

# Secure Transportation Asset - Program Overview

## Funding Schedule by Activity

(dollars in thousands)

Secure Transportation Asset (STA)	FY 2003	FY 2004	FY 2005	\$ Change	% Change
Operations and Equipment.....	124,253	122,941	143,873	+ 20,932	+ 17.0%
Program Direction.....	44,295	58,511	57,427	- 1,084	- 1.9%
<hr/>					
Subtotal, Secure Transportation Asset.....	168,548	181,452	201,300	+ 19,848	+ 10.9%
Use of Prior Year Balances.....	0	- 20,000	0	+ 20,000	- 100.0%
<hr/>					
Total, Secure Transportation Asset.....	168,548	161,452	201,300	+ 39,848	+ 24.7%

## FYNSP Schedule

(dollars in thousands)

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FYNSP Total
Secure Transportation Asset .....	201,300	185,000	185,971	190,014	195,000	957,285

## Description

A capability for the safe and secure transport of nuclear weapons, components, and materials that will meet projected Department of Energy (DOE), Department of Defense (DoD), and other customer requirements.

### Benefits to Program Goal 01.36.00.00 Secure Transportation Asset

The Secure Transportation Asset is funded under two activities – Operations and Equipment, and Program Direction. Although these are two separately funded activities, the STA is managed as a single program because of the unique structure of the STA as a government owned/government operated organization.

In the current FYNSP schedule, the workload requirements for this program will escalate significantly to support the production schedule for the nuclear weapons stockpile. The accelerated cleanup schedule planned for Hanford by the Environmental Management program requires planning and funding for higher levels of new vehicle and trailer production, as well as, the recruiting and training of additional agents. Both of these endeavors are long lead efforts, taking as long as three years to effectively increase mission capacity. The FY 2004 Energy and Water Development Act, that directed the use of \$20 million in prior year balances, has delayed previously planned activities, including the capacity expansion for SGT production and the hiring and training of Federal Agents. The challenge to increase

the capacity of the program is coupled with and impacted by national security interests and the associated approval of a new Design Basis Threat posture, which will necessitate the development of a new Safeguards System Security Plan (SSSP). The new posture will require that more assets be employed during the execution of convoys, resulting in a greater need for increased capacity. Related costs for mission training requirements for a larger agent force will increase instructor staff, material costs, and facilities. For FY 2005, \$6 million is included under project 05-D-140, Project Engineering and Design to support design of the Albuquerque Transportation and Technology Center, a facility that will consolidate work elements from several inadequate structures.

# Secure Transportation Asset - Operations and Equipment

## Funding Schedule by Activity

(dollars in thousands)

Secure Transportation Asset Operations and Equipment	FY 2003	FY 2004	FY 2005	\$ Change	% Change
Mission Capacity.....	66,409	73,470	72,271	- 1,199	- 1.6%
Security/Safety Capability.....	10,393	13,136	13,657	+ 521	+ 4.0%
Infrastructure and C3 Systems.....	28,925	25,644	24,992	- 652	- 2.5%
Design Basis Threat Response.....	0	0	18,300	+ 18,300	+ 100.0%
Program Management.....	18,526	10,691	14,653	+ 3,962	+ 37.1%
Subtotal, Secure Transportation Asset, Operations and Equipment.....	124,253	122,941	143,873	+ 20,932	+ 17.0%
Use of Prior Year Balances.....		- 9,400	0	+ 9,400	- 100.0%
Total, Secure Transportation Asset Operations and Equipment.....	124,253	113,541	143,873	+ 30,332	+ 26.7%

## FYNSP Schedule

(dollars in thousands)

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FYNSP Total
Secure Transportation Asset Operations and Equipment.....	143,873	117,456	111,308	107,495	105,271	585,403

## Description

A capability for the safe and secure transport of nuclear weapons, components, and materials that will meet projected Department of Energy (DOE), Department of Defense (DoD), and other customer requirements.

### **Benefits to Program Goal 01.36.00.00 Secure Transportation Asset**

Within the Secure Transportation Asset – Operations and Equipment program, 5 subprograms each make unique contributions to Program Goal 01.36.00.00. These subprograms accomplish the following: (1) Mission Capacity: agent candidate courses, transportation fleet, aviation services, transport optimization, and contractor utilization. In FY 2005, specific activities focus on: adding secure convoys, producing new escort vehicles and completing upgrades necessary for utilization of the DC-9 aircraft, acquired in FY 2004. (2) Security/Safety Capability: new fleet technologies, intensified agent training, and Security/Safety programs. FY 2005 activities will focus on: testing and evaluating new agent weapons and equipment. (3) Infrastructure and C3 systems: facility maintenance, support for construction projects, command and control communication (C3) systems, and emergency management. FY 2005 activities focus on deploying new VHF radios, producing Mobile Interface Controllers, replacing outdated communications hardware; and establishing the Alternate Transportation Emergency Control Center. (4) Design Basis Threat through the assessment, modification, and application of new state-of-the-art detection and deterrence technology for mobile site security, and (5) Program Management: corporate functions and business operations that control, assist, and direct transport operations.

## Annual Performance Results and Targets

FY 2000 Results	FY 2001 Results	FY 2002 Results	FY 2003 Results
There were no related targets. Establish requirements for all elements of support to DOE offices and NNSA, and plan workforce and equipment, accordingly. (MET GOAL)			

## Annual Performance Results and Targets

Performance Indicators	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Endpoint Target Date
Number of secure convoys completed each year (EFFICIENCY MEASURE)	Completed 75 convoys.	Complete >90 convoys.	Complete >100 convoys.	Complete >105 convoys.	Complete >110 convoys.	Complete >120 convoys.	Complete >130 convoys.	A mission capacity of 160 convoys per year in FY 2012
Number of vehicles produced each year to replace the aging fleet of 100 escort vehicles and 46 armored tractors	Replaced 24 vehicles.	Replace $\geq$ 20 vehicles.	Replace >14 vehicles.	Replace >15 vehicles.	Replace >5 vehicles.	Begin Design of replacement Escort Vehicle (EVC).	Complete Design of replacement EVC.	Replace 76 escort vehicles and 46 armored tractors in 100 percent of fleet replaced FY 2007 (Initial Task)
Total number of Safeguard Transporters (SGTs) in operation to achieve a fleet of 51 secure trailers	Achieved SGT fleet of 29 trailers.	Produce 3 SGTs; achieve fleet of 32 trailers.	Produce 3 SGTs; achieve fleet of 35 trailers.	Produce 4 SGTs; achieve fleet of 39 trailers.	Produce 4 SGTs; achieve fleet of 43 trailers.	Produce 4 SGTs; achieve fleet of 47 trailers.	Produce 4 SGTs; achieve fleet of 51 trailers.	Achieve SGT fleet of 51 trailers FY 2009

## Detailed Justification

(dollars in thousands)

FY 2003	FY 2004	FY 2005
---------	---------	---------

<b>Mission Capacity</b> .....	<b>66,409</b>	<b>73,470</b>	<b>72,271</b>
-------------------------------	---------------	---------------	---------------

Mission Capacity includes: recruiting, equipping and training new federal agents; vehicle production; safeguards transporter (SGT) production; fleet maintenance; scheduling; and transport optimization. Ongoing activities include: training new recruits in agent candidate training classes; basic support for agents; operations, maintenance, and planned replacement of transportation and training fleets; operation of fixed and mobile mechanical and electronic maintenance facilities; and maintenance and operations of the secure aviation services fleet and facilities. In FY 2005, specific activities focus on: adding secure convoys, producing new escort vehicles and completing upgrades necessary for utilization of the DC-9 aircraft, acquired in FY 2004.

<b>Security/Safety Capability</b> .....	<b>10,393</b>	<b>13,136</b>	<b>13,657</b>
---	---------------	---------------	---------------

Security/Safety Capability activities include the design, testing and deployment of new fleet technologies; training and certification; and maintenance of security and safety licenses. Ongoing activities include: designing and evaluating replacement vehicles and trailers; developing and conducting standardized agent and team training to sustain and maintain existing agent skill mix; meeting the safety and security requirements of nuclear explosives duties; developing and conducting operational readiness training; emphasizing individual development, emergency management, and advanced Special Response Force (SRF) training; conducting and supporting liaison with state and local law enforcement organizations; analyzing security methods and equipment; conducting vulnerability assessments; developing the Site Safeguards and Security Plan and Force-on-Force validation exercises and combat simulation computer modeling; and conducting safety studies and safety engineering for the Safety Basis, Nuclear Explosive safety and over-the-road safety issues. FY 2005 activities will focus on: testing and evaluating new agent weapons and equipment; and maintaining existing agent skills. This supports OST mission training requirements for a larger agent force and the development of a new Site Safeguards Security Plan (SSSP).

<b>Infrastructure and C3 Systems</b> .....	<b>28,925</b>	<b>25,644</b>	<b>24,992</b>
--	---------------	---------------	---------------

Infrastructure and C3 Systems activities include classified command, control, and communications (C3) activities to enhance required oversight of nuclear convoys; operation of the Transportation Emergency Control Centers (TECCs) and the Emergency Operations Center; maintenance, upgrades, required expansion projects, and leases for STA facilities and their respective equipment; and for web-based initiatives, configuration management, communications maintenance, electronic systems depot maintenance, Mobile Interface Controller (MIC) upgrade, relay station costs, and the Very High Frequency (VHF) radio upgrade. FY 2005 activities focus on: deploying new VHF radios; producing MICs; replacing outdated communications hardware; and establishing the Alternate TECC.

**Weapons Activities/  
Secure Transportation Asset Operations**

(dollars in thousands)

	FY 2003	FY 2004	FY 2005
--	---------	---------	---------

**Design Basis Threat Response** ..... **0**                      **0**                      **18,300**

The new Design Basis Threat (DBT) increases requirements associated with assessing site vulnerabilities. This funding request supports new equipment and training ready for immediate incorporation into mobile operations in response to this new DBT. Many potential technological enhancements judged to effectively bolster security for fixed site facilities have not, as yet, been studied for application to a mobile environment. This funding also supports formally assessing these technologies for best and most cost effective results supporting the development of force multiplying technologies and enhanced detection capabilities.

**Program Management** ..... **18,526**                      **10,691**                      **14,653**

Provides for corporate functions and business operations that control, assist, and direct transport operations. Program Management includes: supplies and equipment; medical contract costs; resident technical support; configuration management, technical document production and regulation; quality studies; professional development; routine STA web support; emergency management processes; and business integration.

---

**Total, Secure Transportation Asset Operations and Equipment** ..... **124,253**                      **122,941**                      **143,873**

---

## Explanation of Funding Changes

FY 2005 vs. FY 2004 (\$000)
-----------------------------------

<ul style="list-style-type: none"> <li> <p>▪ <b>Mission Capacity</b></p> <p>The decrease reflects the completion, in FY 2004, of armored tractor production and design and development of new-generation escort vehicle development .....</p> </li> <li> <p>▪ <b>Security/Safety Capability</b></p> <p>The increase supports Office of Secure Transportation (OST) mission training requirements for a larger agent force and development of a new Safeguards System Security Plan (SSSP) .....</p> </li> <li> <p>▪ <b>Infrastructure and C3 Systems</b></p> <p>This decrease reflects minor adjustments to the fielding of the new VHF radios, production of MICs, replacement of outdated communications hardware, and establishment of the Alternate TECC .....</p> </li> <li> <p>▪ <b>Design Basis Threat Response</b></p> <p>This increase reflects implementation of the new Design Basis Threat (DBT) through the assessment, modification, and application of new state-of-the-art detection and deterrence technology for mobile site security.....</p> </li> <li> <p>▪ <b>Program Management</b></p> <p>This increase supports enhanced human reliability requirements, including expanded requirements for annual polygraphs and clinical psychological examinations. The funding also provides for the increased contract medical physicians and staff necessary to support enhanced human reliability requirements.....</p> </li> </ul>	<p>- 1,199</p> <p>+ 521</p> <p>- 652</p> <p>+ 18,300</p> <p>+ 3,962</p> <hr style="border: 1px solid black;"/> <p><b>Total Funding Change, Secure Transportation Asset Operations and Equipment</b>      <b>+ 20,932</b></p>
--	--

# Capital Operating Expenses and Construction Summary

## Capital Operating Expenses

(Dollars in thousands)

	FY 2003	FY 2004	FY 2005	\$ Change	% Change
General Plant Projects.....	203	209	216	+ 7	+ 3.3%
Capital Equipment .....	60	62	64	+ 2	+ 3.2%
Total, Capital Operating Expenses .....	263	271	280	+ 9	+ 3.3%



# Secure Transportation Asset Program Direction

## Funding Schedule by Activity

(dollars in thousands)

Secure Transportation Asset Program Direction	FY 2003	FY 2004	FY 2005	\$ Change	% Change
Salaries and Benefits .....	37,812	51,050	50,735	- 315	- 0.6%
Travel .....	5,526	6,384	5,616	- 768	- 12.0%
Other Related Expenses .....	957	1,077	1,076	- 1	- 0.1%
<hr/>					
Subtotal, Secure Transportation					
Asset, Program Direction.....	44,295	58,511	57,427	- 1,084	- 1.9%
Use of Prior Year Balances .....	0	-10,600	0	+ 10,600	- 100.0%
<hr/>					
Total, Secure Transportation					
Asset Program Direction .....	44,295	47,911	57,427	+ 9,516	+ 19.9%
<hr/>					
Full Time Equivalents.....	391	461	480	+ 19	+ 4.1%

## FYNSP Schedule

(dollars in thousands)

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FYNSP Total
Secure Transportation Asset Program Direction.....	57,427	67,544	74,663	82,519	89,729	371,882

## Description

A capability for the safe and secure transport of nuclear weapons, components, and materials that will meet projected Department of Energy (DOE), Department of Defense (DoD), and other customer requirements.

### **Benefits to Program Goal 01.36.00.00 Secure Transportation Asset**

Within the Secure Transportation Asset – Program Direction program, three subprograms each make unique contributions to Program Goal 01.36.00.00: (1) salaries and benefits - overtime, workman's compensation, and health/retirement benefits, (2) travel - associated with over 100 secure convoys, and (3) other related expenses - professional development, Permanent Change of Station (PCS) moves, and contractual services.

## Annual Performance Results and Targets

Performance Indicators	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Endpoint Target Date
Total number of Federal Agents each year to achieve 420 agents	Achieve agent end-strength >240.	Achieve agent end-strength >266.	Achieve agent end-strength >290.	Achieve agent end-strength >302.	Achieve agent end-strength >322.	Achieve agent end-strength >343.	Achieve agent end-strength >352.	Agent end-strength of 420 by FY 2012.

## Detailed Justification

(dollars in thousands)

<b>Secure Transportation Asset Program Direction</b>	FY 2003	FY 2004	FY 2005
<b>Salaries and Benefits</b> ..... Provides for the salaries and benefits of the Program staff at Albuquerque, Fort Chaffee, and Washington, D.C., as well as the federal agents and support staff at the three Federal Agent Force locations (Albuquerque, Oak Ridge, and Pantex). Includes overtime, workman's compensation, and health/retirement benefits associated with a staffing level of 480 federal agents and staff.	<b>37,812</b>	<b>51,050</b>	<b>50,735</b>
<b>Travel</b> ..... Provides for travel associated with over 100 secure convoys, training at other U.S. Government facilities and military installations, and program oversight.	<b>5,526</b>	<b>6,384</b>	<b>5,616</b>
<b>Other Related Expenses</b> ..... Provides required training for handling materials by Federal Agent forces and staff professional development. Provides for Permanent Change of Station (PCS) moves and other Contractual Services	<b>957</b>	<b>1,077</b>	<b>1,076</b>
<b>Total, Secure Transportation Asset Program Direction</b> .....	<b>44,295</b>	<b>58,511</b>	<b>57,427</b>

### Other Related Expenses

(Dollars in thousands)

	FY 2003	FY 2004	FY 2005	\$ Change	% Change
Training, .....	334	354	364	+ 10	+2.8%
PCS Moves .....	600	700	700	+ 0	+0.0%
Other Contractual Services .....	23	23	12	- 11	- 47.8%
Total, Other Related Expenses .....	957	1,077	1,076	- 1	+ 0.1%

## Explanation of Funding Changes

FY 2005 vs. FY 2004 (\$000)
-----------------------------------

- **Salaries and Benefits**

The decrease reflects a rebaselining of this account resulting from higher than anticipated attrition coupled with delays in new recruiting ..... - 315

- **Travel**

The decrease reflects the utilization of contractors for the dead head miles resulting in a decrease in travel by Federal Agents ..... - 768

- **Other Related Expenses**

Decrease reflects reduced funding for PCS moves. .... - 1

**Total Funding Change, Secure Transportation Asset Program Direction ..... - 1,084**

# Nuclear Weapons Incident Response

## Funding Schedule by Activity

(dollars in thousands)

	FY 2003	FY 2004	FY 2005	\$ Change	% Change
Nuclear Weapons Incident Response					
Emergency Response.....	78,080	83,168	93,119	+ 9,951	+ 12.0%
Emergency Management.....	3,034	5,999	6,090	+ 91	+ 1.5%
<b>Total, Nuclear Weapons Incident Response.....</b>	<b>81,114</b>	<b>89,167</b>	<b>99,209</b>	<b>+ 10,042</b>	<b>+ 11.3%</b>

## FYNSP Schedule

(dollars in thousands)

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FYNSP Total
Nuclear Weapons Incident Response.....	99,209	100,136	100,657	98,331	100,609	498,942

## Description

The Nuclear Weapons Incident Response (NWIR) program responds to and mitigates nuclear and radiological incidents worldwide. In the FY 2005 budget request, this is a separate control line. Funding was previously included in Readiness in Technical Base and Facilities.

This program provides funding for emergency management and radiological emergency 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 Directives 39 and 62, 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. Capabilities range from providing radiological assistance in support of state and local agencies to responding to major national or international nuclear/radiological accidents or incidents. In addition, outreach, technical support, training, and exercise support is continually provided to the response community. Asset staffing consists primarily of engineers, scientists, and other technical personnel from the national laboratories, manufacturing facilities and other DOE/NNSA management and operating contractors.

In meeting these mission requirements, the 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.

**Benefits to Program Goal 01.37.00.00 Nuclear Weapons Incident Response**

Within the Nuclear Weapons Incident Response program, the Emergency Response and Emergency Management subprograms each make unique contributions to Program Goal 01.37.00.00. 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. These response teams include Accident Response Group (ARG), the Nuclear Emergency Support Team (NEST), and other assets. 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.

## Annual Performance Results and Targets

NWIR was not part of the NNSA during this entire timeframe and the DOE APP did not include measures for NWIR for these years.

FY 2000 Results	FY 2001 Results	FY 2002 Results	FY 2003 results
There were no related targets.			

## Annual Performance Results and Targets

Performance Indicators	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Endpoint Target Date
Cumulative number of the 7 designated Radiological Assistance Program (RAP) Regions with a maritime radiation search program.		1	3	5	6	7	7	Establish a maritime radiation search program in the 7 designated RAP Regions by the end of FY 2008.
Cumulative percentage of identified RAP team members (80 of 216) qualified provide technical assistance in managing and executing the response to a radiological or nuclear event.		30%	60%	80%	100%	100%	100%	Qualify 100% of identified RAP team members (80 of 216) to support the NNSA CMRT by the end of FY 2007. This satisfies the program requirement to have CMRT qualified team members in each of the 8 RAP Regions.
Annual number of "no-notice" emergency management exercises conducted .	Develop and implement a No-Notice emergency management exercise program for	8	9	10	11	12	12	Conduct annually 12 "no-notice" emergency management exercises by the end of FY 2008.

**Weapons Activities/  
Nuclear Weapons Incident Response**

**FY 2005 Congressional Budget**

Performance Indicators	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Endpoint Target Date
	program for DOE/NNSA sites.							end of FY 2008.
Annual Triage capability, measured in numbers of calls that could be resolved, to provide remote isotopic identification of an unknown item and determine if a threat exists. (EFFICIENCY MEASURE)		250 calls per year.	300 calls per year.	350 calls per year.	400 calls per year.	450 calls per year.	500 calls per year.	The Triage system will be able to resolve up to 500 calls per year by the end of FY 2009.
Cumulative percentage of emergency response equipment replaced, upgraded, or re-certified by 2009.		15%	30%	45%	60%	75%	100%	Replace, upgrade, or re-certify 100% of FY2003 baseline equipment by the end of FY2009.

## Detailed Justification

(dollars in thousands)

FY 2003	FY 2004	FY 2005
---------	---------	---------

<b>Emergency Response .....</b>	<b>78,080</b>	<b>83,168</b>	<b>93,119</b>
---------------------------------	---------------	---------------	---------------

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 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 individuals. These volunteers come from a broad mix of DOE scientific facilities and national laboratories. However, specialized assistance is provided largely by the Remote Sensing Laboratory at Nellis Air Force Base, Nevada; Los Alamos; Lawrence Livermore, and Sandia National Laboratories.

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 11<sup>th</sup> attacks, Emergency Response program activity has increased significantly. 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 2005, the NNSA Office of Emergency Operations will work cooperatively with the Department of Homeland Security to continue to provide assistance in emergency situations. Upon direction, the NNSA Office of Emergency Operations will deploy the radiological assets as directed by the Department of Homeland Security, which will act as the Lead Federal Agency (LFA).

Since September 11<sup>th</sup>, NNSA’s response assets have increasingly been a part of security missions led by federal law enforcement agencies. There is a consensus within the counterterrorism 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. Additionally, increased monitoring at the borders and significant proliferation of radiation detection equipment in the hands of law enforcement has resulted in a higher volume of requests for NNSA assistance, comprehensive training, and liaison.

To address these threats more effectively, the NNSA Office of Emergency Operations is restructuring its asset deployment capability to increase geographical coverage and improve response time throughout the country. Radiological Assistance Program (RAP) teams that currently serve in eight RAP regions on

(dollars in thousands)

FY 2003	FY 2004	FY 2005
---------	---------	---------

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 regions used by the DHS Emergency Preparedness and Response (EP&R) Directorate. Instead of centralized search operations from one location, the assets will be dispersed throughout the country to provide a faster response capability. Each region will 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), Environmental Protection Agency (EPA), 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 requested funds will support the deployment of necessary equipment, support program operations at the ten regions, and enable acquisition of additional equipment for each region.

- **Accident Response Group (ARG)** ..... **1,841**      **1,270**      **1,865**

The Accident Response Group (ARG) is a combination of federal and civilian employees with equipment from the NNSA 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 Department of Defense (DoD) and DOE delineating areas of responsibility and policy for response to peacetime nuclear weapons accidents and nuclear weapons significant incidents within the U.S. and its territories. For 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)** ..... **53,327**      **57,919**      **66,075**

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 DHS, DOE, FBI, EPA, Nuclear Regulatory Commission (NRC), and DOD to deal with incidents, 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 means to employ WMD. The NEST response assumes that such an act might occur with little, if any, advanced warning.

Under such circumstances, NEST would respond to assist in the identification and characterization of any nuclear weapon or radioactive device 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 2005 request includes a \$6.5 million increase to support the regionalization of the Weapons Activities/  
Nuclear Weapons Incident Response

FY 2005 Congressional Budget

(dollars in thousands)

FY 2003	FY 2004	FY 2005
---------	---------	---------

The FY 2005 request includes a \$6.5 million increase to support the regionalization of the radiological assets. An additional \$1.574 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 world 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.

▪ <b>Other Assets .....</b>	<b>22,912</b>	<b>23,979</b>	<b>25,179</b>
-----------------------------	---------------	---------------	---------------

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 (AMS)* detects, measures, and tracks radioactive material at an emergency scene to determine contamination levels using fixed and rotary aircraft.

The FY2005 request includes an \$0.8 million increase to provide mandatory aviation safety upgrades to the AMS fixed and rotary aircraft.

- The *Atmospheric Release Advisory Capability (ARAC)* 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 and abroad.

<b>Emergency Management .....</b>	<b>3,034</b>	<b>5,999</b>	<b>6,090</b>
-----------------------------------	--------------	--------------	--------------

Emergency Management provides for the comprehensive, integrated emergency planning, preparedness, and response programs throughout the Department. 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 emergency preparedness and readiness assurance activities to ensure an effective emergency management system is in place throughout the Department.

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

<b>Total, Nuclear Weapons Incident Response.....</b>	<b>81,114</b>	<b>89,167</b>	<b>99,209</b>
--	---------------	---------------	---------------





# Facilities and Infrastructure Recapitalization Program

## Funding Schedule by Activity

(dollars in thousands)

	FY 2003	FY 2004	FY 2005	\$ Change	% Change
Facilities and Infrastructure Recapitalization Program					
Operations and Maintenance					
Recapitalization.....	160,653	166,006	206,204	+ 40,198	+ 24.2%
Facility Disposition.....	51,120	45,000	45,000	+ 0	+ 0.0%
Infrastructure Planning.....	23,701	24,052	40,339	+ 16,287	+ 67.7%
Subtotal, Operations and Maintenance.....	235,474	235,058	291,543	+ 56,485	+ 24.0%
Construction .....	0	3,697	24,681	+ 20,984	+ 567.6%
Total, Facilities and Infrastructure Recapitalization Program.....	235,474	238,755	316,224	+ 77,469	+ 32.4%

## FYNSP Schedule

(dollars in thousands)

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FYNSP Total
Facilities and Infrastructure Recapitalization Program						
Operations and Maintenance						
Recapitalization.....	206,204	229,295	275,978	299,317	319,093	1,329,887
Facility Disposition.....	45,000	45,000	45,000	45,000	45,000	225,000
Infrastructure Planning.....	40,339	45,371	50,770	55,397	55,138	247,015
Subtotal, Operations and Maintenance	291,543	319,666	371,748	399,714	419,231	1,801,902
Construction.....	24,681	53,041	54,100	72,400	56,300	260,522
Total, Facilities and Infrastructure Recapitalization Program.....	316,224	372,707	425,848	472,114	475,531	2,062,424

**Weapons Activities/  
Facilities and Infrastructure  
Recapitalization Program**

**FY 2005 Congressional Budget**

## **Description**

The Facilities and Infrastructure Recapitalization Program (FIRP) mission is to restore, rebuild and revitalize the physical infrastructure of the nuclear weapons complex – the third leg of the new Triad, as identified in the *Nuclear Posture Review* dated December 2001 and released by the Administration in January 2002. The program applies new direct appropriations to address an integrated, prioritized series of repair and infrastructure projects focusing on deferred maintenance that will significantly increase the operational efficiency and effectiveness of the NNSA weapons complex sites.

The Facilities and Infrastructure Recapitalization Program (FIRP) is a capital renewal and sustainability program that was established principally to reduce the large backlog of deferred maintenance, which had developed during the 1990s to an appropriate level consistent with industry best practices. The Program also funds an aggressive facilities disposition program to eliminate excess facilities and manages selected utility line items to further reduce the deferred maintenance backlog. The FIRP is separate, distinct, but complementary to the ongoing programmatic base maintenance and infrastructure efforts at NNSA sites. Maintenance and infrastructure are primarily funded by Readiness in Technical Base and Facilities (RTBF) and through site overhead allocations to ensure that facilities necessary for immediate programmatic workload activities are maintained sufficiently. FIRP addresses the additional sustained investments above the RTBF base for deferred maintenance and infrastructure that are needed to extend facility lifetimes, reduce the risk of unplanned system and equipment failures, increase operational efficiency and effectiveness, and allow for the Recapitalization of aging facility systems. FIRP works in close partnership with RTBF to assure the facilities and infrastructure of the nuclear weapons complex are restored to an appropriate condition to support the mission. FIRP is scheduled to complete in 2011. Between now and the time FIRP is completed, the Program will work closely with facilities and infrastructure organizational counterparts at Headquarters and NNSA sites to institutionalize responsible and accountable facility management practices.

### **Benefits to Program Goal 01.38.00.00 Facilities and Infrastructure Recapitalization Program**

Within the Facilities and Infrastructure Recapitalization Program (FIRP), four subprograms each make unique contributions to Program Goal 01.38.00.00. The Recapitalization subprogram funds capital renewal and sustainability projects required to restore the facilities and infrastructure comprising the nuclear weapons complex to an acceptable condition. The FIRP Construction subprogram funds selected utility line-item construction projects across the weapons complex to further reduce the deferred maintenance backlog and satisfy a critical need for improvement to NNSA sites utilities infrastructure. The Facility Disposition subprogram provides funds to accomplish the decontamination, dismantlement, removal and disposal of excess facilities that have been deactivated. The Infrastructure Planning subprogram funds planning activities for next-year Recapitalization projects. Its primary objective is to ensure that projects are adequately planned in advance of project start to permit the timely obligation of construction funds and effective project execution.

### **Program Assessment Rating Tool (PART)**

The Department implemented a tool to evaluate selected programs. PART was developed by the Office of Management and Budget (OMB) to provide a standardized way to assess the effectiveness of the Federal Government's portfolio of programs. The structured framework of the PART provides a means through which programs can assess their activities differently than through traditional reviews.

The current focus is to establish outcome- and output-oriented goals, the successful completion of which will lead to benefits to the public, such as increased national security and energy security, and improved environmental conditions. DOE has incorporated feedback from OMB into the FY 2005 Budget Request, and the Department will take the necessary steps to continue to improve performance.

For the FY 2004 Budget, OMB conducted a PART review on FIRP. The PART assessment noted that the program was well managed. Because the Program is new, with only limited measurable results to date, OMB assigned its highest allowable rating of “Moderately Effective.” As a result of the PART recommendations that there may be some overlap between the FIRP program and other NNSA infrastructure related programs, NNSA conducted a review of its infrastructure programs as documented in its Infrastructure Plan for the NNSA Nuclear Complex (3008 Report) dated April 2003, which provides an infrastructure plan for the nuclear weapons complex adequate to support the nuclear weapons stockpile. The 3008 Report, mandated by Congress, advocates maintaining the existing configuration of the NNSA Nuclear Complex. In addition, the NNSA reviews its infrastructure programs annually as part of the Ten Year Comprehensive Site Plan (TYCSP) process in the Fall of each year, beginning with FY 2002. Annual limited updates are submitted each April. NNSA continues to endorse the position regarding the importance of maintaining the existing separate facilities organizations. The NNSA Administration has gone on record with Congress that the two complementary programs Readiness in Technical Base and Facilities (RTBF) and FIRP, are essential to maintaining a responsive infrastructure. FIRP provided OMB an FY 2005 update to its FY 2004 PART.

## Annual Performance Results and Targets

FY 2000 Results	FY 2001 Results	FY 2002 Results	FY 2003 Results
There were no related targets.	There were no related targets.	Execute oversight of more than 50 FY 2002 Recapitalization Projects consistent with scope, cost, and schedule baselines. (MET GOAL)	Execute a multi-year recapitalization program to arrest the deterioration and reduce the backlog of maintenance and repair projects. (MET GOAL)
		Implement an excess prioritized project list to ensure high priority facilities are demolished, based on NNSA's 10 Year Comprehensive Site Plans (TYCSPs) that result in disposal of over 485,311 square feet of floor space. (MET GOAL)	

## Annual Performance Results and Targets

Performance Indicators	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Endpoint Target Date
Deferred Maintenance Reduction: Annual dollar amount of deferred maintenance backlog reduced based upon projects that have been issued authorizations to start work (and cumulative percentage of the estimated total deferred maintenance backlog of \$1.2 billion to be reduced). The NNSA commitments are to stabilize deferred maintenance by the end of FY 2005 and achieve industry standards by the end of FY 2009 for mission essential facilities and infrastructure. The industry standard is for deferred maintenance to be less than 5% of Replacement Plant Value.	Reduced NNSA's deferred maintenance by \$77 million.	By the end of the fiscal year, issue authorizations to start work to achieve a reduction in NNSA's deferred maintenance of \$79 million (7% of the estimated FY03 \$1.2 billion baseline)	By the end of the fiscal year, issue authorizations to start work to achieve a reduction in NNSA's deferred maintenance of \$156 million (increasing the total deferred maintenance reduction to 20% of the estimated FY03 \$1.2 billion baseline) Stabilize deferred maintenance by the end of FY 2005.	By the end of the fiscal year, issue authorizations to start work to achieve a reduction in NNSA's deferred maintenance of \$209 million (increasing the total deferred maintenance reduction to 37% of the estimated FY03 \$1.2 billion baseline)	By the end of the fiscal year, issue authorizations to start work to achieve a reduction in NNSA's deferred maintenance of \$240 million (increasing the total deferred maintenance reduction to 57% of the estimated FY03 \$1.2 billion baseline)	By the end of the fiscal year, issue authorizations to start work to achieve a reduction in NNSA's deferred maintenance of \$272 million (increasing the total deferred maintenance reduction to 80% of the estimated FY03 \$1.2 billion baseline)	By the end of the fiscal year, issue authorizations to start work to achieve a reduction in NNSA's deferred maintenance of \$244 million (increasing the total deferred maintenance reduction to 100% of the estimated FY03 \$1.2 billion baseline)	Return the condition of mission essential facilities and infrastructure to industry standards by the end of FY 2009.
<b>Footprint Reduction:</b> Annual gross square feet (gsf) of excess facilities space reduced based upon projects that have been issued authorizations to start work (and cumulative percentage of gsf reduced) to achieve a total of three million gsf of excess facilities space reduced by FY 2009 in support of overall footprint reduction efforts.	Reduced the NNSA footprint by 317,707 gsf increasing the total footprint reduction to approximately 34% of the estimated 3 million gsf that FIRP will disposition by FY 2009.  The 34% gsf complete is comprised of: 485,311 gsf of FY 2002	By the end of the fiscal year, issue authorizations to start work to achieve a reduction to the NNSA footprint of 325,000 gsf, increasing the total footprint reduction to 45% of the estimated 3 million gsf that FIRP will disposition by FY 2009.	By the end of the fiscal year, issue authorizations to start work to achieve a reduction to the NNSA footprint of 350,000 gsf, increasing the total footprint reduction to 57% of the estimated 3 million gsf that FIRP will disposition by FY 2009.	By the end of the fiscal year, issue authorizations to start work to achieve a reduction to the NNSA footprint of 300,000 gsf, increasing the total footprint reduction to 67% of the estimated 3 million gsf that FIRP will disposition by FY 2009.	By the end of the fiscal year, issue authorizations to start work to achieve a reduction to the NNSA footprint of 275,000 gsf, increasing the total footprint reduction to 77% of the estimated 3 million gsf that FIRP will disposition by FY 2009.	By the end of the fiscal year, issue authorizations to start work to achieve a reduction to the NNSA footprint of 275,000 gsf, increasing the total footprint reduction to 85% of the estimated 3 million gsf that FIRP will disposition by FY 2009.	By the end of the fiscal year, issue authorizations to start work to achieve a reduction to the NNSA footprint of 443,440 gsf, increasing the total footprint reduction to 100% of the estimated 3 million gsf FIRP will disposition by FY 2009.	Reduce the NNSA footprint by three million gross square feet (gsf) by FY 2009.  (Three million gsf has been established as a stretch goal).

**Weapons Activities/  
Facilities and Infrastructure  
Recapitalization Program**

**FY 2005 Congressional Budget**

Performance Indicators	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Endpoint Target Date
<p><b>Infrastructure Planning:</b>            Percentage of "next year" planned Recapitalization projects that are planned with current year planning funds. (EFFICIENCY MEASURE)</p> <p>This is an efficiency measure. Credible up-front planning of projects will result in improved efficiencies in ability to obligate funds and execute projects.</p>	<p>FY 2002 projects completed within FY 2002; 228,542 gsf of FY 2002 projects completed in FY 2003; and 317,707 gsf of FY 2003 projected completed in FY 2003.</p> <p>Approximately 56% of FIRP Recap. projects were planned in advance of the fiscal year that the projects will be started.</p>	<p>At least 53% of FIRP Recap. projects will be planned in advance of the fiscal year that the projects will be started.</p>	<p>At least 56% of FIRP Recap. projects will be planned in advance of the fiscal year that the projects will be started.</p>	<p>At least 59% of FIRP Recap. projects will be planned in advance of the fiscal year that the projects will be started.</p>	<p>At least 62% of FIRP Recap. projects will be planned in advance of the fiscal year that the projects will be started.</p>	<p>At least 65% of FIRP Recap. projects will be planned in advance of the fiscal year that the projects will be started.</p>	<p>At least 68% of FIRP Recap. projects will be planned in advance of the fiscal year that the projects will be started.</p>	<p>Not Applicable. This is an efficiency measure.</p>

## Detailed Justification

(dollars in thousands)

FY 2003	FY 2004	FY 2005
---------	---------	---------

**Recapitalization (Operations and Maintenance)..... 160,653 166,006 206,204**

Recapitalization funds capital renewal and sustainability projects required to restore the facilities and infrastructure comprising the nuclear weapons complex to an acceptable condition. NNSA has established corporate commitments/performance goals to stabilize deferred maintenance by FY 2005 and reduce the residual deferred maintenance backlog to industry standards by FY 2009 (5% or less of replacement plant value) for mission essential facilities and infrastructure. The primary executor of these corporate commitments, and the recovery of the complex, is the Recapitalization subprogram. Recapitalization funds projects in accordance with established criteria and priorities that target deferred maintenance reduction and repair (non-programmatic) of mission essential facilities and infrastructure. These projects are key to restoring the facilities that house the people, equipment, and material necessary to support scientific research, production, or testing to conduct the Stockpile Stewardship Program, the primary NNSA mission. Recapitalization also includes construction/renovation projects (non-programmatic) that renovate landlord or multi-program facilities, address adaptive reuse (conversion) or alterations to existing facilities, bring existing production and laboratory facilities into compliance with mandated codes and/or standards, or reduce the site landlord's total ownership costs of facilities and infrastructure. FIRP will invest a minimum of \$5 million in FY 2004 and an additional \$15 million in FY 2005 on the complex-wide Roof Asset Management Program to establish and implement a corporate approach for the management of NNSA's roofing assets. Benefits of the Roof Asset Management Program include improved cost efficiencies, improved quality and life extension of NNSA's roofing assets, consistent approach and common standards for optimal roofing repairs and replacement, and additional deferred maintenance reduction.

The focus of the Recapitalization subprogram in FY 2005 will be on achieving NNSA's aggressive corporate goal to stabilize complex-wide deferred maintenance by the end of FY 2005. The NNSA has established its deferred maintenance baseline and will track progress against deferred maintenance reduction performance goals.

**FIRP Construction..... 0 3,697 24,681**

FIRP Construction funds selected utility line-item construction projects across the weapons complex to further reduce the deferred maintenance backlog and satisfy a critical need for improvement to NNSA sites utilities infrastructure. These projects are expected to result in increased efficiencies because it is typically more cost effective to replace, rather than maintain, aging utilities. Generally, the projects exceed the General Plant Project (GPP) funding threshold and may include: electrical power distribution, central steam systems and distribution, central chilled water facilities and distribution, water supply systems, sanitary waste disposal systems, and natural gas distribution systems. FIRP Construction also funds the Project Engineering and Design (PED) of utility line item construction projects. FIRP initiated Planning, Engineering, and Design (PED) in FY 2004 and will begin construction in FY 2005 for selected utility line item projects, consistent with Project Data Sheets. These projects will enhance program execution, satisfy a critical need for improvement to NNSA sites' utilities infrastructure, and make a significant contribution to the overall reduction of deferred maintenance. Initial planning and conceptual design activities for proposed FIRP utility line

**Weapons Activities/  
Facilities and Infrastructure  
alization Program**

**FY 2005 Congressional Budget**

(dollars in thousands)

FY 2003	FY 2004	FY 2005
---------	---------	---------

deferred maintenance. Initial planning and conceptual design activities for proposed FIRP utility line item construction projects (i.e., Other Project Costs) are funded from the Infrastructure Planning subprogram. These construction projects meet the criteria for funding within the FIRP Program and are managed in accordance with current Department of Energy and NNSA orders and policies.

- **05-D-160, FIRP Project Engineering and Design (PED) Project**..... **0**                      **0**                      **8,700**

This FIRP PED project provides for Architect-Engineering (A-E) services (Title I and Title II) for several Facilities and Infrastructure Recapitalization Program (FIRP) utility construction projects that begin in FY 2005 (i.e., TA I Heating System Modernization (HSM) at Sandia National Laboratories, Steam Plant Life Extension Project (SPLEP) at Y-12 National Security Complex, and Electrical Distribution System Upgrade (EDSU) and Gas Main and Distribution System Upgrade (GMDSU) at Pantex Plant) 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.

- **05-D-601, Compressed Air Upgrades Project** ..... **0**                      **0**                      **4,400**

This project provides funding to construct the Compressed Air Upgrades Project (CAUP). The objective of this project is to rehabilitate the existing compressed air capability at the Y-12 National Security Complex to maintain a reliable, cost-efficient compressed air capability for the current and future buildings and facilities that will in turn ensure continued operations of Y-12's production facilities. PED funding is provided under 04-D-203 for Architect Engineering services to develop and complete preliminary and final (Title I and II) design of the CAUP.

- **05-D-602, Power Grid Infrastructure Upgrade** ..... **0**                      **0**                      **10,000**

The primary objective of this project is to construct the Southern Technical Area substation, install a new 115kV transmission line, and address deferred maintenance issues at the Eastern Technical Area substation, thus eliminating future vulnerabilities to the power supply and distribution systems in Los Alamos. This project will be accomplished through a design-build acquisition method, which is standard industry practice for this type of project. Design and construction will proceed in parallel. Therefore, there are no PED funds shown for this project.

- **05-D-603, New Master Substation, Technical Areas I and IV** ..... **0**                      **0**                      **600**

This project provides long-lead procurement of the transformer for the New Master Substation Utility for Technical Areas I and IV at Sandia National Laboratories in Albuquerque, New

(dollars in thousands)

FY 2003	FY 2004	FY 2005
---------	---------	---------

Mexico. The procurement mitigates the significant risk to project schedule and cost identified during the Conceptual Design Report (CDR) phase related to purchase of the main transformer. The project will enable procurement and delivery of the main transformer to the site in concert with the beginning of construction scheduled to start in FY 2006. PED funding is provided under 04-D-203 for Architect-Engineering (A-E) services to develop and complete preliminary and final (Title I and II) design of the New Master Substation.

**04-D-203, FIRP Project Engineering and Design (PED) Project.....**

**0                    3,697                    981**

This FIRP PED project provides for Architect-Engineering (A-E) services (Title I and Title II) for two utility construction projects that begin in FY 2004 (i.e., Compressed Air Upgrades Projects at Y-12 National Security Complex and the New Master Substation, Technical Area 1 and IV at Sandia National Laboratories) 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.

**Facility Disposition.....**

**51,120                    45,000                    45,000**

Facility Disposition provides funds to accomplish the decontamination, dismantlement, removal and disposal of excess facilities that have been deactivated. This includes facilities that are excess to current and future NNSA mission requirements and are not weapons' process contaminated. The Program has established a performance goal to reduce the NNSA footprint by three million gross square feet by FY 2009. Annual targets are in place that demonstrate tangible progress towards this goal. Facility Disposition activities reduce Environment, Safety and Health (ES&H) and safeguards and security requirements, address a portion of the necessary footprint reduction of the complex, improve management of the NNSA facilities portfolio, and reduce long-term costs and risks. FIRP Facility Disposition provides an economical approach to meeting the direction of Congress and supports overall NNSA footprint reduction efforts. Recent independent reviews of disposition costs indicate that the unit costs (i.e., dollars per square foot) compare very favorably with industry norms for the disposition of similar facilities. The FY 2005 FIRP annual performance target focuses on reducing the NNSA footprint by an additional 350,000 gross square feet bringing the total to approximately 57% of the estimated three million gross square feet FIRP will disposition by FY 2009.

(dollars in thousands)

	FY 2003	FY 2004	FY 2005
<b>Infrastructure Planning</b> .....	<b>23,701</b>	<b>24,052</b>	<b>40,339</b>

timely obligation of construction funds and effective project execution. The Infrastructure Planning subprogram supports the establishment of Recapitalization project baselines; planning and design for priority general infrastructure projects, to include FIRP utility line items; contract preparation and other activities necessary to ensure the readiness to obligate and execute funds. Infrastructure Planning also funds Other Project Costs (OPC) in anticipation of FIRP Project Engineering and Design (PED) and Construction for FIRP utility line items. Other key activities funded by this subprogram include assessments of the physical condition of the complex to aid in the prioritization of deferred maintenance reduction and facility consolidation efforts; Army Corps of Engineer activities, which are being accomplished under an Interagency Agreement, to support the procurement of small business contracts; and planning for the repair and renewal of cross-complex roofing projects. The FY 2005 annual performance target for this subprogram is that at least 56% of the FIRP Recapitalization projects will be planned in advance of the fiscal year the project is started.

---

<b>Total, Facilities and Infrastructure Recapitalization Program</b> .....	<b>235,474</b>	<b>238,755</b>	<b>316,224</b>
--	----------------	----------------	----------------

---

## Explanation of Funding Changes

FY 2005 vs.  
FY 2004  
(\$000)

### Recapitalization

<ul style="list-style-type: none"> <li>▪ <b>Operations and Maintenance</b> – Increase reflects the continued required ramp-up in funding to improve the condition of the complex and is in accordance with internal and external assessments that found funding in the past has not been sufficient to solve the backlog problem. Funding increase is consistent with the NNSA Future-Years Nuclear Security Program and is needed to accomplish essential FY 2005 projects to restore, revitalize, and rebuild the nuclear weapons complex. These FY 2005 projects and activities will be in accordance with the Ten Year Comprehensive Site Plans and support NNSA’s corporate goal to stabilize NNSA’s deferred maintenance by the end of FY 2005 .....</li> </ul>	+ 40,198
<ul style="list-style-type: none"> <li>▪ <b>Construction</b> – Increase supports the initiation of several new Project Engineering and Design construction projects that meet the criteria for funding within the Recapitalization subprogram, and supports follow-on funding for a project under the Project Engineering and Design for FY 2004. This increase also supports commencement of utility line item construction activities that will result in significant reductions in NNSA’s deferred maintenance .....</li> </ul>	+ 20,984
<hr/>	
<b>Total Funding Change, Recapitalization.....</b>	<b>+ 61,182</b>

### Facility Disposition

<ul style="list-style-type: none"> <li>▪ Level funding in FY 2005, since the overriding focus of FIRP is deferred maintenance reduction. Supports Congressional requirements for excess facilities elimination and continues activities to reduce the footprint of the nuclear weapons complex.....</li> </ul>	0
--	---

### Infrastructure Planning

<ul style="list-style-type: none"> <li>▪ Increase in Infrastructure Planning supports the continuation of credible, up-front planning and baselining of additional Recapitalization projects. These planning activities will ensure the effective and efficient use of FIRP funds .....</li> </ul>	+ 16,287
<hr/>	
<b>Total Funding Change, Facilities and Infrastructure Recapitalization Program ....</b>	<b>+ 77,469</b>

# Capital Operating Expenses and Construction Summary

## Capital Operating Expenses <sup>b</sup>

(Dollars in thousands)

	FY 2003	FY 2004	FY 2005	\$ Change	% Change
General Plant Projects.....	98,961	109,055	150,282	+ 41,227	+ 37.8%
Capital Equipment.....	11,821	13,027	19,602	+ 6,575	+ 50.5%
Total, Capital Operating Expenses .....	110,782	122,082	169,884	+ 47,802	+ 39.2%

---

<sup>b</sup> 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 2004 and FY 2005 funding shown reflects estimates based on FY 2003.

## Construction Projects

(dollars in thousands)

Total Estimated Cost (TEC)	Prior-Year Appropriations	FY 2003	FY 2004	FY 2005	Unappropriated Balance
05-D-160, Facilities and Infrastructure Recapitalization Program Project Engineering and Design, VL.....14,700 <sup>a</sup>	0	0	0	8,700	6,000
05-D-601, Compressed Air Upgrades Project, Y-12.....14,141 <sup>b</sup>	0	0	0	4,400	9,741
05-D-602, Power Grid Infrastructure Upgrade, LANL.....18,500 <sup>b</sup>	0	0	0	10,000	8,500
05-D-603, New Master Substation, Technical Areas I and IV, SNL.....7,500 <sup>b</sup>	0	0	0	600	6,900
04-D-203, Facilities and Infrastructure Recapitalization Program Project Engineering and Design, VL.....4,678 <sup>c</sup>	0	0	3,697	981	0
<b>Total, Construction.....59,519.....</b>	<b>0</b>	<b>0</b>	<b>3,697</b>	<b>24,681</b>	<b>31,141</b>

<sup>a</sup> The TEC estimate is for design only for the PED projects included in 05-D-161.

<sup>b</sup> These represent construction TEC estimates. Design TEC estimates are reported in the appropriate PED project.

<sup>c</sup> The TEC estimate is for design only for the PED projects included in 04-D-203. The TEC was reduced for subproject 04-02, Compressed Air Upgrades Project, Y-12 from \$6,421,000 to \$4,678,000.

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

(dollars in thousands)

Total Estimated Cost (TEC)	Prior-Year Appropriations	FY 2003	FY 2004	FY 2005	Acceptance Date
----------------------------------	------------------------------	---------	---------	---------	--------------------

Upgrade 9251 Primary Mill Motor Generator set, Y-12.....	2,450	0	0	0	0	CANCELED
---	-------	---	---	---	---	----------

**05-D-160, National Nuclear Security Administration  
Facilities and Infrastructure Recapitalization Program (FIRP)  
Project Engineering and Design (PED),  
Various Locations**

**1. Construction Schedule History**

	Fiscal Quarter				Total Estimated Cost (\$000) <sup>a</sup>
	A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete	
FY 2005 Budget Request ( <i>A-E and technical design only</i> ).....	1Q 2005	1Q 2007	3Q 2006	4Q 2011	14,700

**2. Financial Schedule**

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
<b>Design</b>			
2005	8,700	8,700	6,500
2006	6,000	6,000	7,200
2007	0	0	1,000

**3. Project Description, Justification and Scope**

This project provides for Architect-Engineering (A-E) services (Title I and Title II) for Facilities and Infrastructure Recapitalization Program (FIRP) 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.

The FY 2005 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

<sup>a</sup> The TEC estimate is for design only for the subprojects currently included in this data sheet.

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.

## FY 2005 Proposed Design Projects

### 05-01: TA I Heating System Modernization, 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		
2Q 2005	3Q 2006	2Q 2007	4Q 2011	6,000	60,000

Fiscal Year	Appropriations	Obligations	Costs
2005	3,000	3,000	3,000
2006	3,000	3,000	3,000

This project provides and enables Architect-Engineering (A-E) services required to develop and complete preliminary and final (Title I and Title II) design for the proposed Sandia National Laboratories Tech Area I Heating System Modernization. Through this design effort, the Heating System Modernization feasibility will be validated in detail design drawings and specifications. Detailed estimates of construction costs based on the approved design will be developed and working drawings, specifications, and construction schedules, including procurements, will be completed. The products of this design effort will be sufficiently complete and of such sufficient quality to enable procurement of long-lead items and construction to be initiated in fiscal year 2007 when construction funding is received. Construction funding for this project will be separately requested after completion of preliminary (Title I) design work.

Space heating, domestic water heating, and process heating requirements at Sandia National Laboratories (SNL) Area 1 are presently served from SNL's Central Steam Plant and steam distribution system. The ability to supply heating energy to the buildings within Tech Area 1 is critical to SNL's successful operation to meet the laboratory's mission. Tech Area 1 is home to a substantial portion of SNL's work force and therefore, any disruption in steam heating system service has significant ramifications to ongoing critical SNL missions.

The Steam Plant and portions of the distribution system are more than 50 years old. Significant capital upgrades are necessary over the next several years to ensure continued reliable service and to achieve desired reductions in deferred maintenance. Alternative courses of action have been identified and a recommended alternative will be extensively explored in a Conceptual Design Report (CDR), in support of a Request for Critical Decision One (CD-1), scheduled for submission early in FY05. An Energy Systems Acquisition Advisory Board (ESAAB) review will be performed in preparation for CD-1, as required.

Preconceptual planning estimates indicate that this utility line item project is likely to result in a \$14 to \$37 million reduction in deferred maintenance. Actual values will be determined later in the project lifecycle. This sizable decrease clearly demonstrates alignment with the Facilities and Infrastructure Recapitalization program overriding criteria to reduce deferred maintenance.

Through the design efforts covered by this data sheet, the TA I Heating System Modernization project feasibility will be validated in detail design drawings and specifications. Detailed estimates of

construction costs based on the selected design will be developed, and working drawings, specifications, and construction schedules, including procurements, will be completed. Construction funding for the TA I Heating System Modernization project will be requested separately after completion of preliminary (Title I) design work.

**05-02: Steam Plant Life Extension Project, Y-12**

Fiscal Quarter				Total Estimated Cost (Design Only (\$000))	Preliminary Full Total Estimated Cost Projection (\$000)
A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
3Q 2005	1Q 2007	1Q 2007	4Q 2009	6,000	32,300-44,700

Fiscal Year	Appropriations	Obligations	Costs
2005	3,000	3,000	2,000
2006	3,000	3,000	3,500
2007			500

The proposed project includes the repair and/or replacement of existing boiler and auxiliary systems and components. Major scope elements include the following: Boiler systems, coal receiving and handling system, forced-draft system, induced-draft system, feed water system, wet ash system, dry ash system, steam Plant Waste Water Treatment Facility, steam plant control room, steam plant facility (electrical), and steam plant facility (structural).

This subproject provides for preliminary and final (Title I and Title II) design for the proposed Steam Plant Life Extension Project (SPLEP) at the Y-12 National Security Complex. The project will upgrade, modify and/or replace components and systems of the steam generating facility to correct deficiencies related to capacity, physical condition, efficiency, reliability, operations, maintenance and compliance.

A robust and reliable source of steam is critical to protect Y-12's production and storage capabilities in support of the Defense Programs Stockpile Stewardship mission and other programmatic missions. The existing steam generation system has many deficiencies, which jeopardize Y-12's ability to reliably meet its mission.

The Y-12 steam plant was built in 1954 and consists of four boilers, each rated at 200,000 lbs/hour at 235 psig and 500 °F. The boilers are capable of being fueled with either coal or natural gas. Auxiliary systems including feed water, coal handling, combustion air, flue gas, ash handling, and the associated utilities, electrical and instrumentation systems are provided to support plant operation.

Much of the existing equipment has deteriorated and is at the end of its useful life. A significant amount of the instrumentation is antiquated, inoperable, or unreliable. The systems are inefficient and unreliable due to their age and the state of disrepair. Maintenance is difficult and expensive due to the age, condition of the equipment and difficulty in acquiring spare parts.

Completion of this project will eliminate approximately \$25,000,000 in deferred maintenance costs associated with the steam plant facility at Y-12.

**05-03: Electrical Distribution System Upgrade (EDSU), Pantex**

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	4Q 2006	3Q 2008	1,600	9,630 – 13,380

Fiscal Year	Appropriations	Obligations	Costs
2005	1,600	1,600	900
2006	0	0	400
2007	0	0	300

The Electrical Distribution System Upgrade project has been identified as a high priority project in the 2004 Pantex Plant Ten Year Comprehensive Site Plan (TYCSP). A key element of the site infrastructure is the electrical power distribution system. This project addresses three areas of the electrical distribution system that are of questionable reliability due to code non compliance, aging and/or unavailability of spare parts. Specifically the three areas are as follows:

1. Ground Fault and Surge Arrestor Upgrade (GFSAU).

A short circuit/coordination study of the Pantex Plant’s 12470, 480, and 208-volt distribution systems completed in 1994 identified substations and equipment that had ground fault/coordination deficiencies in violation of the National Electrical Code. These codes were adopted subsequent to Pantex electrical distribution equipment being installed and require substations and distribution equipment be protected from ground faults and line surges. The project design brings 11 substations (and any additionally identified substations) into compliance with the National Electrical Code.

2. Overhead Electrical Power Line Replacement.

The existing overhead primary pole and underground secondary lines are in many cases over 30 years old, and lines are deteriorating to the point that a major fault or weather incident could destroy lines, critical facilities, systems and equipment, potentially causing major outage to the Plant or unacceptable portions thereof. It is estimated that 14 miles of overhead lines and 1 mile of underground line need to be replaced. Over the past 18 months 12 poles have failed and had to be replaced. The rate of replacement is expected to increase as the system continues to age.

3. Facility Standby Diesel Generator Upgrade (FSDGU).

This subproject will replace approximately 16 facility generators that have operational and maintenance problems due to their age, obsolescence and difficulty in obtaining parts as this equipment ages. Problems will become more frequent and more likely to affect the ability of Pantex to meet mission requirements. Facilities utilizing these generators have been deemed critical or mission essential to the Plant’s operations. These facilities will continue to experience operational and maintenance problems with the possibility of facility shut down until reliable generators are installed. Approximately seven (7) building locations require Uninterruptible Power Supplies (UPS) replacement or upgrade due to the age and obsolescence of the existing UPS. The cost of maintaining the UPSs has averaged over \$250,000 per year over the past four years (1999-2002). As the UPSs reach their normal life expectancy these costs will continue in increase.

The total maintenance costs associated with the electrical distribution system has continued to rise from \$290,000 in FY96 to over \$590,000 in FY02. This trend is expected to continue as the equipment and facilities age. The anticipated deferred maintenance reduction associated with this project is \$2,600,000.

**05-04: Gas Main and Distribution System Upgrade (GMDSU), Pantex**

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	3Q 2006	3Q 2006	4Q 2007	1,100	3,770-5,970

Fiscal Year	Appropriations	Obligations	Costs
2005	1,100	1,100	600
2006	0	0	300
2007	0	0	200

Reliable gas service is required for Pantex operations. The Gas Main and Distribution System Upgrade project has been identified as a high priority project in the 2004 Pantex Ten Year Comprehensive Site Plan (TYCSP). The existing gas distribution system was installed in the 1940s. The distribution system consists of approximately 49 thousand feet of schedule 40 carbon steel pipe and 23 thousand feet of high-density polyethylene pipe in diameters ranging from ½” to 12”. This project addresses those areas of the gas main and distribution system that are of questionable reliability due to aging and use of old technologies. Specific areas of concern are as follows:

1. **Pipe Line Replacement**  
Failure in the gas main and distribution lines are occurring in the ductile iron pipe sections that were installed in 1940s. This project will replace steel / metal pipelines with high-density polyethylene plastic pipe.
2. **Upgrade of Appurtenances**  
Instrumentation required to regulate and meter the natural gas flow from the supplier will be upgraded with the latest technological devices. The installation of two Motor Operated Isolation Valves (MOIV) and remote operation capability will allow for the isolation of the gas main at the point of Government ownership and at the Pantex Plant boundary. This will provide quick shutdown capability should an incident occur that requires gas isolation.
3. **Cathodic Protection Installation**  
Sacrificial anodes for the valves and connection rings will provide cathodic protection for the new pipeline. The existing deep well anode beds associated with the existing metal pipeline will be abandoned in-place.

The Pantex Plant is a critical resource in the NNSA nuclear weapons mission. The Gas Main and Distribution System Upgrade is a Facilities and Infrastructure Recapitalization Project (FIRP) Line Item project designed to extend the life of the gas distribution system, reduce operational impacts, and reduce maintenance. The anticipated deferred maintenance reduction associated with this Project is \$3,100,000.

#### 4. Details of Cost Estimate <sup>a</sup>

(dollars in thousands)

	Current Estimate	Previous Estimate
Design Phase <sup>b</sup>		
Preliminary and Final Design costs (Design Drawings and Specifications) .....	12,495	N/A
Design Management costs (10% of TEC) .....	1,470	N/A
Project Management costs (5% of TEC) .....	735	N/A
Total, Design Costs (100% of TEC) .....	14,700	N/A
Total, Line Item Costs (TEC, Design Only) .....	14,700	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

	Prior Years	FY 2003	FY 2004	FY 2005	Outyears	Total
Project Cost						
Facility Cost						
Project Engineering and Design.....	0	0	0	6,500	8,200	14,700
Total, Line Item TEC .....	0	0	0	6,500	8,200	14,700
Total, Facility Costs (Federal and Non-Federal) .....	0	0	0	6,500	8,200	14,700
Other Project Costs						
Conceptual design costs.....	0	213	2,900	0	0	3,113
NEPA.....						
Other project-related costs.....	0	500	482	803	3,290	5,075
Total, Other Project Costs .....	0	713	3,382	803	3,290	8,188
Total Project Costs .....	0	713	3,382	7,303	11,490	22,888

<sup>a</sup> 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.

<sup>b</sup> The percentages for Design Management; Project Management; and Design Phase Contingency are estimates based on historical records and are preliminary estimates.

## 05-D-601, Compressed Air Upgrades Project Y-12 National Security Complex, Oak Ridge, Tennessee

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) <sup>a</sup>	Total Project Cost (\$000)
	A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
FY 2005 Budget Request ( <i>Preliminary Estimate</i> ).....	1Q 2004	3Q 2005	2Q 2005	4Q 2006	18,141	21,205

### 2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
<b>Design<sup>a</sup></b>			
2004	3,019	3,019	1,353
2005	981	981	2,647
<b>Construction</b>			
2005	4,400	4,400	4,400
2006	9,741	9,741	9,441
2007	0	0	300

<sup>a</sup> The TEC includes the cost of preliminary and final design (\$4,000,000) which was appropriated in 04-D-203, Project Engineering and Design (PED), Various Locations.

<sup>a</sup> Design funding was appropriated in 04-D-203, Project Engineering and Design (PED), Various Locations.

### **3. Project Description, Justification, and Scope**

#### **Project Description**

This project provides funding for the construction of the Compressed Air Upgrades Project (CAUP). Project Engineering and Design funding under line 04-D-203 was provided for Architect-Engineering (A-E) services to develop and complete preliminary and final (Title I and Title II) design of CAUP. The design effort will be completed during FY 2005.

The objective of this project is to rehabilitate the existing compressed air capability at the Y-12 National Security Complex (NSC) to maintain a reliable, cost-efficient compressed air capability for the current and future buildings and facilities at the Y-12 NSC that will in turn ensure continued operation of Y-12's production facilities.

#### **Justification**

The Y-12 NSC requires a robust and reliable source of compressed air to accomplish its production and storage missions. Critical functions of the compressed air system include the following:

- pneumatic control of production and manufacturing processes,
- pneumatic control of heating, ventilating, and air conditioning systems,
- cooling applications in selected manufacturing processes,
- operation of pneumatic pumps, valves, and air lift circulators,
- supporting the operation of air bearings, and
- mixing and sparging of storage tanks

The loss of these capabilities jeopardizes Y-12's ability to meet its mission.

Y-12 currently must rehabilitate the existing compressed air capability to maintain a reliable, cost-efficient compressed air capability that will in turn ensure continued operation of Y-12's production facilities. The existing compressed air system at Y-12 is unreliable and inefficient to operate due to the age and physical condition of the equipment and facilities, distributed design of facilities, and the lack of an integrated control system to manage the operation of the systems. A significant amount of corrective maintenance is required to maintain operations. Outages involving the loss or reduction of system pressures below the allowable minimums occur on average every two weeks. These pressure excursions require that non-essential uses of compressed air be curtailed until equipment can be brought back on-line. The average duration of an instrument air outage is 30 minutes.

Completion of this project will eliminate approximately \$16,400,000 in deferred maintenance costs associated with the compressed air facilities at Y-12.

Without the project, Y-12's compressed air capability is at risk of failure, which can adversely impact Y-12's missions by disrupting service and increasing cost.

## Scope

The CAUP will provide four new compressed air trains to be installed in Building 9767-13. The new trains will consist of compressors, air dryers, receivers and associated filters, heat exchangers, and interconnecting piping. An integrated control system will be provided for local operation. The control system will be connected to the existing Y-12 Utility Management System for monitoring and remote control. Supporting utilities will include electrical power, cooling water, and brine. These utilities will be supplied from existing systems which serve Building 9767-13.

The air will be delivered from the new compressor trains to users via the existing distribution systems.

Some building upgrades are required to meet this project's required design life. Existing ventilation systems will be replaced by this project. A new roof will be put on the building and a new roof access system will be provided to enhance maintenance access. Cooling tower 9409-13 will also be upgraded; new pumps and control valves and a new sprinkler system will be provided to increase operability and extend design life. Facilities that become surplus because of the project will be placed in safe shutdown and transferred to the Infrastructure Reduction Program for disposition.

### Project Milestones:

FY 2004:	Initiate AE Work	1Q
FY 2005	Complete AE Work	3Q
	Initiate Physical Construction	2Q
FY 2006	Complete Physical Construction	4Q

## 4. Details of Cost Estimate

(dollars in thousands)

	Current Estimate	Previous Estimate
Design Phase (17.6% of TEC) <sup>a</sup>	3,200	N/A
Construction Phase.....		
Special Facilities.....	7,775	N/A
Building Modifications.....	500	N/A
Construction Support (4.9% of TEC).....	888	N/A
Project Management (11.9% of TEC).....	2,150	N/A
Total, Construction Costs (62.4% of TEC).....	11,313	N/A
Contingencies		
Design Phase (4.4% of TEC).....	800	N/A
Construction Phase (15.6% of TEC).....	2,828	N/A
Total, Contingencies (20.0% of TEC).....	3,628	N/A
Total, Line Item Costs (TEC) <sup>b</sup> .....	18,141	N/A

## 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 management and operating (M&O) contractor, BWXT Y-12, including design, procurement, construction, and commissioning.

The M&O contractor will perform preliminary design. To the extent practical, final design and major procurement will be performed by an engineering/procurement (E/P) subcontractor awarded on the basis of the best value to the government. Construction will be performed to the extent practical using subcontracts that are awarded based on fixed-price competitive bidding.

<sup>a</sup> Design funding was appropriated in 04-D-203, Project Engineering and Design.

<sup>b</sup> This is a preliminary estimate. The Performance Baseline will be established following completion of preliminary design and approval of Critical Decision 2.

## 6. Schedule of Project Funding

(dollars in thousands)

	Prior Years	FY 2003	FY 2004	FY 2005	Outyears	Total
Project Cost						
Facility Cost						
Design .....	0	0	1,353	2,647	0	4,000
Construction .....	0	0	0	4,400	9,741	14,141
Total, Line item TEC <sup>a</sup> .....	0	0	1,353	7,047	9,741	18,141
Total, Facility Costs (Federal and Non-Federal).....	0	0	1,353	7,047	9,741	18,141
Other Project Costs						
Conceptual design cost <sup>b</sup> .....	0	1,070	0	0	0	1,070
Other project-related costs <sup>c</sup> .....	0	0	316	332	1,346	1,994
Total, Other Project Costs .....	0	1,070	316	332	1,346	3,064
Total, Project Cost (TPC) .....	0	1,070	1,669	7,379	11,087	21,205

## 7. Related Annual Funding Requirements

(FY 2007 dollars in thousands)

	Current Estimate	Previous Estimate
Annual facility operating costs <sup>d</sup> .....	445	N/A
Annual utility costs (estimated based on FY 2003 rate structure) .....	1,224	N/A
Total related annual funding (operating from FY 2007 through FY 2027) .....	1,669	N/A

<sup>a</sup> The TEC includes the cost of preliminary and final design, which was appropriated in 04-D-203, Project Engineering and Design.

<sup>b</sup> The Conceptual design costs include costs for completion of the Critical Decision 1 package and related documentation (project execution plan, conceptual design report, acquisition strategy, NEPA evaluation, ES&H plan, QA plan, etc.) in June 2003.

<sup>c</sup> Other project related costs include plant support to the project and commissioning/startup activities (development of plans and procedures, commissioning, startup, etc.).

<sup>d</sup> The annual facility operating costs includes annual maintenance and repair costs.



## 05-D-602, Power Grid Infrastructure Upgrade (PGIU), Los Alamos National Laboratory, Los Alamos, New Mexico

This project is design build. 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 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 2005 Budget Request (Preliminary Estimate)	see note <sup>a</sup>	see note <sup>a</sup>	3Q 2005	4Q 2007	18,500	20,000

### 2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
<b>Design/Construction</b>			
2005	10,000	10,000	10,000
2006	8,500	8,500	7,500
2007	0	0	1,000

### 3. Project Description, Justification and Scope

#### Project Description

The Laboratory is connected to the northern New Mexico power grid by two 115kV lines. The lines terminate at a single point at the Eastern Technical Area (ETA) substation on Laboratory property. The Laboratory and DOE have been aware for years that this existing electrical service of two 115kV lines with one common power delivery point represents a single point of failure. The Cerro Grande fire caused a single point failure in the system leaving the Laboratory and Los Alamos County without power during the fire. The fire burned up to the edge of the ETA substation and burned poles of both

<sup>a</sup> This project will be accomplished through a design-build acquisition method, which is standard industry practice for this type of project. Design and construction will proceed in parallel.

incoming lines. Both outside sources of power were lost. In addition, microwave communications with the grid were also lost. Normal practice would require a minimum of three independent sources of power. With this project, a new line would be built and the single point of failure on site would be eliminated.

The proposed action includes construction of an approximately 9-mile 115-kV power transmission line across DOE administered property; and associated terminal facilities. The line would originate at a new Southern Technical Area (STA) Switchyard and proceed northwesterly through the central portion of LANL to the West Technical Area (WTA) Substation. The entire right of way would be constructed using 115kV type structures.

The proposed STA switchyard would be constructed utilizing a 115 kV ring bus & circuit breaker scheme that allows power to be fed either to the WTA or ETA substation. The new STA switchyard would be energized from the Reeves line that currently exists.

This proposed project would also address deferred maintenance items associated with the Eastern Technical Area (ETA) Substation. The equipment associated with the ETA has not been able to receive critical maintenance and repairs due to the inability to de-energize the ETA to perform this maintenance. After completion of this project, the existing Norton line and Reeves line can then be individually de-energized to perform future critical maintenance while allowing LANL to continue normal operations without interruption.

### **Project Justification**

The primary driver for this project is the need to address deferred maintenance issues at the Eastern Technical Area (ETA) substation. The effort from a deferred maintenance stand point will address systems and equipment associated with the ETA and the existing Norton line which have not been able to be maintained due to the fact that power cannot be shut down to perform this maintenance. Many of the items to be replaced as deferred maintenance have surpassed their useful life and many others have been run to failure. This replacement/repair can only be made after the new system comes on line. The deferred maintenance buy down amount will be \$7.0M for this effort.

The secondary driver for this project is reliability. In accordance with NERC (North American Electric Reliability Council) and WSCC (Western Systems Coordinating Council) Planning Criteria, critical loads require two physically separate and independent sources of power. This requirement is not currently being complied with for the following reasons:

- The existing two incoming lines to Los Alamos terminate at the same location, the Eastern Technical Area substation. A single event could potentially remove both lines from service.
- The existing two lines cross one another at one location, which creates the potential for total loss through a failure of a structure or conductor of the upper line resulting in the loss of the lower line due to a single event.

- Due to the need for continuing repairs of the structures and conductors on the existing two lines and the substation, there is a potential for total loss of service to LANL should an event such as equipment failure or natural calamities like lightning and fire occur. Even when maintenance is not being performed, total loss of service could occur as has happened in the past due to lightning, fire, and equipment failures. These occurrences are not acceptable in critical nuclear facilities like Los Alamos National Laboratory.
- Standard utility industry reliability planning criteria require the utility organization to be able to serve its entire load with the single largest generation or transmission facility out of service. Currently the two 115kV lines that provide power to the site do not meet this requirement. The proposed high-voltage line would fulfill LANL's obligation for meeting some of the regional bulk utility planning criterion.
- This project would allow LANL to address a number of deferred maintenance items that has been steadily growing due to the inability to de-energize the existing lines and ETA.
- The recent failure of one of the lines due to equipment failure, and the recent action by the San Ildefonso Pueblo to cancel all permits to LANL for maintenance work on the portion of the existing 115 kV Norton line within the Pueblo, makes the Laboratory very vulnerable to total power "black-out".

The power system is vulnerable and reliability is definitely at risk. Failure to provide, as soon as possible, a completely independent source of power in an orderly, planned manner could lead to prolonged outages resulting in negative and unacceptable effects on the programmatic missions of the Laboratory.

### **Project Scope**

The primary objective of the Power Grid Infrastructure Upgrade project is to construct a new STA switchyard, install a new 115kV transmission line from the Southern Technical Area Switchyard to the Western Technical Area Substation and address deferred maintenance issues at the Eastern Technical Area Substation thus eliminating future vulnerabilities to the power supply and distribution systems in Los Alamos. The primary objective will be achieved by providing the following:

- **Transmission System:** The new system will provide structures and transmission lines as required by National Codes and Standards. The structures will be capable of resisting identified threats including Design Basis Accidents (DBA) and Natural Phenomena so that they may perform their function during and after these events. At LANL these events may be earthquakes, wild fires, high winds, terrorist actions, or other events as determined by Vulnerability Analysis and Hazards Assessment.
- **Switchyard:** A Southern Technical Area switchyard will be constructed in a desirable location adjacent to the existing Reeves transmission line. This switchyard will be the new connection point for the Reeves line, this connection will energize the STA switchyard and the new 115kV

transmission line that will terminate at the Western Technical Area substation. This STA switchyard will be constructed utilizing a ring bus & circuit breaker scheme that allows power to be fed either to the WTA or ETA substation.

- **ETA Substation equipment:** This project will include the procurement and installation of substation equipment and transmission line equipment to address deferred maintenance issues that have been ever increasing due to the inability to de-energize the ETA and Norton and Reeves lines for maintenance. This element will be accomplished after the new STA switchyard and new 115kV leg are installed and energized.
- **STA to WTA 115 KV Line:** The 115kV power line route will be selected so that it is in the best possible location accounting for easement, accessibility and affordability. The utility corridor cleared area will be large enough to assure that wildfire cannot threaten the transmission lines, structures or any of its outlying support equipment and structures (security systems, utilities equipment, etc.). Los Alamos is located in mountainous terrain where the climate ranges from high desert to wet alpine forest. The route will be selected to avoid areas of heavy snow cover, potential flash flood areas, high wind zones, weather extreme zones, areas with high lightning strike frequency and non-DOE properties. The site will be selected to avoid the presence of seismic faults where practical. The site selection will also be integrated with the Ten-Year Comprehensive Site Plan.
- **Access:** Utility corridor access roads will be provided where practical for routine maintenance.
- **Security:** Security requirements will be tailored to the particular area of the Laboratory being entered. All work performed on DOE properties will follow site-specific requirements for entry, escorting and prohibited items for the area being entered.

**Project Milestones:**

FY 2004:	Establish Performance Baseline (Critical Decision 2/3)	4Q
FY 2005:	Initiate Physical Construction	3Q
FY 2007:	Complete Physical Construction	4Q

## 4. Details of Cost Estimate

*(dollars in thousands)*

	Current Estimate	Previous Estimate
Design Phase <sup>a</sup> .....	1,926	N/A
Construction Phase		
Improvements to Land .....	658	N/A
Standard Equipment .....	11,930	N/A
Inspection, design and project liaison, testing, checkout, and acceptance .	163	N/A
Construction Management .....	207	N/A
Project Management (3.9% of TEC).....	729	N/A
Total, Construction Costs (73.9% of TEC).....	13,687	N/A
Contingencies		
Construction Phase.....	2,887	N/A
Total, Contingencies (15.6% of TEC).....	2,887	N/A
Total, Line Item Costs (TEC) .....	18,500	N/A

## 5. Method of Performance

Design and construction will be accomplished through a combination of competitively awarded and existing contracts, using fixed price and cost reimbursable pricing methods. The design effort is relatively simple and the construction scope is straightforward. Due to this, design-build is being planned as the execution approach at this conceptual stage and the preliminary estimate assumes this approach. The acquisition and execution approach will be specifically defined during the conceptual design phase.

---

<sup>a</sup> This project will be executed with a design-build acquisition strategy.

## 6. Schedule of Project Funding <sup>a</sup>

	Prior Years	FY 2003	FY 2004	FY 2005	Outyears	Total
Project Costs						
Facility Costs						
Design.....	0	0	0	1,926	0	1,926
Construction.....	0	0	0	8,074	8,500	16,574
Total, Line Item TEC	0	0	0	10,000	8,500	18,500
Other Project Costs						
Conceptual Design Cost .....	0	0	0	0		0
NEPA.....	0	0	0	0	0	0
Other Project-Related Costs <sup>b</sup> .....	0	1,000	250	0	250	1,500
Total, Other Project Costs.....	0	1,000	250	0	250	1,500
Total Project Cost (TPC) .....	0	1,000	250	10,000	8,750	20,000

## 7. Related Annual Funding Requirements

*(dollars in thousands)*

	Current Estimate	Previous Estimate
Annual facility operating costs.....	50	N/A
Annual facility maintenance and repair costs .....	100	N/A
Total related annual funding .....	150	N/A
Total operating costs (operating FY2006 through FY2026) <sup>c</sup> .....	3,000	N/A

<sup>a</sup> The baseline for this project will be established at CD-2 based on the selected contractor's fixed-price proposal.

<sup>b</sup> 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, and Readiness Assessment.

<sup>c</sup> More precise operating costs will be established during conceptual design.

# 05-D-603, New Master Substation, Technical Areas I and IV Sandia National Laboratories, Albuquerque, New Mexico

## 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 2004	4Q 2005	2Q 2006	2Q 2008	700	5,200– 7,500
FY 2005 Budget Request (Preliminary Estimate)....	2Q 2004	4Q 2005	2Q 2006	2Q 2008	8,200	8,750

## 2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
<b>Design</b>			
2004	700 <sup>a</sup>	700	700
<b>Construction</b>			
2005	600 <sup>b</sup>	600	600
2006	6,900	6,900	6,600
2007	0	0	300

<sup>a</sup> The design for this project was appropriated and accomplished in 04-D-203, National Nuclear Security Administration, Facilities and Infrastructure Recapitalization Program (FIRP), Project Engineering and Design (PED), Various Locations.

<sup>b</sup> Funding will be used for long-lead procurement of main transformer component to insure the project is completed within budget and in accordance with the schedule.

### **3. Project Description, Justification, and Scope**

This project has previously been authorized to procure the Architect-Engineering (A-E) services required to develop and complete preliminary and final (Title I and Title II) design for the new Sandia National Laboratories New Master Substation Utility for Technical Areas I and IV. Through this design effort, the New Master Substation feasibility will be validated in detail, design drawings, and specifications. Detailed estimates of construction costs based on the approved design will be developed, and working drawings, specifications, and construction schedules, including identification of long lead procurements, will be completed.

The New Master Substation design would be similar to Substation 41, which was constructed in 1998 and incorporates the design basis features for Sandia's standardized master substations. Standardized substations allow for using components/sub-systems that have proven operating efficiency and reliability, ease of maintenance, personnel and system safety features, and result in lower spare parts inventory. The new 12.47 kilovolt underground distribution feeder cables would connect the New Master Substation to the existing normal service master substations (Subs 35, 36, 37, & 41) in the Technical Area I-IV campus in a radial/loop configuration. This configuration allows for any one master substation to be shutdown for any operating or maintenance necessity (i.e. emergency, corrective, or preventive maintenance) by transferring building substations from one master substation to another. These transfers are usually performed without interruption of service to buildings.

The New Master Substation will be designed to address the following objectives:

- Provide sufficient main power transformer and distribution feeder capacity/configuration to meet planned electrical loads in the Technical Area I-IV campus as shown in the FY03 TYCSP.
- Provide additional 12.47 kilovolt radial/loop feeders to supplement the single radial/loop feeder serving Technical Area IV.
- Remove Substation 38, which presently supplies standby service to Technical Area IV.
- Continue to operate safely and in accordance with regulatory, environmental, and health policies.

Critical Decision One (CD-1), Approve Alternative Selection and Cost Range, was approved October 9, 2003.

The New Master Substation Utility for Technical Areas I and IV at Sandia National Laboratories in Albuquerque, New Mexico (SNL/NM) is needed to meet funded and future planned facilities shown in the FY03 TYCSP. These facilities include Line Item and General Plant Projects such as JCEL, MESA, CINT, SARC, MERC, Computing District Central Utility Building, Scientific Computing Facility, INSRC, and several IGPPs. These individual projects do not have sufficient funds to construct the New Master Substation. Additionally, since the New Master Substation and associated distribution feeders support Sandia's strategic objectives, which transcend multiple DOE/NNSA/Other Federal Agency programs, it would not be equitable to burden any one specific project/program with its cost.

A significant risk to project schedule and cost was identified during the Conceptual Design Report (CDR) phase for the procurement, and fabrication of the main transformer component for the Master Substation. To mitigate the risk, long lead procurement of the main transformer is scheduled for 3Q 2005 for an estimated cost of \$600,000. This long lead procurement strategy will ensure that the Main Transformer could be purchased and delivered to the site in concert with the beginning of the construction work. The construction work is set to start in FY06.

This project directly supports the recommendation of the December 2001 Nuclear Posture Review to revitalize the defense infrastructure to increase confidence in the deployed forces, eliminate unneeded weapons, and mitigate the risks of technological surprise. It directly contributes to the DOE Strategic Plan's Defense Strategic Goal: To protect our national security by applying advanced science and nuclear technology to the Nation's defense. It also supports achievement of DOE General Goal 1 of Nuclear Weapons Stewardship: Ensure our nuclear weapons continue to serve their essential deterrence role by maintaining and enhancing the safety, security and reliability of the U.S. nuclear weapons stockpile. This project would directly contribute to the safety and reliability of one of the nation's most sensitive nuclear weapons sites.

**Project Milestones:**

FY 2004:	Initiate AE Work	2Q
FY 2005	Complete AE Work	4Q
	Long Lead Procurement	3Q
FY 2006	Initiate Physical Construction	2Q
FY 2008	Complete Physical Construction	2Q

## 4. Details of Cost Estimate

(dollars in thousands)		
	Current Estimate	Previous Estimate
<b>Design Phase <sup>a</sup></b>		
Preliminary and Final Design Costs .....	480	N/A
Design Management Costs (1.7% of TEC).....	140	N/A
Project Management Costs (1.0% of TEC) .....	80	N/A
Total, Engineering Design, Inspection, and Administration of Construction Costs (8.5% of TEC).....	700	N/A
<b>Construction Phase</b>		
Utilities <sup>b</sup> .....	6,700	N/A
Construction Management (3.6% of TEC).....	300	N/A
Project Management (6.1% of TEC).....	500	N/A
Total, Construction Costs (91.4% of TEC).....	7,500	N/A
<b>Contingencies</b>		
Design Phase (0.9% of TEC).....	80	N/A
Execution Phase (7.6% of TEC) .....	620	N/A
Total, Contingencies (8.5% of TEC).....	700	N/A
Total, Line Item Cost .....	8,200	N/A
Total, Line Item Costs (TEC) .....	8,200	N/A

## 5. Method of Performance

Design of this project will be by the operating contractor or a subcontractor as appropriate. To the extent feasible, construction and procurement will be accomplished by fixed-priced contracts awarded on the basis of competitive bids.

---

<sup>a</sup> The design for this project was appropriated and accomplished in 04-D-203, National Nuclear Security Administration, Facilities and Infrastructure Recapitalization Program (FIRP), Project Engineering and Design (PED), Various Locations.

<sup>b</sup> This includes the \$600,000 long lead procurement of the main transformer.

## 6. Schedule of Project Funding

	Prior Years	FY 2004	FY 2005	Outyears	Total
Project Cost					
Facility Cost					
Design.....	0	700	0	0	700
Construction .....	0	0	600	6,900	7,500
Total, Line item TEC <sup>a</sup> .....	0	700	600	6,900	8,200
Total, Facility Costs (Federal and Non-Federal).....	0	700	600	6,900	8,200
Other Project Costs					
Conceptual design cost <sup>b</sup> .....	300	0	0	0	300
Other project-related costs <sup>c</sup> .....	18	81	82	69	250
Total, Other Project Costs .....	318	81	82	69	550
Total, Project Cost (TPC).....	318	781	682	6,969	8,750

## 7. Related Annual Funding Requirements

	(FY 2007 dollars in thousands)	
	Current Estimate	Previous Estimate
Annual facility operating costs .....	TBD	N/A
Annual utility costs (estimated based on FY 2003 rate structure).....	TBD	N/A
Total related annual funding (operating from FY 2007 through FY 2027).....	TBD	N/A

<sup>a</sup> The TEC includes the cost of preliminary and final design, which was appropriated in 04-D-203, Project Engineering and Design.

<sup>b</sup> The Conceptual design costs include costs for completion of the Critical Decision 1 package and related documentation (project execution plan, conceptual design report, acquisition strategy, NEPA evaluation, ES&H plan, QA plan, etc.) in June 2003.

<sup>c</sup> Other project related costs include plant support to the project and commissioning/startup activities (development of plans and procedures, commissioning, startup, etc.).



**04-D-203, National Nuclear Security Administration  
Facilities and Infrastructure Recapitalization Program (FIRP)  
Project Engineering and Design (PED),  
Various Locations**

**Significant Changes**

- The TEC for Project Engineering and Design (PED) of the Compressed Air Upgrades Project, Y12 is decreased by \$ 1,721,000 to \$4,700,000 with deletion of the Breathing Air System from the scope of this project.

**1. Construction Schedule History**

	Fiscal Quarter				Total Estimated Cost (\$000) <sup>a</sup>
	A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete	
FY 2004 Budget Request ( <i>A-E and technical design only</i> ).....	1Q 2003	4Q 2006	1Q 2006	1Q 2008	6,421
FY 2005 Budget Request ( <i>A-E and technical design only</i> ).....	1Q 2004 <sup>b</sup>	4Q 2005	2Q 2005	2Q 2008	4,700

**2. Financial Schedule**

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
<b>Design</b>			
2004	3,719 <sup>c</sup>	3,719	2,053
2005	981	981	2,647

**3. Project Description, Justification and Scope**

This project provides for Architect-Engineering (A-E) services (Title I and Title II) for Facilities and Infrastructure Recapitalization Program (FIRP) 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

<sup>a</sup> The TEC estimate is for design only for the subprojects currently included in this data sheet.

<sup>b</sup> Correction, this should have been 2004.

<sup>c</sup> The FY 2004 appropriated amount has not been adjusted to the FY 2004 Congressional Omnibus Appropriations Bill rescission of .59 percent.

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.

The 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 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: New Master Substation, Technical Area I and IV, 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		
2Q 2004	4Q 2005	2Q 2006	2Q 2008	700	6,900-8,200

Fiscal Year	Appropriations	Obligations	Costs
2004	700	700	700

This subproject provides and enables Architect-Engineering (A-E) services required to develop and complete preliminary and final (Title I and Title II) design for the proposed New Master Substation for Technical Areas I and IV at Sandia National Laboratories. Through this design effort, the New Master Substation feasibility will be validated in detail, design drawings, and specifications. Detailed estimates of construction costs based on the approved design will be developed, and working drawings, specifications, and construction schedules, including procurements, will be completed. The products of this design effort will be sufficiently complete and of such quality to enable long-lead procurement items to be procured and construction to be initiated in FY 2006 when construction funding is received. Construction funding for this project will be separately requested after completion of preliminary (Title I) design work.

The New Master Substation will be designed to address the following objectives:

- Provide sufficient main power transformer and distribution feeder capacity/configuration to meet planned electrical loads in the Technical Area I-IV campus as shown in the FY 2004 TYCSP.
- Provide additional 12.47 kilovolt radial/loop feeders to supplement the single radial/loop feeder serving Technical Area IV.
- Remove Substation 38, which presently supplies standby service to Technical Area IV.
- Continue to operate safely and in accordance with regulatory, environmental, and health policies.

The New Master Substation is an infrastructure facility consisting of a 115 kilovolt transmission section, 12/16/20 MVA main power transformer, 12.47 kilovolt/1200 ampere rated distribution switchgear section, 3600 kVAR power factor correction capacitor bank, station service equipment, control house with protective relaying and alarming systems, direct current supply system, and walled substation yard (~250x300 feet) to prevent unauthorized access. In addition, 12.47 kilovolt underground distribution feeder cables would be installed to connect the New Master Substation to the existing 12.47-kilovolt underground distribution grid that serves Sandia's buildings/facilities between Technical Areas I and IV.

**04-02: Compressed Air Upgrades Project, Y-12**

Fiscal Quarter				Total Estimated Cost (Design Only (\$000))	Preliminary Full Total Estimated Cost Projection (\$000)
A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
1Q 2004	3Q 2005	2Q 2005	4Q 2006	4,000	18,141

Fiscal Year	Appropriations	Obligations	Costs
2004	3,019	3,019	1,353
2005	981 <sup>a</sup>	981	2,647

This subproject provides and enables Architect-Engineering (A-E) services required to develop and complete preliminary and final (Title I and Title II) design for the proposed Compressed Air Upgrades Project at the Y-12 National Security Complex. The project will upgrade, modify and/or replace the compressed air production capability to correct deficiencies related to capacity, physical condition, efficiency, reliability, operations, maintenance and compliance.

The Y-12 Complex is served by compressed air systems housed in facilities located across the complex. The systems supply compressed air to the complex via three complex-wide piping distribution systems.

A robust and reliable source of compressed air is essential to protect Y-12's production and storage capabilities in support of the Defense Programs Stockpile Stewardship mission and other programmatic missions. The existing compressed air system has many deficiencies, which jeopardize Y-12's ability to reliably meet its mission. Much of the existing compressor and associated drying equipment has deteriorated and is at the end of its useful life. Significant amounts of the instrumentation are antiquated, inoperable, or unreliable. The systems are inefficient and unreliable due to their age, the state of disrepair and the less than optimum configuration of the systems for the current and future production footprints. Some systems are located in facilities, which are dilapidated and subject to flooding. Maintenance is difficult and expensive due to the age and condition of the equipment.

Completion of this project will eliminate approximately \$16,400,000 in deferred maintenance costs associated with the compressed air facilities at Y-12.

<sup>a</sup> The FY05 Appropriation and Obligation is decreased by \$1,721,000 to \$981,000 with deletion of the Breathing Air System from the scope of this project.

#### 4. Details of Cost Estimate<sup>a</sup>

(dollars in thousands)

	Current Estimate	Previous Estimate
Design Phase <sup>b</sup>		
Preliminary and Final Design costs (Design Drawings and Specifications .....	3,995	5,273
Design Management costs (10% of TEC) .....	470	487
Project Management costs (5% of TEC) .....	235	661
Total, Design Costs (100% of TEC) .....	4,700	6,421
Total, Line Item Costs (TEC, Design Only) .....	4,700	6,421

#### 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

	Prior Years	FY 2003	FY 2004	FY 2005	Outyears	Total
Project Cost						
Facility Cost						
Project Engineering and Design.....	0	0	2,053	2,647	0	4,700
Total, Line Item TEC .....	0	0	2,053	2,647	0	4,700
Total, Facility Costs (Federal and Non-Federal) .....	0	0	2,053	2,647	0	4,700
Other Project Costs						
Conceptual design costs.....	0	1,450	0	0	0	1,450
NEPA.....						
Other project-related costs.....	0	150	316	532	1,116	2,114
Total, Other Project Costs .....	0	1,600	316	532	1,116	3,564
Total Project Costs .....	0	1,600	2,369	3,179	1,116	8,264

<sup>a</sup> 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.

<sup>b</sup> The percentages for Design Management; Project Management; and Design Phase Contingency are estimates base on historical records and are preliminary estimates.

## Safeguards and Security

### Funding Schedule by Activity

(dollars in thousands)

	FY 2003	FY 2004	FY 2005	\$ Change	% Change
Safeguards and Security					
Operations & Maintenance					
Physical Security.....	480,320	499,069	589,491	+ 90,422	+ 18.1%
Cyber Security.....	69,200	79,740	80,500	+ 760	+ 1.0%
Total, Operations & Maintenance.....	549,520	578,809	669,991	+ 91,182	+ 15.8%
Construction.....	8,641	3,661	37,000	+ 33,339	+ 910.7%
Total, Safeguards and Security.....	558,161	582,470	706,991	+ 124,521	+ 21.4%
Offset for S&S Work for Others.....	-28,985	-28,985	-30,000	- 1,015	- 3.5%
Total, Safeguards and Security with Offset.....	529,176	553,485	676,991	+ 123,506	+ 22.3%

### FYNSP Schedule

(dollars in thousands)

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FYNSP Total
Safeguards and Security						
Physical Security.....	589,491	498,000	497,263	496,653	507,434	2,588,841
Cyber Security.....	80,500	66,071	73,021	68,637	70,464	358,693
Construction.....	37,000	43,000	48,400	48,400	48,400	225,200
Subtotal, Safeguards and Security.....	706,991	607,071	618,684	613,690	626,298	3,172,734
Offset, for S&S Work for Others.....	-30,000	-32,000	-33,000	-34,000	-35,000	-164,000
Total, Safeguards and Security with Offset.....	676,991	575,071	585,684	579,690	591,298	3,008,734

## **Description**

This program will protect National Nuclear Security Administration (NNSA) personnel, facilities, nuclear weapons, and information from terrorists and other post September 11<sup>th</sup> threats in a cost-effective manner.

### **Benefits to Program Goal 01.39.00.00 Safeguards and Security**

Within the Safeguards and Security program, the Physical Security and Cyber Security subprograms each make unique contributions to Program Goal 01.39.00.00. Physical Security constitutes the largest funding allocation of the NNSA security effort and includes (1) Protective Forces – a site’s primary front-line protection, consisting of armed and unarmed uniformed officers; (2) Physical Security Systems – provide intrusion detection and assessment barriers, access controls, tamper protection monitoring, and performance testing and maintenance of security systems; (3) Transportation – all security for intra-site transfers of special nuclear materials (including safe havens), weapons, and other classified material that is not funded through NNSA’s Office of Transportation Safeguards; (4) Information Security – provides protection for the classification and declassification of information, critical infrastructure, technical security countermeasures (TSCM), and operations security; (5) Personnel Security – encompasses the processes for administrative determination that an individual is eligible for access to classified matter, or is eligible for access to, or control over, special nuclear material or nuclear weapons; and (6) Materials Control and Accountability (MC&A) – provides for continuous accountability of special nuclear materials. Cyber Security implements policies and procedures for information protection and the design, development, integration, and deployment of all Cyber Security-related and infrastructure components of the Stockpile Stewardship Program and other activities at NNSA landlord sites. Safeguards and Security also includes two construction projects: 05-D-170, Project Engineering and Design and 05-D-701, Security Perimeter Project.

### **Program Assessment Rating Tool (PART)**

In FY 2004 the Safeguards and Security Program was rated by OMB as “Adequate”. OMB noted this rating should not be interpreted to mean that security at the Nation’s nuclear weapons complex is lax or insufficient. OMB believes that these facilities are some of the most secure facilities in the country; however, the program had not yet determined and published clear and measurable goals and targets. Based on these recommendations, NNSA has significantly revised our Safeguards and Security performance indicators. These new measures are included in this budget. NNSA will continue to work with OMB to determine whether these performance measures can be further defined. Safeguards and Security provided OMB an FY 2005 update to its FY 2004 PART.

## Annual Performance Results and Targets

F 2000 Results	FY 2001 Results	FY 2002 Results	FY 2003 Results
There were no related targets.	There were no related targets.	Provide technical support to the Counter-Terrorism Task Force strategic review of S&S DOE-wide, including cyber security. (MET GOAL)	Assess line management's progress in implementing Integrated Safeguards and Security Management. (MET GOAL)
		Develop a strategic framework for responsive and effective security methodology following the September 11, 2001 events. (MET GOAL)	Complete implementation of "Higher Fences" to enhance the protection of certain Restricted Weapons Data with DOE and DoD. (FMFIA) (MET LESS THAN 80% OF TARGET)
		Complete the milestones listed in the corrective action plans for the Departmental Challenge of Security and Counterintelligence. (FMFIA) (MET GOAL).	

## Annual Performance Results and Targets

Performance Indicators	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Endpoint Target Date
Percentage of Protective Force staff unscheduled overtime (EFFICIENCY MEASURE)	Unscheduled overtime of 32.5%. Plans were established to reduce unscheduled overtime. Delays in acquiring security clearances delayed execution of these plans. All required posts were staffed in accordance with DOE approved post priorities.	Reduce the percentage of Protective Force staff unscheduled overtime to 30%	Reduce the percentage of Protective Force staff unscheduled overtime to 28%	Reduce the percentage of Protective Force staff unscheduled overtime to 25%	Reduce the percentage of Protective Force staff unscheduled overtime to 20%	Reduce the percentage of Protective Force staff unscheduled overtime to 15%	Reduce the percentage of Protective Force staff unscheduled overtime to 15%	Unscheduled overtime to an average of 15% by 2008.
Percentage of each of six Physical Weapons Activities/ Safeguards and Security	All NNSA sites	Increase the	90% of the					

FY 2005 Congressional Budget

Performance Indicators	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Endpoint Target Date
Security topical area reviews (program management, protective forces, physical security systems, information security, nuclear materials control and accountability, and personnel security) at the NNSA sites where an evaluation of "effective" is achieved	reported federal evaluations of contractor safeguards and security performance were conducted.*	percentage of Physical Security topical area reviews at the NNSA where an evaluation of "effective" is achieved to 80%	percentage of Physical Security topical area reviews at the NNSA where an evaluation of "effective" is achieved to 85%	percentage of Physical Security topical area reviews at the NNSA where an evaluation of "effective" is achieved to 90%	percentage of Physical Security topical area reviews at the NNSA where an evaluation of "effective" is achieved to 90%	percentage of Physical Security topical area reviews at the NNSA where an evaluation of "effective" is achieved to 90%	percentage of Physical Security topical area reviews at the NNSA where an evaluation of "effective" is achieved to 90%.	physical security topical area reviews at NNSA sites will result in an evaluation of "effective" by 2006.
Percentage of classified and unclassified Cyber Security reviews at the NNSA sites where an evaluation of "effective" is achieved.	All NNSA sites reported federal evaluations of contractor safeguards and security performance were conducted.*	Increase the percentage of Cyber Security reviews at the NNSA where an evaluation of "effective" is achieved to 80%	Increase the percentage of Cyber Security reviews at the NNSA where an evaluation of "effective" is achieved to 85%	Increase the percentage of Cyber Security reviews at the NNSA where an evaluation of "effective" is achieved to 90%	Increase the percentage of Cyber Security reviews at the NNSA where an evaluation of "effective" is achieved to 90%	Increase the percentage of Cyber Security reviews at the NNSA where an evaluation of "effective" is achieved to 90%	Increase the percentage of Cyber Security reviews at the NNSA where an evaluation of "effective" is achieved to 90%.	90% of the cyber security reviews at NNSA sites will result in an evaluation of "effective" by 2006.
Percentage of OA, IG and GAO findings that have approved corrective action plans in place within 60 days from receipt of final report.	NNSA sites reported all approved corrective action plans completed.4 sites reported 100% of corrective action items were completed on time. 3 sites reported 90% were completed on time. 1 site reported only 27% completed on time.*	90% of the OA, IG, and GAO findings have approved corrective action plans in place within 60 days from receipt of final report.	90% of the OA, IG, and GAO findings have approved corrective action plans in place within 60 days from receipt of final report.	90% of the OA, IG, and GAO findings have approved corrective action plans in place within 60 days from receipt of final report.	90% of the OA, IG, and GAO findings have approved corrective action plans in place within 60 days from receipt of final report.	90% of the OA, IG, and GAO findings have approved corrective action plans in place within 60 days from receipt of final report.	90% of the OA, IG, and GAO findings have approved corrective action plans in place within 60 days from receipt of final report.	90% of OA, IG, and GAO findings have approved corrective action plans will in place within 60 days from receipt of final report as of 2004.
Cumulative number of advanced technologies deployed for routine use, which reduce operational security costs while maintaining or increasing security "effectiveness".	N/A	Establish a technology development and application program.	Demonstrate 2 new prototype technologies.	Deploy for routine use a cumulative total of 1 new technology which reduce operational security costs while	Deploy for routine use 1 new technology which will reduce operational security costs while maintaining or	Deploy for routine use 1 new technology which will reduce operational security costs while maintaining or	Deploy for routine use 1 new technology which will reduce operational security costs while maintaining or	Deploy a total of 3 new technologies which will reduce operations security costs while maintaining or

**Weapons Activities/  
Safeguards and Security**

Performance Indicators	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Endpoint Target Date
				maintaining or increasing security effectiveness.	increasing security effectiveness (Accumulating a total of 2)	increasing security effectiveness (Accumulating a total of 3)	increasing security effectiveness (Accumulating a total of 4)	increasing security effectiveness by 2009.

\*Status reporting for FY03 is in accordance to previously established performance indicators and reflects data available prior to yearend. Subsequent data for FY04-09 has been revised to emphasize quantitative performance targets.

## Detailed Justification

(dollars in thousands)

FY 2003	FY 2004	FY 2005
---------	---------	---------

<b>Physical Security .....</b>	<b>480,320</b>	<b>499,069</b>	<b>589,491</b>
--------------------------------	----------------	----------------	----------------

Physical Security constitutes the largest funding allocation of the NNSA security effort, integrating personnel, equipment and procedures to protect a facility’s physical assets and resources against theft, sabotage, diversion, or other criminal acts. Each NNSA site or facility has an approved Safeguards and Security Site Plan (SSSP) or a facility Master Security Plan detailing protection measures and resources needed to safeguard site security interests. The Physical Security program will: proceed with the five-year planning process for S&S initiatives addressing the redesign of equipment and systems; evaluate options for cost-effective approaches to security to balance technology and personnel usage; and, address protective force unscheduled overtime rates. The program will continue to evaluate options for cost-effective approaches to security, such as reducing overhead costs and identifying and employing improved security technologies through a modest Technology Applications effort. The technology applications endeavor will work with DOE laboratories and parallel government efforts to evaluate technologies that demonstrate promise to improve S&S effectiveness and realize operational efficiencies.

**Implementation of the new Design Basis Threat (DBT):** The FY 2005 S&S Budget request supports implementation of the revised DBT, which identifies added adversary threat capabilities. This increased threat potential is based upon the experience of the 9/11 terrorist attacks.

Implementation of new DBT protection measures will enhance security across the nation’s nuclear weapons complex and provide reasonable assurance for public health and safety. As a result of this revision, the Department of Energy has conducted and continues to update outyear assessments. Analyses have identified several critical S&S enhancements needed at NNSA sites to meet the new level of protection supported by the FY 2005 funding request. The FY 2005 S&S request includes \$89.6 million for DBT implementation. An additional \$18.3 million for DBT implementation is included within the Secure Transportation Assets (STA) FY 2005 request.

During FY 2005 particular emphasis will be placed on complex-wide physical security vulnerabilities. Measures will include hiring approximately 40 additional contractor armed protective force personnel, acquiring updated weapons and support equipment, and improving first responder training. Physical security systems will be upgraded, developed, and deployed to enhance detection and assessment, add delay and denial capabilities, and to improve perimeter defenses at several key sites. Improvements will be made in the development process for constructing and validating Vulnerability Assessments (VAs), conducting threat analysis to better assess today’s dynamic threat environment, and to effectively and efficiently implement new site DBT plans in the outyears.

No provision has yet been made to accommodate identified DBT funding requirements in the outyears although most DBT efforts will depend on outyear funding for continued application and completion.

(dollars in thousands)

FY 2003	FY 2004	FY 2005
---------	---------	---------

- **Protective Forces**..... **304,891**      **303,516**      **357,762**

These forces are a site’s primary front-line protection, consisting of armed and unarmed uniformed officers. Protective forces are an integral part of a site’s security posture, trained and practiced in various defensive tactics and procedures to protect site interests. In addition to providing daily site protection, these forces function as first responders, train to manage chemical and biological events, and provide special contingency response capabilities. Funding needs are determined by Site Safeguards and Security Plans (SSSP) protection strategies designed to ensure adequate protective force staffing levels, equipment, facilities, training, management and administrative support.

- **Physical Security Systems** ..... **56,557**      **56,195**      **81,032**

Physical Security Systems provide intrusion detection and assessment barriers, access controls, tamper protection monitoring, and performance testing and maintenance of security systems according to the approved site performance testing plan.

- **Transportation** ..... **407**      **474**      **489**

Includes all security-related transportation budget estimates for intra-site transfers of special nuclear materials (including safe havens), weapons, and other classified material that is not funded in the Secure Transportation Asset Account (STA).

- **Information Security** ..... **17,760**      **21,335**      **22,415**

Information Security provides protection for the classification and declassification of information, critical infrastructure, technical security countermeasures (TSCM), and operations security. Through periodic reviews of classified and sensitive information, Information Security ensures proper document marking, storage and protection of information.

- **Personnel Security**..... **18,590**      **22,124**      **21,822**

Personnel Security encompasses the processes for administrative determination that an individual is eligible for access to classified matter, or is eligible for access to, or control over, special nuclear material or nuclear weapons. Although the NNSA is responsible for ensuring that all personnel with access to NNSA sites (including current employees, new hires, and visitors) have been appropriately reviewed for access to classified and sensitive matter and materials, the actual NNSA security clearance reviews by the Federal Bureau of Investigation and/or the Office of Personnel Management are budgeted for in the Office of Security budget. Personnel Security represents all other functions of the personnel security process at the NNSA. In accordance with the NNSA Reengineering effort, the NNSA Service Center is assuming the lead for NNSA personnel security initiatives.

(dollars in thousands)

	FY 2003	FY 2004	FY 2005
--	---------	---------	---------

▪ **Materials Control and Accountability** ..... **22,565**      **25,875**      **26,017**

Materials Control and Accountability (MC&A) provides for continuous accountability of special nuclear materials in accordance with approved site security plans. MC&A functions as a primary deterrent against unauthorized use or diversion of special nuclear material. One of MC&A's principal uses is for deterrence and detection of malevolent insider actions.

▪ **Program Management** ..... **59,550**      **61,550**      **71,954**

Program Management provides direction, oversight and administration, planning, training, and development for security programs. In FY 2005, S&S funding is being managed by NNSA to implement high priority S&S projects that emerged post 9/11. Activities include the assessment of security implementation efforts through the review of updated security plans. Performance testing, review of vulnerability assessments, and revised threat and vulnerability analysis using the Iterative Site Analysis (ISA) process.

▪ **Technology Application, Physical Security** ..... **0**      **8,000**      **8,000**

This effort will begin to identify and deploy technology to address both short and long-term solutions to specific physical security needs at NNSA sites. The technology development efforts will focus on promising, emerging technologies that will provide operational efficiencies for the NNSA S&S program. In FY 2005, specific technologies will be selected for prototype and evaluation.

**Cyber Security** ..... **69,200**      **79,740**      **80,500**

Cyber Security implements policies and procedures for information protection and the design, development, integration, and deployment of all Cyber Security-related and infrastructure components of the Stockpile Stewardship Program and other activities at NNSA landlord sites. The Cyber Security Plan addresses the level of security required for information and equipment in the cyber structure. In FY 2004, efforts to identify emerging technology for further research and development will be supported, with the goal of deploying cost saving initiatives to further improve protection of our cyber assets. During FY 2005 the Cyber Security Program will continue to support the cyber security infrastructure within, and between, all NNSA federal offices and contractor locations. The infrastructure activities will upgrade elements to address the latest cyber threats from both external and inside attacks as well as, deploying the latest available cyber security technologies to meet the NNSA mission and performance requirements of the mission activities. The infrastructure activities include support for on-going operation of the unclassified cyber security, classified cyber security, communications security, and TEMPEST programs within each NNSA contractor location. During FY 2005 we will review and update, as needed, the NNSA Cyber Threat Assessment and NNSA cyber security implementation directives to reflect changes in threats, information technology and NNSA mission areas, especially nuclear weapons information activities. The ICSI program will document and initiate the FY 2005 Integrated Cyber Security Initiative Implementation Plan. The ICSI program will continue implementation of the enterprise secure network architecture, including deployment of enterprise-wide management of access controls for

(dollars in thousands)

FY 2003	FY 2004	FY 2005
---------	---------	---------

nuclear weapons information, and solutions for enterprise-wide user authentication, authorization, public key infrastructure, and other secure enterprise-wide services, such as, enterprise-wide secure e-mail, file sharing, and user collaboration tools.. The ICSI program will update identification of information assets and information flows of nuclear weapon information across the NNSA enterprise. The ICSI program will design and begin implementation of an enterprise-wide intrusion detection system.

▪ **Infrastructure Program..... 58,786 54,628 63,637**

The infrastructure program supports the cyber security operations and activities at NNSA landlord sites. The cyber security operations and activities provide a foundation that includes detection of intrusions (hackers and other forms of attacks), vulnerability scanning and correction within each site, implementation of Department and NNSA cyber security policies and practices, and continuous improvement of network and computing system cyber security technologies. The infrastructure program provides the personnel and cyber security technology (hardware and software) to maintain a cyber security posture that complies with all Department and NNSA policies while addressing the increasing number and complexity of cyber security threats.

▪ **Integrated Cyber Security..... 10,414 23,112 14,863**

The Integrated Cyber Security Initiative (ICSI) provides the definition, planning, and design efforts for the development and deployment of the NNSA enterprise-wide secure network (ESN). ICSI supports: (1) the ESN Test and Certification Laboratory for the evaluation and testing of ESN components in an isolated, non-production, controlled environment; (2) the Need-to-Know Project to define, demonstrate, test, and deploy software products to manage need-to-know access to all information and computing resources across the ESN; (3) the Authentication Project to define, demonstrate, test, and deploy software products to authenticate all NNSA users who participate in the ESN; (4) the Authorization Project to define, demonstrate, test, and deploy software products to manage user identities and authorizations to use information and computing resources across the ESN; (5) the Information Assets Project to identify the electronic information assets and flow of these assets across the ESN; (6) the Enterprise Directory Services Project to define, demonstrate, test, and deploy software products that provide a enterprise-wide directory repository for information related to the management of the ESN and information assets; (7) the Enterprise Lexicon Project to define and disseminate standard term, definitions, and meta-date for all ESN information assets and activities; (8) the Enterprise Intrusion Detection Project to define, develop, demonstrate, test, and deploy state-of-the-art systems for the detection of anomalous activities, such as hackers and attempts at unauthorized penetration, throughout the ESN; (9) the Enterprise System Management Project to define, develop, demonstrate, test, and deploy software products for the management and support of on-going ESN operation and user activities; and (10) the NNSA Cyber Security Education and Awareness Project to develop, maintain, and deliver continuously updated cyber security information to all NNSA and NNSA contractor personnel.

▪ **Technology Application, Cyber Security ..... 0 2,000 2,000**

(dollars in thousands)

FY 2003	FY 2004	FY 2005
---------	---------	---------

Technology Development will develop and deploy technology to address both short and long-term solutions to specific cyber security needs at NNSA sites. The research and technology development efforts will focus on emerging technologies that will provide cost-effective improvements to the NNSA S&S program. In FY 2005, specific technologies will be identified for further research and technology development.

**Construction ..... 8,641 3,661 37,000**

The Construction program includes the cost of new and ongoing line-item construction projects that support the safeguards and security mission within the nuclear weapons complex. FY 2005 funding is requested for line item 05-D-170, Project Engineering and Design, to initiate design for two new subprojects: Nuclear Material Safeguards and Security Upgrades (NMSSUP), Phase II to upgrade and replace the existing physical security system at the Los Alamos National Laboratory; and the Y-12 Security Improvements Project (SIP) to provide new detection, assessment, delay and response capability at the Y-12 National Security Complex. In addition, funding is requested for 05-D-701, Security Perimeter Project, at the Los Alamos National Laboratory to provide the ability to isolate the core area of the laboratory and protect vital national security assets.

FY 2004 represents the last year of funding for 99-D-132, Nuclear Material Safeguards and Security Upgrades (NMSSUP), Phase I.

**Total, Safeguards and Security ..... 558,161 582,470 706,991**

## Explanation of Funding Changes

FY 2005 vs.  
FY 2004  
(\$000)

▪ **Physical Security**

**Protective Forces:** As part of the NNSA’s continuing effort to strengthen first responder capability, protective force funding is increased to sustain newly hired staff, equipping and training protective force officers, and to replace aging equipment..... + 54,246

**Physical Security Systems:** Major upgrades to existing physical security systems or the development and acquisition of newer systems is being pursued. FY 2005 funding provides for systems maintenance, modifications, and improvements to ensure needed reliability and dependability..... + 24,837

**Transportation:** A modest increase in transportation funding is added to facilitate the movement and relocation of special nuclear material inventories..... + 15

**Information Security:** The increase in funding is to ensure the continued protection of classified information and sensitive information holdings. The increase allows for the continued declassification of information no longer requiring protection ..... + 1,080

**Personnel Security:** Reduction in funding is anticipated as clearance backlogs are reduced ..... - 302

**Materials Control and Accountability:** Increases in funding for this critical S&S function are based on the stabilized maintenance of special nuclear materials inventories and materials measurement procedures ..... + 142

**Program Management:** The increase is needed to meet security management requirements for high priority S&S projects as they are initiated, tested, and implemented to meet post 9/11 requirements. .... + 10,404

---

**Total, Physical Security** ..... + 90,422

FY 2005 vs. FY 2004 (\$000)
-----------------------------------

**Cyber Security**

<ul style="list-style-type: none"> <li>▪ <b>Infrastructure Program:</b> The increase is needed to address cyber security requirements begun in the aftermath of the September 11, 2001 terrorist attack. The additional funding will provide improvements in NNSA site Cyber Security infrastructures, such as firewalls and media-less workstations to address increased and changing Cyber threats, improves performance of Cyber Security components, such as intrusion detection systems, applies graded protection to nuclear weapon data processed on advanced information technology systems, and supports continued operation of the unclassified cyber security, classified cyber security, communications security, and TEMPEST programs within each NNSA contractor location.....</li> <li>▪ <b>Integrated Cyber Security:</b> The decrease reflects the transition of the NNSA enterprise-wide network efforts from definition and design to deployment.....</li> </ul>	<table border="0"> <tr> <td style="border-top: 1px solid black;">+ 9,009</td> </tr> <tr> <td style="border-top: 1px solid black;">- 8,249</td> </tr> <tr> <td style="border-top: 1px solid black; border-bottom: 3px double black;">+ 760</td> </tr> </table>	+ 9,009	- 8,249	+ 760
+ 9,009				
- 8,249				
+ 760				
<b>Total, Cyber Security .....</b>	<b>+ 760</b>			

**Construction**

<p>The increase reflects initiation of two new design subprojects in line item 05-D-170, Project Engineering and Design (Nuclear Material Safeguards and Security Upgrades, Phase II and Y-12 Security Improvements Project) and a new construction project, 05-D-701, Security Perimeter Project, at the Los Alamos National Laboratory. The increase for these efforts is slightly offset by a decrease due to completion of project 99-D-132 in FY 2004 .....</p>	<table border="0"> <tr> <td style="border-top: 1px solid black;">+ 33,339</td> </tr> <tr> <td style="border-top: 1px solid black; border-bottom: 3px double black;">+ 124,521</td> </tr> </table>	+ 33,339	+ 124,521
+ 33,339			
+ 124,521			
<b>Total Funding Change, Safeguards and Security .....</b>	<b>+ 124,521</b>		

## Capital Operating Expenses and Construction Summary

### Capital Operating Expenses

(Dollars in thousands)

	FY 2003	FY 2004	FY 2005	\$ Change	% Change
General Plant Projects.....	10,754	11,077	11,409	+ 332	1%
Capital Equipment .....	6,859	7,065	7,277	+ 212	1%
<b>Total, Capital Operating Expenses .....</b>	<b>17,613</b>	<b>18,142</b>	<b>18,686</b>	<b>+ 544</b>	<b>1%</b>

### Construction Projects

(Dollars in thousands)

	Total Estimated Cost (TEC)	Prior-Year Appropriations	FY 2003	FY 2004	FY 2005	Unappropriated Balance
05-D-170 Project Engineering and Design, (PED), LANL, Y-12.....	88,000	0	0	0	17,000	71,000
05-D-701, Security Perimeter Project, LANL.....	20,000	0	0	0	20,000	0
99-D-132, Nuclear Materials Safeguards and Security Upgrades Project, Phase I, LANL.....	60,862	48,650	8,641	3,661	0	0
<b>Total, Construction .....</b>			<b>8,641</b>	<b>3,661</b>	<b>37,000</b>	



## 05-D-170, Project Engineering and Design (PED) – Safeguards & Security, Various Locations

- The TEC, obligations and costs reflected are the current estimate of the cost and funding profile required for the design of the two subprojects in this line item. The Security Improvements Project at the Y-12 National Security Complex addresses a recently identified deficiency, and as a result, the full outyear funding has not yet been identified in NNSA’s Future-Years Nuclear Security Program (FYNSP). The appropriation column reflects the outyear funding currently in FYNSP.

### 1. Construction Schedule History

	Fiscal Quarter				Total Estimated Cost (\$000) <sup>a</sup>
	A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete	

FY 2005 Budget Request (A-E and technical design only).....

2Q 2005	1Q 2007	2Q 2007	1Q 2012	88,000
---------	---------	---------	---------	--------

### 2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
<b>Design</b>			
2005	17,000	17,000	17,000
2006	43,000	71,000	55,000
2007	0	0	16,000

### 3. Project Description, Justification and Scope

This project provides for Architect-Engineering (A-E) services (Title I and Title II) for Safeguards and Security (S&S) 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.

<sup>a</sup> The TEC estimate is for design only for the subprojects currently included in this data sheet.

New FY 2005 PED design projects are described below. While not anticipated, some changes may occur due to continuing conceptual design studies or developments occurring after submission of this data sheet. These changes will be reflected in subsequent years. Preliminary estimates for the cost of Title I and II design and engineering efforts for each subproject are provided, as well as very preliminary estimates of the Total Estimated Cost (including physical construction) of each subproject. The final Total Estimated Cost and Total Project Cost for each project described below will be validated and the Performance Baseline will be established at Critical Decision 2 following completion of preliminary design.

### **FY 2005 Proposed Design Projects**

#### **05-01: Nuclear Materials Safeguards and Security Upgrades (NMSSUP) Phase II, LANL**

Fiscal Quarter				Total Estimated Cost (Design Only) (\$000)	Preliminary Full Total Estimated Cost Projection (\$000)
A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
2Q 2005	1Q 2007	2Q 2007	1Q 2012	45,000	125,000-228,000

Fiscal Year	Appropriations	Obligations	Costs
2005	10,000	10,000	10,000
2006	35,000	35,000	25,000
2007	0	0	10,000

This subproject provides for preliminary and final design of the proposed Nuclear Materials Safeguards and Security Upgrades Project (NMSSUP) Phase II. The objective of the NMSSUP is to upgrade and replace the existing physical security system at the Los Alamos National Laboratory in order to address the new protection strategy requirements and deteriorating physical security infrastructure.

NMSSUP Phase II will address the security system at TA-55, the Laboratory's key nuclear facility that houses and processes Category I quantities of Special Nuclear Materials. It is also the proposed site for consolidation of the nuclear missions for the laboratory, including the Chemistry and Metallurgy Facility Replacement Project.

Phase II includes the upgrade or replacement of the existing exterior intrusion detection and assessment system and installation of interior intrusion detection, assessment, delay, access control and security communications equipment for TA-55. Access control facilities for the Protected Area and Material Access Area will be replaced or upgraded. These systems will be integrated with the Argus security control system that has been installed under NMSSUP Phase I.

**05-02, Security Improvements Project, Y-12**

Fiscal Quarter				Total Estimated Cost (Design Only (\$000))	Preliminary Full Total Estimated Cost Projection (\$000)
A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
4Q 2005	1Q 2007	3Q 2007	4Q 2010	43,000 <sup>a</sup>	200,000-300,000

Fiscal Year	Appropriations	Obligations	Costs
2005	7,000	7,000	7,000
2006	8,000 <sup>a</sup>	36,000	30,000
2007	0	0	6,000

This subproject provides for preliminary and final (Title I and Title II) design for the proposed Security Improvements Project at the Y-12 National Security Complex. The project will provide new detection, assessment, delay, and response capability for the Protected Area security perimeter of the Y-12 NSC plant.

The current security perimeter enclosing the Y-12 Protected Area, the PIDAS, was designed in 1984 and constructed between 1986 and 1990. This project will replace the existing PIDAS system with a modern, more robust design incorporating proven state-of-the-art security components and design features.

This project will reduce the 13,200 ft. of existing PIDAS system at Y-12 to approximately 6,000 ft. The project will utilize the existing PIDAS bed for the replacement to the extent possible and will reduce the area within the Protected Area of the plant by 50% to 60%. The project will interface with the Highly Enriched Uranium Materials Facility project and other Y-12 modernization activities defined in the Y-12 NSC 10 year site plan.

<sup>a</sup> The TEC, obligations and costs reflected are the current estimate of the cost and funding profile required for the design of this project. Full outyear funding has not yet been identified in NNSA's FYNSP. The appropriation column reflects the outyear funding currently in FYNSP.

## 4. Details of Cost Estimate

(dollars in thousands)

	Current Estimate	Previous Estimate
Design Phase		
Preliminary and Final Design costs (Design Drawings and Specifications) .....	73,616	N/A
Design Management costs (3.9% of TEC) .....	3,419	N/A
Project Management costs (12.5% of TEC) .....	10,965	N/A
Total, Design Costs (100% of TEC) .....	88,000	N/A
Total, Line Item Costs (TEC, Design Only) .....	88,000	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 Costs						
Facility Costs						
Project Engineering and Design .....	0	0	0	17,000	71,000	88,000
Total, Line Item TEC .....	0	0	0	17,000	71,000	88,000
Other Project Costs						
Conceptual design cost .....	0	400	2,875	100	0	3,375
Other project-related costs .....	0	1,500	8,025	6,600	12,500	28,625
Total Other Project Costs .....	0	1,900	10,900	6,700	12,500	32,000
Total Project Cost (TPC) .....	0	1,900	10,900	23,700	83,500	120,000

## 05-D-701, Security Perimeter, Los Alamos National Laboratory, Los Alamos, New Mexico

- This project will utilize a design-build acquisition strategy which offers many benefits for a project of this type, including a single source for construction activities, cost control and accountability, and may be accommodated under the existing DOE Order for construction project management. The project is requesting full design and construction funding in FY 2005 consistent with this acquisition strategy and in order to minimize project risk.
- This project is still in the Planning Phase. As a result, the cost and schedule are preliminary estimates and are subject to change until the Performance Baseline is approved by the Acquisition Executive (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 2005 Budget Request <i>(Preliminary Estimate) .....</i>	1Q 2005	1Q 2006	1Q 2005	3Q 2006	20,000	24,024

### 2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
Design/Construction			
2005	20,000	20,000	13,000
2006	0	0	7,000

### **3. Project Description, Justification and Scope**

#### **Project Description**

This project provides Los Alamos National Laboratory (LANL) the ability to isolate the core area of the site from unscreened vehicle access in order to protect vital national security assets, Government property, and human life from possible terrorist activity. This project will provide the capability to enact a graded closure of the core area of the site depending on the NNSA SECON levels in effect at the time. During elevated threat conditions, all but emergency and designated Government vehicles may be prevented from entering the core area of the site. Staffed access control stations with vehicle queuing approaches, necessary utilities, and security equipment will be required to screen vehicles and provide the capability of closing vehicle access if required.

This project includes the installation of two access control stations at key locations, security upgrades to existing stations, selected road closures, and selected road modifications within the LANL site. Cooperation and negotiation with Los Alamos County will be required to re-obtain a small portion of the Los Alamos County landfill that sits on land leased from DOE. The DOE contract with LA County was previously modified for this potential action.

#### **Project Justification**

As a result of the events of September 11, 2001, the nature of the terrorist threat has changed significantly in terms of the potential magnitude of the attack as well as the terrorists' motivations, targets, and methods. The most recent attacks appeared to be intent on maximizing disruption, destruction and casualties, and include the willingness to conduct suicide attacks. In recognition of this increased threat, LANL security and management have determined that there is a critical need to upgrade the physical protection around critical assets at the core of the site.

LANL is one of the few DOE complex sites where the general public has access to the core technical area and has public roads that pass in close proximity to Category I or II facilities. Temporary measures have recently been implemented to help protect particular Laboratory assets, but long-term measures are required to provide an additional level of protection to the core of the Laboratory which houses vital national assets, government property, and critical scientific and support staff. Unauthorized (unscreened) access in the future must be restricted and controlled to minimize the possibility of a terrorist threat being introduced into the core area.

The long-term solution to security concerns is to provide an integrated site access control system that will provide security for the core areas, SNM, and NNSA identified critical mission capabilities. This integrated system will establish a security perimeter around the core area of the Laboratory, create significantly better stand-off protection, allow the immediate implementation of higher SECON levels, improve the ability to maintain higher SECON levels, improve the effectiveness of the SECON screening process, and reduce the long-term SECON costs by eliminating the inefficient SECON configuration currently in place. It is noted that security goals cannot be accomplished without some improvements to the road system.

## **Project Scope**

This project includes the following key elements:

### **Access Control Stations**

Primary vehicle access into the core area of LANL will occur at the access control stations. Two new stations will be constructed, and existing stations will be modified to accomplish this goal. These stations will control access, provide areas for more in depth screening or searches, provide space for queuing of vehicles into and out of the stations, provide a single point for isolation of the site, and act as a primary interface area with the general public. The capability to process visitors and the general public, in limited size vehicles, will be accommodated at the new access control stations. New access control stations will be installed off of East Jemez Road and on West Jemez Road at the “back gate” area near NM-4. The Pajarito Road access control stations installed under an earlier GP project will be modified to provide enhanced security, isolation, and access control capabilities.

### **Road Closures**

In order to assure that vehicle traffic flows through the access control stations, Diamond Drive must be permanently closed to unscreened vehicle traffic by physical separation of the road. West Jemez Road (NM 501) will also be closed to unscreened vehicle traffic. Vehicle barriers will be provided at specific points to protect critical areas. West Road and the Ski Hill Road will be isolated from West Jemez Road by vehicle gates and barriers. The commuter bus area and existing parking lots must be accommodated. Emergency vehicle access will be maintained where required to assure response times remain low to assure life and property saving actions can be taken in a timely manner.

### **Ski Hill Road**

Approximately 1½ miles of new road must be constructed to connect West Road and the existing Ski Hill Road to maintain public access and to provide an alternative evacuation route. An existing but abandoned road will be modified for this purpose. Vehicle barriers and fence will be used to prevent vehicle access onto West Jemez Road. The existing Ski Hill Road and West Road will be isolated from West Jemez Road. Gates will be installed at two locations for this purpose and for future emergency access or egress routes.

### **Relocation and Demolition**

Minor relocation and demolition of existing structures, approximately 175 parking spaces, a bus lot, an old radio shop building, and utilities will occur but will depend on the exact routing of roads and structures. Final routing of the roads will not occur until detailed design, but the general route is defined.

These staffed access control stations will allow closure of several temporary guard posts currently located within the TA-3 area. Diamond Drive must be permanently closed to unscreened traffic just south of the existing bridge across Los Alamos Canyon. West Jemez Road must be permanently closed to unscreened traffic. The east access control station road will require some improvements at the intersections with the north bypass road and with Diamond Drive. The west access control station road will require some improvements on West Jemez Road. Vehicle access from public parking lots and

roads will be blocked by the use of barriers and road closures in order to prevent vehicles from bypassing the access control stations.

**Project Milestones:**

FY 2005:	Establish Performance Baseline (Critical Decision 2/3)	1Q
FY 2006:	Completion of Construction	3Q
FY 2007:	Project Complete (Critical Decision 4)	1Q

**4. Details of Cost Estimate**

	(dollars in thousands)	
	Current Estimate	Previous Estimate
Design Phase		
Preliminary and Final Design costs (Design Drawings and Specifications) .....	1,604	N/A
Design Management costs (1.6% of TEC) .....	320	N/A
Project Management costs (1.2% of TEC) .....	240	N/A
Total, Design Costs (10.8% of TEC) .....	2,164	N/A
Construction Phase		
Improvements to Land (roads, bridges, drainage) .....	4,016	N/A
Buildings .....	2,874	N/A
Special Equipment .....	1,856	
Other Structures (Radio Shop) .....	172	N/A
Utilities .....	1,265	N/A
Standard Equipment .....	1,394	N/A
Removal less salvage .....	115	N/A
Inspection, design and project liaison, testing, checkout and acceptance (2.8% of TEC) .....	555	N/A
Construction Management (5.5% of TEC) .....	1,105	N/A
Project Management (4.3% of TEC) .....	858	N/A
Total, Construction Costs (71.1% of TEC) .....	14,210	N/A
Contingencies		
Design Phase (1.6% of TEC) .....	324	N/A
Construction Phase (16.5% of TEC) .....	3,302	N/A
Total, Contingencies (18.1% of TEC) .....	3,626	N/A
Total, Line Item Costs (TEC) .....	20,000	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 the simultaneous CD-2 and 3, 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 utilities will be performed by the site services contractor or by BOA contractors under fixed price contracts. The characterization and demolition work will be accomplished under a competitive solicitation from pre-qualified contractors.

## 6. Schedule of Project Funding <sup>a</sup>

(dollars in thousands)

	Prior Years	FY 2003	FY 2004	FY 2005	Outyears	Total
Project Costs						
Facility Costs						
Design .....	0	0	0	1,604	0	1,604
Construction .....	0	0	0	11,396	7,000	18,396
Total, Line Item TEC .....	0	0	0	13,000	7,000	20,000
Other Project Costs						
Conceptual design cost .....	0	1,400	500	0	0	1,900
NEPA documentation costs .....	0	350	0	45	0	395
Other ES&H Costs .....	0	40	0	47	5	92
Other project-related costs .....	0	710	0	425	502	1,637
Total Other Project Costs .....	0	2,500	500	517	507	4,024
Total Project Cost (TPC) .....	0	2,500	500	13,517	7,507	24,024

<sup>a</sup> 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.

## 7. Related Annual Funding Requirements

(FY 2005 dollars in thousands)

	Current Estimate	Previous Estimate
Annual facility operating costs <sup>a</sup> .....	80	N/A
Annual facility maintenance/repair costs <sup>b</sup> .....	400	N/A
Programmatic operating expenses directly related to this facility <sup>c</sup> .....	4,400	N/A
Utility costs.....	20	N/A
Total related annual funding (operating from FY 2006 through FY 2026) .....	4,900	N/A

<sup>a</sup> The cost of operations are based on historical data and averages \$4/sf/year for Office Buildings.

<sup>b</sup> Based on projected annual costs for LANL site services subcontractor as derived from historical maintenance and repair costs for LANL facilities and road systems. Includes snow plowing and road maintenance.

<sup>c</sup> Annual programmatic operating expenses are estimated based on representative operating expenses of 6 to 14 security people per shift, 24 hours per day, 365 days per year. The majority of this funding is expected to come from DOE. LANL has evaluated staffing methods and consequently this option reduces operating costs over the current temporary guard post arraignment. 6 Security personnel during normal hours, 13 during peak morning and noon traffic hours.