, Testing, Checkout and Acceptance	3,317	3,317
Construction Management (2.8% of TEC)	2,011	2,011
Project Management (2.2% of TEC)	1,592	1,592
Total Construction Costs (77.1% of TEC)	63,833	63,654
Contingencies		
Design Phase (.04% of TEC)	1	35
Construction Phase (.4% of TEC)	256	883
Total Contingencies (.4% of TEC)	257	918
Total, Line Item Costs (TEC) [c]	71,277	71,725

[c] Rates used for escalation were taken from applicable DOE Departmental Price Change Indices, applied to the mid-point of the construction schedule.

5. Method of Performance

Design and procurement of the conventional facilities will be performed under negotiated architect-engineer contracts. To the extent feasible, construction and procurement will be accomplished by fixed-price contracts and subcontracts awarded on the basis of competitive bidding.

6. Schedule of Project Funding

(dollars in thousands)

	Prior Years	FY 2002	FY 2003	FY 2004	Outyears	Total
Total project costs						
Total facility costs						
Design	7,138	50	0	0	0	7,188
Construction	57,732	2,958	1,593	1,322	484	64,089
Total facility costs (Federal and Non-Federal)	64,870	3,008	1,593	1,322	484	71,277
Other project costs						
Conceptual design cost	1,072	0	0	0	0	1,072
Decontamination and Decommissioning (D&D)	10	0	0	0	0	10
NEPA documentation costs	124	0	0	0	0	124
Other ES&H costs	67	24	16	8	0	115
Other project-related costs	590	97	42	42	0	771
Total other project costs	1,863	121	58	50	0	2,092
Total Project Cost (TPC)	66,733	3,129	1,651	1,372	484	73,369

7. Related Annual Funding Requirements

(FY 2004 dollars in thousands)

	Current Estimate	Previous Estimate
Related annual costs (estimated life of project--40 years)		
Facility operating costs	155	155
Facility maintenance and repair costs	208	208
Programmatic operating expenses directly related to the facility	660	660
GPP or other construction related to the programmatic effort in the facility	50	50
Other costs	1	1
Total related annual costs (operating from FY 2004 through FY 2042)	1,074	1,074