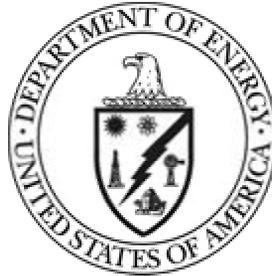


**Department of Energy
FY 2005 Congressional Budget
Request**



**National Nuclear Security Administration
Office of the Administrator
Weapons Activities
Defense Nuclear Nonproliferation
Naval Reactors**

Department of Energy FY 2005 Congressional Budget Request



National Nuclear Security Administration Office of the Administrator Weapons Activities Defense Nuclear Nonproliferation Naval Reactors



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Volume 1

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The Department of Energy's FY 2005 Congressional Budget justification is available on the Office of Management, Budget and Evaluation/CFO homepage at <http://www.mbe.doe.gov/budget/>

Department of Energy Appropriation Account Summary

(dollars in thousands -OMB Scoring)

| | FY 2003 Comparable Approp | FY 2004 Comparable Approp | FY 2005 Congress Request | FY 2005 vs. FY 2004 | |
|---|---------------------------------|---------------------------------|--------------------------------|---------------------|---------------|
| Energy and Water Development | | | | | |
| Energy Programs | | | | | |
| Energy supply..... | 730,215 | 788,620 | 835,266 | +46,646 | +5.9% |
| Non-Defense site acceleration completion..... | 156,129 | 162,411 | 151,850 | -10,561 | -6.5% |
| Uranium enrichment D&D fund..... | 320,563 | 414,027 | 500,200 | +86,173 | +20.8% |
| Non-Defense environmental services..... | 161,852 | 306,439 | 291,296 | -15,143 | -4.9% |
| Science..... | 3,322,244 | 3,500,169 | 3,431,718 | -68,451 | -2.0% |
| Nuclear waste disposal..... | 144,058 | 188,879 | 749,000 | +560,121 | +296.6% |
| Departmental administration..... | 89,219 | 93,720 | 122,611 | +28,891 | +30.8% |
| Inspector general..... | 37,426 | 39,229 | 41,508 | +2,279 | +5.8% |
| Total, Energy Programs..... | 4,961,706 | 5,493,494 | 6,123,449 | +629,955 | +11.5% |
| Atomic Energy Defense Activities | | | | | |
| National nuclear security administration: | | | | | |
| Weapons activities..... | 5,961,345 | 6,233,503 | 6,568,453 | +334,950 | +5.4% |
| Defense nuclear nonproliferation..... | 1,223,453 | 1,334,040 | 1,348,647 | +14,607 | +1.1% |
| Naval reactors..... | 702,196 | 761,878 | 797,900 | +36,022 | +4.7% |
| Office of the administrator..... | 330,314 | 336,826 | 333,700 | -3,126 | -0.9% |
| Total, National nuclear security administration..... | 8,217,308 | 8,666,247 | 9,048,700 | +382,453 | +4.4% |
| Environmental and other defense activities: | | | | | |
| Defense site acceleration completion..... | 5,496,409 | 5,576,760 | 5,970,837 | +394,077 | +7.1% |
| Defense environmental services..... | 1,105,778 | 1,012,610 | 982,470 | -30,140 | -3.0% |
| Other defense activities..... | 637,125 | 670,083 | 663,636 | -6,447 | -1.0% |
| Defense nuclear waste disposal..... | 312,952 | 387,699 | 131,000 | -256,699 | -66.2% |
| Total, Environmental & other defense activities..... | 7,552,264 | 7,647,152 | 7,747,943 | +100,791 | +1.3% |
| Total, Atomic Energy Defense Activities..... | 15,769,572 | 16,313,399 | 16,796,643 | +483,244 | +3.0% |
| Defense EM privatization (rescission)..... | — | -15,329 | — | +15,329 | 100% |
| Power marketing administrations: | | | | | |
| Southeastern power administration..... | 4,505 | 5,070 | 5,200 | +130 | +2.6% |
| Southwestern power administration..... | 27,200 | 28,431 | 29,352 | +921 | +3.2% |
| Western area power administration..... | 167,760 | 176,900 | 173,100 | -3,800 | -2.1% |
| Falcon & Amistad operating & maintenance fund..... | 2,716 | 2,625 | 2,827 | +202 | +7.7% |
| Total, Power marketing administrations..... | 202,181 | 213,026 | 210,479 | -2,547 | -1.2% |
| Federal energy regulatory commission..... | — | — | — | — | — |
| Subtotal, Energy and Water Development | 20,933,459 | 22,004,590 | 23,130,571 | +1,125,981 | +5.1% |
| Uranium enrichment D&D fund discretionary payments... | -432,731 | -449,333 | -463,000 | -13,667 | -3.0% |
| Excess fees and recoveries, FERC..... | -22,669 | -18,000 | -15,000 | +3,000 | +16.7% |
| Colorado River Basins..... | -22,000 | -22,000 | -23,000 | -1,000 | -4.5% |
| Total, Energy and Water Development..... | 20,456,059 | 21,515,257 | 22,629,571 | +1,114,314 | +5.2% |

Department of Energy Appropriation Account Summary

(dollars in thousands -OMB Scoring)

| | FY 2003 Comparable Approp | FY 2004 Comparable Approp | FY 2005 Congress Request | FY 2005 vs. FY 2004 | |
|--|---------------------------------|---------------------------------|--------------------------------|---------------------|--------------|
| Interior and Related Agencies | | | | | |
| Fossil energy research and development..... | 611,149 | 672,771 | 635,799 | -36,972 | -5.5% |
| Naval petroleum and oil shale reserves..... | 17,715 | 17,995 | 20,000 | +2,005 | +11.1% |
| Elk Hills school lands fund..... | 36,000 | 36,000 | 36,000 | — | — |
| Energy conservation..... | 880,176 | 877,984 | 875,933 | -2,051 | -0.2% |
| Economic regulation..... | 1,477 | 1,034 | — | -1,034 | -100.0% |
| Strategic petroleum reserve..... | 171,732 | 170,948 | 172,100 | +1,152 | +0.7% |
| Strategic petroleum account..... | 1,955 | — | — | — | — |
| Northeast home heating oil reserve..... | 5,961 | 4,939 | 5,000 | +61 | +1.2% |
| Energy information administration..... | 80,087 | 81,100 | 85,000 | +3,900 | +4.8% |
| Subtotal, Interior Accounts..... | 1,806,252 | 1,862,771 | 1,829,832 | -32,939 | -1.8% |
| Clean coal technology..... | -47,000 | -98,000 | -140,000 | -42,000 | -42.9% |
| Total, Interior and Related Agencies..... | 1,759,252 | 1,764,771 | 1,689,832 | -74,939 | -4.2% |
| Total, Discretionary Funding..... | 22,215,311 | 23,280,028 | 24,319,403 | +1,039,375 | +4.5% |
| Yucca mountain--mandatory collection to offset discretionary funding..... | — | — | -749,000 | -749,000 | n/a |
| Total, Discretionary Funding..... | 22,215,311 | 23,280,028 | 23,570,403 | +290,375 | +1.2% |

National Nuclear Security Administration

Overview

Appropriation and Program Summary

(dollars in millions)

| | FY 2003 Comparable Appropriation | FY 2004 Original Appropriation | FY 2004 Adjustments | FY 2004 Comparable Appropriation | FY 2005 Request |
|--|--|--------------------------------------|------------------------|--|--------------------|
| Office of the Administrator | 330 | 340 | - 3 | 337 | 334 |
| Weapons Activities..... | 5,961 | 6,273 | - 39 | 6,234 | 6,568 |
| Defense Nuclear Nonproliferation..... | 1,224 | 1,328 | + 6 | 1,334 | 1,349 |
| Naval Reactors..... | 702 | 766 | - 4 | 762 | 798 |
| Total, NNSA | 8,217 | 8,707 | - 40 | 8,667 | 9,049 |

The NNSA budget justification contains the required three years of budget and performance information, as well as similar information for five years as required by Sec. 3253 of P.L. 106-065. This section, entitled *Future-Years Nuclear Security Program*, requires the Administrator to submit to Congress each year at the time the budget is submitted the estimated expenditures necessary to support the programs, projects and activities of the NNSA for a five fiscal year period, in a level of detail comparable to that contained in the budget. Since the inception of NNSA, the Future Years Nuclear Security Program (FYNSP) has been provided as a separate document supporting the budget request. Starting with this budget, NNSA will include this outyear budget and performance information as part of a fully integrated budget submission.

Future Years Nuclear Security Program (FYNSP) Schedule

(dollars in millions)

| | FY 2005 | FY 2006 | FY 2007 | FY 2008 | FY 2009 | Total |
|----------------------------------|--------------|--------------|--------------|--------------|---------------|---------------|
| Office of the Administrator..... | 334 | 340 | 347 | 353 | 360 | 1,734 |
| Weapons Activities | 6,568 | 6,881 | 7,216 | 7,353 | 7,492 | 35,510 |
| Defense Nuclear Nonproliferation | 1,349 | 1,381 | 1,410 | 1,441 | 1,465 | 7,046 |
| Naval Reactors | 798 | 803 | 818 | 834 | 850 | 4,103 |
| Total, NNSA | 9,049 | 9,405 | 9,791 | 9,981 | 10,167 | 48,393 |

FY 2003 Execution

(dollars in millions)

| | FY 2003 Approp | PY Balance/ General Reduction | Rescission | Supple- mental | Reprogram- mings | Comp Adjust- ments | Current FY 2003 Comp |
|---|-------------------|--|-------------|-------------------|---------------------|--------------------------|----------------------------|
| Office of the Administrator | 331 | 0 | - 2 | 0 | 6 | - 5 | 330 |
| Weapons Activities | 6,093 | - 139 | - 39 | 67 | 0 | - 21 | 5,961 |
| Defense Nuclear Nonproliferation | 1,189 | - 75 | - 7 | 148 | - 33 | 2 | 1,224 |
| Naval Reactors | 707 | 0 | - 5 | 0 | 0 | 0 | 702 |
| Total, NNSA | 8,320 | - 214 | - 53 | 215 | - 27 | - 24 | 8,217 |

FY 2004 Appropriation

(dollars in millions)

| | FY 2004 Enacted Approp | PY Balance/ General Reduction | Pending 0.59% Rescission | Supple- mental | Reappropri- ation and Reprogram- mings | Comp Adjust- ments | Current FY 2004 Comp |
|---|------------------------------|--|--------------------------------|-------------------|---|--------------------------|----------------------------|
| Office of the Administrator | 340 | 0 | - 2 | 0 | 0 | - 1 | 337 |
| Weapons Activities | 6,367 | - 95 | - 37 | 0 | -2 | 0 | 6,234 |
| Defense Nuclear Nonproliferation | 1,373 | - 45 | - 8 | 0 | +12 | + 2 | 1,334 |
| Naval Reactors | 768 | - 2 | - 4 | 0 | 0 | 0 | 762 |
| Total, NNSA | 8,848 | - 142 | - 51 | 0 | +10 | + 1 | 8,667 |

Preface

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

The NNSA is funded through four appropriations. Within the Weapons Activities appropriation, NNSA has one program, Weapons Activities, and 13 subprograms. The Defense Nuclear Nonproliferation appropriation has one program, Defense Nuclear Nonproliferation, with 7 subprograms. The Naval Reactors appropriation supports all activities for that program, with no subprograms. The Office of the Administrator appropriation provides support for nearly all Federal NNSA employees in Headquarters and the field elements, and has no subprograms.

This overview will describe Strategic Context, Mission, Benefits, Strategic Goals, and Funding by General Goal. These items together put the appropriation in perspective. It will also address the Program Assessment Rating Tool (PART) assessments for NNSA subprograms, and Significant Program Shifts.

Strategic Context

Following publication of the Administration's National Energy Policy, the Department developed a Strategic Plan that defines its mission, four strategic goals for accomplishing that mission, and seven general goals to support the strategic goals. Each organization has developed program goals and quantifiable annual targets to support the goals. Thus, the "goal cascade" for NNSA is as follows:

Department Mission → Strategic Goal (25 years) → General Goal (10-15 years) → Program Goal (5-10 years)

The goal cascade links major activities for each NNSA program to successive goals, and ultimately to DOE's mission. This helps ensure that the Department focuses its resources on fulfilling its mission. The cascade also facilitates linkage of resources to the goals in the budget request, and is used as the framework for reporting progress against performance metrics. Thus, the cascade approach facilitates integration of budget and performance information support of the Government Performance and Results Act (GPRA) and the President's Management Agenda. A diagram showing the linkages of NNSA's goals, programs, subprograms and activities is included at the end of this section.

To provide a concrete link between budget, performance and reporting, the Department developed a "GPRA Unit" concept, with an associated numbering scheme for DOE-wide integration of program goals and for tracking performance reporting. Within DOE and NNSA, a GPRA Unit defines a major activity or group of activities that support the core mission and align resources with goals. Each NNSA GPRA Unit completes a Program Assessment Rating Tool (PART) self-assessment annually as part of NNSA's Planning, Programming Budgeting and Evaluation (PPBE) process. In addition, to date 7 NNSA GPRA Units have completed PARTs for OMB Review.

Mission

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

Program Benefits

As the post-Cold War era evolves, the NNSA is managing the Nation's nuclear weapons and ensuring that they are capable of responding to the challenges of the 21st century security environment. The DOE, through the NNSA, works to assure that the nation's nuclear stockpile remains safe, secure, reliable, and ready, and to extend the life of that stockpile in support of Department of Defense (DoD) military requirements. Our nation will continue to benefit from

the security that results from an effective nuclear deterrent, with confidence that our nation is ready and prepared to respond rapidly and effectively if required.

Stockpile stewardship activities are carried out without the use of underground nuclear testing, continuing the moratorium initiated by the U.S. in the early 1990's. The NNSA maintains a robust infrastructure of people, programs, and facilities to provide specialized scientific and technical capability for stewardship of the nuclear weapons stockpile. The NNSA also works in partnership with the Department of Defense (DoD) to meet their needs for reliable and militarily effective nuclear propulsion for the U.S. Navy.

The nation continues to benefit from advances in science, technology and engineering fostered by the national security program activities, including cutting edge research and development carried out in partnership with many of the Nation's colleges, universities, small businesses and minority educational institutions. The NNSA programs, including three national laboratories, the Nevada Test Site, and research, development and production facilities across the U.S. employ nearly 2,400 Federal employees and approximately 35,000 contractor employees to carry out this work.

In June 2002, the United States championed a new, comprehensive nonproliferation effort known as the Global Partnership. World leaders committed to raise up to \$20 billion over 10 years to fund nonproliferation programs in the former Soviet Union. The NNSA contributes directly to this effort by carrying out programs with the international community to reduce and prevent the proliferation of nuclear weapons, materials and expertise. The security of our nation and the world are enhanced by NNSA's ongoing work to provide security upgrades for military and civilian nuclear sites and enhanced border security in Russia and the Former Soviet Union. We are reducing the world's stocks of dangerous materials such as plutonium through NNSA-sponsored Fissile Materials Disposition programs in the U.S. and Russia as well as through elimination of Russian plutonium production.

The Nation benefits from NNSA's work in partnership with the Department of Homeland Security to develop and demonstrate new detection technologies to improve security of our cities and ports. Perhaps the most tangible benefits to the Nation following the 9/11 terrorist attacks are the "first responder teams" of highly specialized scientists and technical personnel from the NNSA sites who are deployed across the nation to address threats of weapons of mass destruction. These teams work under the direction of the Department of Homeland Security and the Federal Bureau of Investigation to respond to nuclear emergencies in the U. S. and around the world. The teams adapt to changing technologies and evolving challenges associated with combating terrorism and accident/incident scenarios in today's world. Outstanding performance in training, exercises, and real world events continues to justify NNSA's reputation as the one of the world's premier nuclear and radiological technical emergency response capabilities.

Strategic Goal

The Department's Strategic Plan identifies four strategic goals – one each for defense, energy, science and environmental aspects of the mission -- plus seven general goals that link to the strategic goals. All of the NNSA mission is encompassed under the Defense Strategic goal:

To protect our national security by applying advanced science and nuclear technology to the Nation's defense.

NNSA's organization, appropriation structure and programs support the following three General Goals:

General Goal 1, Nuclear Weapons Stewardship: Ensure that our nuclear weapons continue to serve their essential deterrence role by maintaining and enhancing the safety, security, and reliability of the U. S. nuclear weapons stockpile.

General Goal 2, Nuclear Nonproliferation: Provide technical leadership to limit or prevent the spread of materials, technology, and expertise relating to weapons of mass destruction; advance the technologies to detect the proliferation of weapons of mass destruction worldwide; and eliminate or secure inventories of surplus materials and infrastructure usable for nuclear weapons.

General Goal 3, Naval Reactors: Provide the Navy with safe, militarily effective nuclear propulsion plants and ensure their continued safe and reliable operation.

Contribution to General Goal 1

All NNSA activities funded by the Weapons Activities appropriation/program contribute to General Goal 1. These programs provide personnel and facilities and support for research, development and production activities associated with maintaining the enduring nuclear weapons stockpile. The activities are conducted at a nationwide network of government-owned, contractor operated laboratories, testing facilities and production plants that are maintained and recapitalized by the Federal government, and staffed by a highly specialized and trained scientific/technical workforce to assure a robust infrastructure supporting the U.S. nuclear deterrent.

The Weapons Activities program also supports General Goal 1 with national assets for transportation of weapons, weapon components and materials, national nuclear emergency response assets, and activities to assure safeguards and security for all NNSA facilities, including cyber security.

Contribution to General Goal 2

All NNSA activities funded by the Defense Nuclear Nonproliferation appropriation/program contribute to General Goal 2. The nonproliferation programs address the full dimension of the threat of weapons of mass destruction proliferation, and achieve the desired controls through enhanced detection capabilities, protecting or eliminating weapons and weapons-usable materials, infrastructure and expertise, and by reducing the risk of accidents in nuclear fuel cycle facilities worldwide.

The United States is participating with the world community in a comprehensive ten year nonproliferation effort known as the Global Partnership. The United States intends to provide half of the total \$20 billion committed to fund nonproliferation programs in the Former Soviet Union through the DOE, DoD and Department of State. DOE and NNSA are providing almost half of the U. S. funding.

Contribution to General Goal 3

All NNSA activities funded by the Naval Reactors appropriation/program contribute to General Goal 3. Naval Reactors is responsible for all Naval nuclear propulsion work, beginning with technology development, and continuing through reactor operation, and ultimately, reactor plant disposal. The program ensures the safe operation of reactor plants in operating nuclear powered submarines and aircraft carriers (constituting 40 percent of the Navy's combatants), and fulfills the Navy's requirements for new nuclear propulsion plants that meet current and future national defense requirements.

Funding by General Goal (dollars in millions)

| FY 2003 | FY 2004 | FY 2005 | \$ Change | % Change | FY 2006 | FY 2007 | FY 2008 | FY 2009 |
|------------|------------|------------|--------------|-------------|------------|------------|------------|------------|
|------------|------------|------------|--------------|-------------|------------|------------|------------|------------|

General Goal 1, Nuclear Weapons Stewardship

| | | | | | | | | | |
|--|-------|-------|-------|------|---------|-------|-------|-------|-------|
| Directed Stockpile Work..... | 1,259 | 1,327 | 1,406 | + 79 | + 6.0% | 1,521 | 1,648 | 1,778 | 1,812 |
| Science Campaign..... | 261 | 274 | 301 | + 27 | + 9.9% | 301 | 308 | 328 | 341 |
| Engineering Campaign..... | 271 | 265 | 243 | - 22 | - 8.3% | 268 | 226 | 284 | 237 |
| ICF and High Yield Campaign... | 499 | 514 | 492 | - 22 | - 4.3% | 521 | 535 | 437 | 441 |
| Advanced Simulation and Computing Campaign..... | 674 | 721 | 741 | + 20 | + 2.8% | 782 | 826 | 834 | 848 |
| Pit Manufacturing and Certification Campaign..... | 262 | 297 | 336 | + 39 | + 13.1% | 324 | 314 | 155 | 158 |
| Readiness Campaign..... | 270 | 329 | 280 | -49 | -14.9% | 331 | 307 | 357 | 376 |
| Readiness in Technical Base and Facilities | 1,481 | 1,541 | 1,474 | - 67 | - 4.3% | 1,600 | 1,753 | 1,839 | 1,916 |
| Nuclear Weapons Incident Response | 81 | 89 | 99 | + 10 | + 11.2% | 100 | 101 | 98 | 101 |

| | FY 2003 | FY 2004 | FY 2005 | \$ Change | % Change | FY 2006 | FY 2007 | FY 2008 | FY 2009 |
|---|--------------|--------------|--------------|--------------|---------------|--------------|--------------|--------------|--------------|
| Secure Transportation Asset..... | 169 | 161 | 201 | + 40 | + 24.8% | 185 | 186 | 190 | 195 |
| Facilities and Infrastructure Recapitalization Program..... | 235 | 239 | 316 | + 77 | + 32.2% | 373 | 426 | 472 | 476 |
| Safeguards and Security..... | 529 | 553 | 677 | + 124 | + 22.4% | 575 | 586 | 580 | 591 |
| Office of the Administrator..... | 279 | 283 | 277 | - 6 | - 2.1% | 282 | 288 | 293 | 299 |
| Use of PY Balances..... | -30 | -77 | 0 | 0 | 0% | 0 | 0 | 0 | 0 |
| Total Goal 1, Nuclear Weapons Stewardship..... | 6,237 | 6,513 | 6,845 | + 332 | + 5.1% | 7,163 | 7,504 | 7,646 | 7,791 |
| General Goal 2, Control of Weapons of Mass Destruction | | | | | | | | | |
| Nonproliferation and Verification Research & Development.... | 256 | 232 | 220 | - 12 | - 5.2% | 229 | 235 | 246 | 248 |
| Nonproliferation and International Security..... | 131 | 114 | 124 | + 10 | + 8.8% | 119 | 120 | 120 | 120 |
| International Nuclear Material Protection and Cooperation . | 333 | 258 | 238 | - 20 | - 7.8% | 244 | 250 | 258 | 260 |
| Russian Transition Initiative..... | 39 | 40 | 41 | + 1 | + 2.5% | 42 | 43 | 43 | 44 |
| HEU Transparency Implementation.... | 17 | 18 | 21 | + 3 | + 16.7% | 21 | 21 | 20 | 20 |
| International Nuclear Safety | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Elimination of Weapons-Grade Plutonium Production..... | 49 | 65 | 50 | -15 | -23.1% | 56 | 59 | 60 | 67 |

| | FY 2003 | FY 2004 | FY 2005 | \$ Change | % Change | FY 2006 | FY 2007 | FY 2008 | FY 2009 |
|---|--------------|--------------|--------------|--------------|---------------|--------------|--------------|--------------|---------------|
| Accelerated Materials Disposition | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Fissile Materials Disposition | 382 | 653 | 649 | - 4 | - 0.6% | 661 | 673 | 685 | 697 |
| Offsite Source Recovery Project | 2 | 2 | 6 | + 4 | + 200.0% | 9 | 9 | 9 | 9 |
| Office of the Administrator..... | 54 | 57 | 57 | 0 | 0 | 58 | 59 | 60 | 61 |
| Use of PY Balances | - 20 | - 48 | 0 | | | 0 | 0 | 0 | 0 |
| Total Goal 2, Control of Weapons of Mass Destruction | 1,278 | 1,391 | 1,406 | + 15 | + 1.0% | 1,439 | 1,469 | 1,501 | 1,526 |
| Goal 3, Defense Nuclear Power (Naval Reactors)..... | 702 | 762 | 798 | + 36 | + 4.7% | 803 | 818 | 834 | 850 |
| Total, NNSA | 8,217 | 8,667 | 9,049 | + 382 | + 4.4% | 9,405 | 9,791 | 9,981 | 10,167 |

NNSA Program Direction expenditures funded in the Office of the Administrator appropriation have been allocated in support of Goals 1 and 2. Goal 1 allocation includes Federal support for programs funded by the Weapons Activities appropriation, as well as NNSA corporate support, including Federal staffing at the site offices. Goal 2 allocation includes Federal support for all Nuclear Nonproliferation programs. Program Direction expenditures for Naval Reactors, supporting Goal 3, are funded within the Naval Reactors appropriation.

Program Analysis Rating Tool (PART)

The PART was developed by the Office of Management and Budget 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 in terms of planning, management and results. The PART process links seamlessly with NNSA's new PPBE concept, and we have initiated PART "self-assessments" for all NNSA programs as a prominent aspect of the annual program review cycle.

The current focus is to establish outcome- and output-oriented goals, which when successfully completed will lead to benefits to the public, such as increased national security, energy security, and improved environmental conditions. NNSA has incorporated the results and recommendations from these reviews into the decision making processes for this budget, and continues to take steps to improve performance.

The Office of Management and Budget (OMB) conducted PART reviews for three NNSA programs in conjunction with the FY 2005 budget. NNSA has received ratings of “Moderately Effective” for two programs (Inertial Confinement Fusion and High Yield Campaign/NIF (ICF) and Readiness in Technical Base and Facilities – Operations (RTBF)) and “Results Not Demonstrated” for the Elimination of Weapons Grade Plutonium Production (EWGPP) program, a new activity transferred to NNSA from DoD in FY 2003. Each of the programs scored strongly in the Purpose, Planning and Management assessments. Lower scores in the “results and accountability” section reflect the need for improvement in performance metrics for the ICF and RTBF programs. Since the EWGPP program is brand new, no major deliverables are planned until FY 2004. Details of the assessments and the recommendations will be discussed in the individual subprogram justifications.

For the FY 2004 budget, OMB rated four NNSA programs: two programs as “Effective”, the Advanced Simulations and Computing Campaign (ACSI) and the International Nuclear Materials Protection and Cooperation Program (MPC&A); one program as “Moderately Effective”, Facilities and Infrastructure Recapitalization Program (FIRP); and one program as “Adequate”, Safeguards and Security. ACSI, MPC&A and FIRP were given very high marks for program purpose and performance measurement data. FIRP scored Moderately Effective because it was a new program and therefore had not had time to achieve results. The Safeguards and Security program was praised by OMB for providing one of the most secure sets of facilities in the country. However, OMB found the program did not clearly define its performance measures (goals and targets), which resulted in the overall rating of Adequate.

All findings from last year’s assessments have been addressed. OMB has acknowledged improvement in Safeguards and Security’s performance measures, and OMB plans to reassess this program next year.

Significant Program Shifts

The FY 2005-2009 budget proposal contains several significant shifts in program effort from the FY 2004 President’s Budget Request.

Within Weapons Activities, the budget structure has been changed in response to Congressional concerns to align Directed Stockpile Work funding with individual weapon systems, and to highlight Nuclear Weapon Incident Response as a separate line. Funding has also been rebalanced to support research and development on advanced weapon concepts to meet emerging DoD requirements that will enhance the nuclear deterrent, and to ensure a robust and capable NNSA for the future. This shift includes funding allocated to the Robust Nuclear Earth Penetrator feasibility and cost studies in response to a request from the U.S. Strategic Command approved by the Nuclear Weapons Council in November 2001. Also within the Weapons Activities appropriation, FY 2005 funding is requested to address revised threat guidance at NNSA sites. The “Design Basis Threat” (DBT) implementation requires upgrades to equipment, personnel and facilities to enhance security throughout the nationwide nuclear weapons complex. Outyear funding estimates for DBT implementation will be developed as part of the FY 2006-2010 Programming process.

In the Defense Nuclear Nonproliferation program, the Russian reactor safety efforts under the International Nuclear Safety program were completed successfully in 2003. The remaining \$4 million for emergency management and cooperation efforts was shifted to the Nonproliferation and International Security program. These funds provide for the orderly shutdown of the BN 350 reactor in Kazakhstan (\$1.5 million) and continue activities to strengthen international emergency cooperation and communications (\$2.5 million). The Accelerated Materials Disposition initiative was not supported by Congress in FY2004 and in consideration of overall NNSA priorities, is not requested in the FY2005 budget or outyears.

NNSA has assumed responsibility for the Offsite Source Recovery Project from the Office of Environmental Management. This program recovers excess and unwanted sealed sources from non-DOE sites, and places them in storage at DOE facilities to reduce the risk of their possible use in a radiological dispersal device. The program will be funded within the Defense Nuclear Nonproliferation appropriation, at a projected cost of about \$40 million through the FYNSP period.

Institutional General Plant Projects (IGPP)

Institutional General Plant Projects (IGPP) provides funding for minor new construction of a general institutional nature at multi-program sites. The cost of IGPP projects is less than \$5 million, and projects benefit multiple cost objectives. IGPP’s do not include projects whose benefit can be directly attributed to a specific or single program. The following table reflects current site planned IGPP targets as of the latest Ten Year Comprehensive Site Plan.

Site IGPP Estimates
(dollars in thousands)

| | FY 2003 | FY 2004 | FY 2005 | \$ Change | % Change |
|------------------------------------|-------------|-------------|-------------|-------------|-------------|
| Los Alamos National Laboratory... | 5.2 | 9.5 | 10.0 | +0.5 | +5% |
| Livermore National Laboratory..... | 4.2 | 9.5 | 9.7 | +0.2 | +2% |
| Sandia National Laboratory | 12.3 | 10.7 | 4.9 | -5.8 | -54% |
| Nevada..... | 0 | 5.0 | 5.0 | -- | -- |
| Total Site IGPP | 21.7 | 34.7 | 29.6 | -5.1 | -15% |

Funding Summary by Site

(dollars in millions)

| | FY 2003 | FY 2004 | FY05 Office of the Admin | FY05 Weapon Activities | FY05 Nuclear Nonprolif | FY05 Naval React | Total FY 2005 |
|--|------------|------------|-----------------------------------|------------------------------|------------------------------|------------------------|---------------------|
|--|------------|------------|-----------------------------------|------------------------------|------------------------------|------------------------|---------------------|

Chicago Operations Office

| | | | | | | | |
|--|-------|-------|--|------|-------|--|-------|
| Ames Laboratory | 0.2 | 0.2 | | | 0.2 | | 0.2 |
| Argonne Nat. Laboratory | 24.7 | 19.2 | | 1.9 | 20.5 | | 22.4 |
| Brookhaven National Laboratory..... | 25.4 | 44.5 | | 1.6 | 33.3 | | 34.9 |
| Chicago Operations Office ... | 209.5 | 428.4 | | 25.2 | 446.3 | | 471.5 |
| New Brunswick Laboratory... | 1.5 | 1.1 | | | 1.1 | | 1.1 |

Idaho Operations Office

| | | | | | | | |
|--------------------------------|------|------|--|-----|-----|------|------|
| Idaho National Laboratory | 59.5 | 58.0 | | | 2.0 | 56.0 | 58.0 |
| Idaho Operations Office..... | 1.4 | 1.1 | | 1.4 | | | 1.4 |

Kansas City Site Office

| | | | | | | | |
|------------------------------|-------|-------|-----|-------|-----|--|-------|
| Kansas City Plant | 390.3 | 403.8 | | 378.0 | 1.4 | | 379.5 |
| Kansas City Site Office..... | 6.2 | 6.2 | 6.0 | | | | 6.0 |

Livermore Site Office

| | | | | | | | |
|---|---------|---------|------|-------|------|--|---------|
| Lawrence Livermore National Laboratory | 1,048.7 | 1,004.1 | | 963.3 | 70.4 | | 1,033.7 |
| Livermore Site Office | 12.8 | 16.1 | 16.5 | | | | 16.5 |

Los Alamos Site Office

| | | | | | | | |
|--|---------|---------|------|---------|-------|--|---------|
| Los Alamos National Laboratory..... | 1,410.0 | 1,415.6 | | 1,395.6 | 123.6 | | 1,519.2 |
| Los Alamos Site Office | 12.0 | 14.6 | 15.9 | | | | 15.9 |

National Engineering Technology Laboratory

| | | | | | | | |
|--|-----|-----|--|--|--|--|-----|
| | 1.7 | 0.0 | | | | | 0.0 |
|--|-----|-----|--|--|--|--|-----|

NNSA Service Center

| | | | | | | | |
|--------------------------------------|------|------|--|------|-----|--|------|
| Atomic Energy of Canada, Ltd..... | 2.4 | 1.2 | | | 1.2 | | 1.2 |
| General Atomics | 10.8 | 11.0 | | 13.1 | 0.2 | | 13.3 |

| | FY 2003 | FY 2004 | FY05 Office of the Admin | FY05 Weapon Activities | FY05 Nuclear Nonprolif | FY05 Naval React | Total FY 2005 |
|--|------------|------------|-----------------------------------|------------------------------|------------------------------|------------------------|---------------------|
| Lawrence Berkeley National Laboratory..... | 5.2 | 4.0 | | | 4.1 | | 4.1 |
| Naval Research Laboratory.. | 22.3 | 13.3 | | 11.0 | | | 11.0 |
| NNSA Service Center (all other sites) | 487.8 | 467.2 | 98.7 | 232.2 | 83.4 | | 414.4 |
| Nonproliferation and National Security Institute..... | 0.1 | | | | | | |
| University of Rochester/LLE . | 46.8 | 62.6 | | 45.5 | | | 45.5 |
| Nevada Site Office | | | | | | | |
| Nevada Site Office..... | 104.1 | 92.5 | 17.5 | 45.7 | 7.4 | | 70.6 |
| Nevada Test Site | 247.7 | 285.4 | | 282.9 | 1.0 | | 283.9 |
| Oak Ridge Operations Office | | | | | | | |
| Oak Ridge Institute for Science and Engineering..... | 7.8 | 8.8 | | 7.1 | | | 7.1 |
| Oak Ridge National Laboratory..... | 110.6 | 95.8 | | 7.5 | 136.9 | | 144.4 |
| Office of Science and Technical Information | 0.1 | 0.1 | | 0.1 | | | 0.1 |
| Y-12 Site Office..... | 9.6 | 16.3 | 11.7 | | | | 11.7 |
| Y-12 National Security Complex..... | 734.3 | 728.2 | | 727.0 | 61.0 | | 788.0 |
| Pantex Site Office | | | | | | | |
| Pantex Plant | 413.0 | 431.1 | | 463.5 | 10.3 | | 473.8 |
| Pantex Site Office | 9.9 | 10.8 | 11.6 | | | | 11.6 |
| Pittsburgh Naval Reactors Office | | | | | | | |
| Bettis Atomic Power Laboratory..... | 351.6 | 396.2 | | | | 401.2 | 401.2 |
| Pittsburgh Naval Reactors Office | 7.8 | 8.2 | | | | 8.7 | 8.7 |
| Richland Operations Office | | | | | | | |
| Richland Operations Office... | 0.4 | 0.8 | | 1.3 | | | 1.3 |

| | FY 2003 | FY 2004 | FY05 Office of the Admin | FY05 Weapon Activities | FY05 Nuclear Nonprolif | FY05 Naval React | Total FY 2005 |
|---|------------|------------|-----------------------------------|------------------------------|------------------------------|------------------------|---------------------|
| Pacific Northwest National Laboratory..... | 132.5 | 85.6 | | 4.4 | 70.1 | | 74.5 |
| Sandia Site Office | | | | | | | |
| Sandia National Laboratories | 1,306.8 | 1,376.7 | | 1,167.7 | 144.3 | | 1,312.0 |
| Sandia Site Office..... | 8.6 | 12.1 | 12.5 | | | | 12.5 |
| Savannah River Operations Office | | | | | | | |
| Savannah River Operations Office | 14.0 | 26.5 | | | 32.4 | | 32.4 |
| Savannah River Site Office .. | 3.5 | 3.1 | 2.9 | | | | 2.9 |
| Savannah River Site..... | 305.3 | 303.3 | | 238.9 | 55.5 | | 294.4 |
| Schenectady Naval Reactors Office | | | | | | | |
| Knolls Atomic Power Laboratory..... | 269.5 | 282.0 | | | | 308.2 | 308.2 |
| Schenectady Naval Reactors Office | 6.3 | 6.7 | | | | 7.0 | 7.0 |
| Washington DC Headquarters | 501.3 | 688.2 | 137.9 | 577.5 | 41.9 | 13.8 | 771.1 |
| Other..... | 5.7 | 7.0 | 2.4 | | | 3.0 | 5.4 |
| Subtotal, NNSA | 8,360.4 | 8,842.0 | 333.7 | 6,598.5 | 1,348.6 | 768.4 | 9,078.7 |
| Adjustments..... | - 143.5 | - 176.2 | 0.0 | - 30.0 | 0.0 | 0.0 | - 30.0 |
| Total, NNSA..... | 8,216.9 | 8,665.8 | 333.7 | 6,568.5 | 1,348.6 | 768.4 | 9,048.7 |

DOE/NNSA Goal Cascade

Shaded Areas indicate NNSA Budget Justification levels

| BUDGET DOCUMENT | OVERVIEW | PROGRAM | SUBPROGRAM | ACTIVITY | |
|---|------------------------------|---|--|---|--|
| <i>DOE Goal Cascade</i> | <i>DOE Strategic Goal</i> | <i>DOE General Goals</i> | <i>DOE Program Goals (goal number)</i> | | |
| NNSA Cascade | NNSA, Defense Strategic Goal | Weapons Activities, General Goal 1, Nuclear Weapons Stewardship | Directed Stockpile Work (01.27.00.00) | by weapon system | |
| | | | Science Campaign (01.28.00.00) | by campaign | |
| | | | Engineering Campaign (01.29.00.00) | by campaign and construction project | |
| | | | Readiness Campaign (01.33.00.00) | by campaign | |
| | | | Inertial Confinement Fusion and High Yield/NIF Campaign (01.30.00.00) | | |
| | | | Advanced Simulation And Computing Campaign (01.31.00.00) | | |
| | | | Pit Manufacturing and Certification Campaign (01.32.00.00) | | |
| | | | Readiness in Technical Base and Facilities (01.34.00.00 O&M, 01.35.00.00 Construction) | by activity and construction project | |
| | | | Nuclear Weapon Incident Response (01.37.00.00) | | |
| | | | Secure Transportation Asset (01.36.00.00) | | |
| | | | Facilities and Infrastructure Recapitalization (01.38.00.00) | | |
| | | | Safeguards and Security (01.39.00.00) | | |
| | | | Defense Nuclear Nonproliferation, General Goal 2, Nuclear Nonproliferation | Research and Development (02.40.00.00) | |
| | | | | HEU Transparency (02.41.00.00) | |
| | | | | Elimination of Weapons Grade Plutonium Production (02.42.00.00) | |
| Nonproliferation and International Security (02.44.00.00) | | | | | |
| Russian Transition Initiatives (02.45.00.00) | | | | | |
| Int'l Materials Protection and Cooperation (02.46.00.00) | | | | | |
| Fissile Materials Disposition (02.47.00.00) | | | | | |
| Off-Site Source Reduction (02.62.00.00) | | | | | |
| Naval Reactors, General Goal 3, Naval Reactors (03.49.00.00) | No subprograms | | | | |
| Office of the Administrator Supports General Goals 1 and 2 (01,02.50.00.00) | No subprograms | | | | |

Site Funding Summary

| | (\$ in Thousands) | | |
|--|-----------------------|-----------------------|--------------------|
| | FY 2003 Comparable | FY 2004 Comparable | FY 2005 Request |
| Ames Laboratory | 180 | 250 | 250 |
| Argonne National Laboratory | 24,727 | 19,153 | 22,411 |
| Atomic Energy of Canada Ltd | 2,360 | 1,215 | 1,215 |
| Bettis Atomic Power Laboratory | 351,600 | 396,234 | 401,150 |
| Brookhaven National Laboratory | 25,446 | 44,537 | 34,911 |
| Chicago Operations Office | 207,893 | 426,631 | 469,745 |
| General Atomics | 10,809 | 11,034 | 13,255 |
| Headquarters | 501,289 | 688,233 | 771,103 |
| Idaho National Engineering Laboratory | 59,517 | 58,024 | 57,981 |
| Idaho Operations Office | 1,436 | 1,130 | 1,426 |
| Kansas City Plant | 390,330 | 403,834 | 379,461 |
| Kansas City Site Office | 6,201 | 6,59 | 6,012 |
| Knolls Atomic Power Laboratory | 269,500 | 282,028 | 308,250 |
| Lawrence Berkley National Laboratory | 5,179 | 4,037 | 4,091 |
| Lawrence Livermore National Laboratory | 1,048,657 | 1,004,123 | 1,033,658 |
| Livermore Site Office | 12,844 | 16,072 | 16,489 |
| Los Alamos National Laboratory | 1,409,994 | 1,415,577 | 1,519,169 |
| Los Alamos Site Office | 11,964 | 14,558 | 15,865 |
| NNSA Service Center | 487,968 | 467,215 | 414,408 |
| National Engineering Technology Laboratory | 1,674 | 0 | 0 |
| National Renewable Energy Laboratory | 1,681 | 1,747 | 1,759 |
| Naval Research Laboratory | 22,327 | 13,317 | 11,049 |
| Nevada Test Site | 274,688 | 285,419 | 283,929 |
| Nevada Site Office | 104,087 | 92,500 | 70,572 |
| New Brunswick Laboratory | 1,477 | 1,083 | 1,135 |
| ORISE | 7,783 | 8,821 | 7,134 |
| OSTI | 145 | 135 | 134 |
| Oak Ridge National Laboratory | 110,646 | 95,758 | 144,372 |
| Oak Ridge Operations | 3,086 | 4,000 | 5,940 |
| Pacific Northwest National Laboratory | 132,491 | 85,564 | 74,535 |
| Pantex Plant | 412,996 | 431,119 | 473,768 |
| Pantex Site Office | 9,944 | 10,768 | 11,591 |
| Pittsburgh Naval Reactors Office | 7,755 | 8,231 | 8,748 |
| Richland Operations Office | 716 | 820 | 1347 |
| Rocky Flats Office | 800 | 0 | 0 |
| Sandia National Laboratories | 1,306,814 | 1,376,657 | 1,312,010 |
| Sandia Site Office | 8,635 | 12,056 | 12,518 |
| Savannah River Operations Office | 13,994 | 26,549 | 32,384 |
| Savannah River Site | 305,289 | 303,322 | 294,446 |
| Savannah River Site Office | 3,548 | 3,148 | 2,925 |
| Schenectady Naval Reactors Office | 6,330 | 6,712 | 7,002 |
| University of Rochester/LLE | 46,762 | 62,618 | 45,469 |
| Y-12 National Security Complex | 734,311 | 728,184 | 787,963 |
| Y-12 Site Office | 9,641 | 16,349 | 11,674 |
| Adjustments | -143,499 | -176,184 | -30,000 |
| TOTAL, NNSA | 8,216,900 | 8,665,801 | 9,048,700 |

BETTIS ATOMIC POWER LABORATORY

INTRODUCTION:

Bettis Laboratory is a research and development laboratory operated by Bechtel Bettis, Inc., for the Naval Nuclear Propulsion Program, a joint Department of the Navy-Department of Energy (DOE) organization. The Pittsburgh Naval Reactors Office oversees Bettis operations. Bettis is primarily involved with the design, development, and operational follow of nuclear propulsion plants for naval vessels. The Program ensures the safe operation of reactor plants in nuclear-powered submarines and aircraft carriers (constituting 40 percent of the Navy's combatants), and fulfills the Navy's requirements for new nuclear propulsion plants that meet current and future national defense requirements. The initial efforts of Bettis Laboratory led to the development of the power plant for USS NAUTILUS (SSN 571), the world's first nuclear-powered submarine. The Bettis Atomic Power Laboratory is situated on nearly 202 acres of the former Bettis Airfield in West Mifflin, Pennsylvania, about 7.5 miles southeast of Pittsburgh, Pennsylvania.

HISTORY:

On December 10, 1948, the Atomic Energy Commission (AEC) awarded a contract to Westinghouse Atomic Power Division to design and develop a prototype nuclear power plant for submarine propulsion. Under this contract, the AEC agreed to furnish funds for the construction of a Government-owned/contractor-operated research and development laboratory. Westinghouse purchased the Bettis Airport on January 27, 1949, as the site for its newly formed Atomic Power Division to work on that contract. Bechtel National, Inc., replaced Westinghouse Electric Corporation as the operating contractor on February 1, 1999.

Since USS NAUTILUS, Bettis has worked on many aspects of the development of the nuclear navy. Advanced technology for submarine and surface ship nuclear propulsion plants has constituted a major portion of the work program. Bettis's work on the prototype nuclear propulsion plant for a surface ship, and successful operation of the prototype at the Naval Reactors Facility in Idaho Falls, Idaho, led to the development of the first nuclear-powered surface ship, the cruiser USS LONG BEACH (CGN 9), and the first nuclear-powered aircraft carrier, USS ENTERPRISE (CVN 65). Bettis currently provides design and engineering support for many of the Navy's operating propulsion plants, (including the propulsion plants in the NIMITZ-class aircraft carriers and in the new SEAWOLF-class attack submarines), and is developing new technologies and designs for the Navy's future ships, such as the VIRGINIA-class submarines and the CVN 21-class aircraft carriers.

Bettis has also played a role in developing land-based nuclear reactor plants. Under Naval Reactors, Bettis worked on the design and development of the first United States full-scale nuclear power plant for civilian use, the Shippingport Atomic Power Station. Shippingport was also the site of the first Light Water Breeder Reactor, which operated from 1977 to October 1982. This advanced reactor system was developed to enhance the use of fuel in light water reactors. The technology developed for the Shippingport program has been made available to Industry for commercial application.

In addition, Bettis has lead responsibility for the overall program for training Navy personnel in nuclear plant operations, including training at the Naval Nuclear Power Training Command, Charleston, South Carolina; the Moored Training Ships; and Fleet training. Bettis also maintains engineering field offices at numerous shipyards and core contractor facilities and operates the Expanded Core Facility at the Naval Reactors Facility near Idaho Falls, Idaho.

The broad spectrum of Bettis' activities has included work on core and component technology and design, thermal and hydraulic systems, materials, and nuclear physics.

MANAGEMENT:

NNSA Management:

Pittsburgh Naval Reactors Office

Management and Operation Contractor:

Bechtel Bettis, Inc. was awarded a new 5-year contract for the management and operation of the laboratory. This contract began on February 1, 1999 and has the option to extend the contract for another 5 years.

(dollars in millions)

| Bettis Funding | FY 2003 | FY 2004 | FY 2005 |
|-----------------------------------|--------------|--------------|--------------|
| Naval Reactors Development | | | |
| Operating Expenses | 342.6 | 377.7 | 400.2 |
| Major Construction Projects | 9.0 | 18.5 | 1.0 |
| Total, Bettis | 351.6 | 396.2 | 401.2 |

IDAHO NATIONAL ENGINEERING AND ENVIRONMENTAL LABORATORY

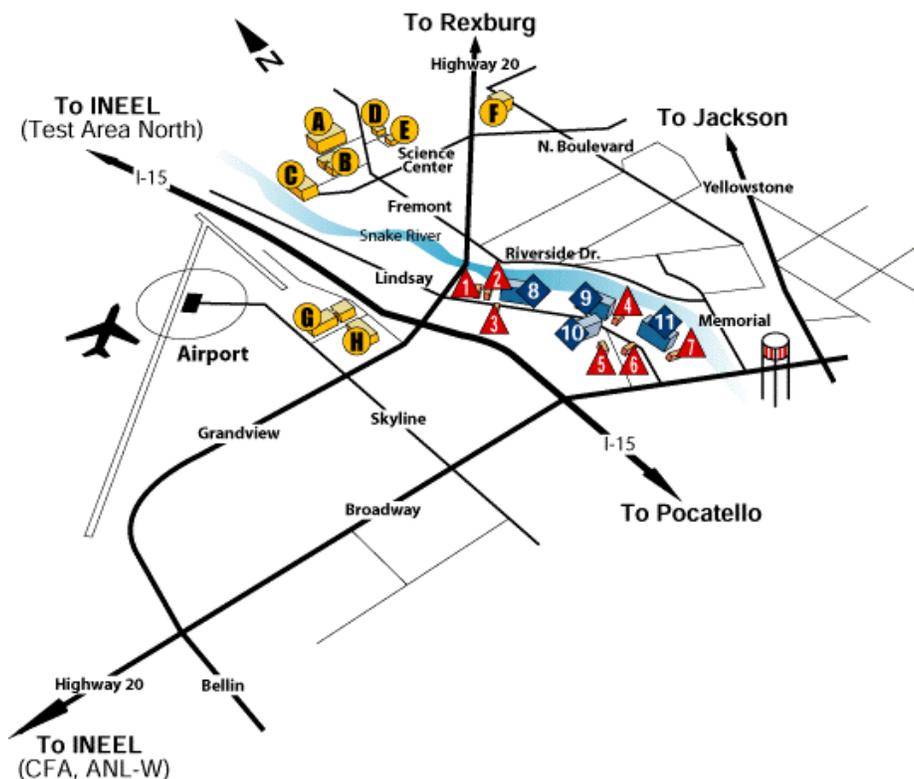
INTRODUCTION:

The Idaho National Engineering and Environmental Laboratory (INEEL), located in Eastern Idaho, consists of an 890-square mile reservation located 32 miles west of Idaho Falls, Idaho. Research facilities and office buildings are also located in Idaho Falls. The Laboratory employs about 8,000 people at these two locations.

HISTORY:

Background. Established in 1949 as the National Reactor Testing Station, the INEEL was once the site of the world's largest concentration of nuclear reactors. Fifty-two test reactors - most of them first-of-a-kind - were built and operated, including the Navy's first prototype nuclear propulsion plant. Of these, three are still operating. The Advanced Test Reactor at the INEEL Test Reactor Area is used for materials testing and the production of medical and industrial isotopes. The other two operations reactors are the Advanced Test Reactor Criticality Facility, which is a full-scale, low-power version of the Advanced Test Reactor designed to provide physics data, and the Neutron Radiography Reactor at Argonne National Laboratory-West (located at INEEL).

In 1951, the INEEL achieved one of the most significant scientific accomplishments of the century - the first use of nuclear fission to produce a usable quantity of electricity. This occurred at the Experimental Breeder Reactor No. 1. EBR-I is now a Registered National Historic Landmark open to the public.



MANAGEMENT:

NNSA Management:

The University of Chicago operates Argonne National Laboratory West and reports to DOE's Chicago Operations Office. Bechtel Bettis, Inc. operates the Naval Reactors Facility that reports to DOE's Pittsburgh Naval Operations Office.

Management and Operation Contractor:

The INEEL is operated for the DOE by Bechtel BWXT Idaho, LLC. Members of the LLC are Bechtel National, Inc., BWX Technologies Co and INRA. INRA is a consortium of eight regional universities, each of which brings unique educational, management, research and scientific assets into collaboration and partnership with the INEEL. The DOE field office is the Idaho Operations Office.

FUNDING:

The Environmental Management Program funds slightly over 70% of the work at the INEEL. This includes Waste Management, Environmental Restoration, Spent Nuclear Fuel, High-Level Waste, INTEC, and Validation and Verification. The remaining funding sources consist of Work for Others (WFO), offices of Nuclear Energy, Energy Efficiency and Renewable Energy, Fossil Energy, Office of Science, Nonproliferation and National Security.

(dollars in millions)

| INEEL Funding | FY 2003 | FY 2004 | FY 2005 |
|---------------------------------------|-------------|-------------|-------------|
| Weapons Activities | 1.8 | 2.0 | |
| Defense Nuclear Nonproliferation..... | 2.9 | 1.7 | 2.0 |
| Naval Reactors Development O&M | | | |
| Advance Test Reactor | 54.9 | 54.4 | 56.0 |
| Total, NNSA | 59.6 | 58.1 | 58.0 |

Defense Nuclear Nonproliferation (DNN)

The Idaho National Engineering and Environmental Laboratory supports four DNN programs: Nonproliferation & Verification Research and Development (R&D) for development of counter nuclear smuggling detection technologies using accelerator systems for U.S. International Border; Nonproliferation and International Security providing technical support for export control activities; International Materials Protection and Cooperation safety and vulnerability analysis activities; and Russian Transition Initiatives to provide technical support for the Initiatives for Proliferation Prevention program and export control activities.

Naval Reactors Development

The Advanced Test Reactor (ATR) is the product of an evolution in nuclear test reactors. Located at the Test Reactor Area at the Idaho National Engineering and Environmental Laboratory, the ATR was originally commissioned in 1967 with the primary mission of materials and fuels testing for the Naval Reactors Program. It is the highest power research reactor operating in the United States. Its large test

volumes make it attractive for irradiations of materials and components. Though it has been operating for many years, the ATR is expected to remain operational until at least the year 2050.

The ATR is designed to evaluate the effects of intense radiation on material samples, especially nuclear fuels. The principal customer for the reactor over most of its lifetime has been Naval Reactors. Other uses include isotope production for medical, industrial, environmental, agricultural and research applications. The ATR has provided a large fraction of the Ir-192 used in U.S. commercial radiography sources and high specific activity Co-60 for medical applications. Irradiation services are provided for government programs as well as private firms and consortiums.

The ATR produces very high neutron flux, which allows the effects of many years of operation in other reactor environments to be simulated in as short as one-tenth the time. Subsequent evaluations of test specimens in the Naval Reactors Expanded Core Facility and the Knolls Atomic Power Laboratory Radioactive Materials Laboratory facilities are the main source of data on the performance of reactor fuel, poison, and structural materials under irradiated conditions.

One of the advantages of the ATR is the precision with which the power level (or neutron flux) can be adjusted at the various test positions. An individual test train's internal arrangement and location in the ATR determines exposure to specific conditions. Naval Reactors continues to develop enhanced systems for high temperature irradiation testing with precise temperature control and environmental monitoring in the ATR.

(dollars in millions)

| ATR Funding | FY 2003 | FY 2004 | FY 2005 |
|-------------------------|----------------|----------------|----------------|
| Operations..... | 52.7 | 54.0 | 54.0 |
| Facilities | 2.2 | 0.7 | 8.4 |
| Total, ATR | 54.90 | 54.70 | 62.40 |

Advanced Test Reactor

The Advanced Test Reactor (ATR) is the product of an evolution in nuclear test reactors. Located at the Test Reactor Area at the Idaho National Engineering and Environmental Laboratory, the ATR was originally commissioned in 1967 with the primary mission of materials and fuels testing for the Naval Reactors Program. It is the highest power research reactor operating in the United States. Its large test volumes make it attractive for irradiations of materials and components. Though it has been operating for many years, the ATR is expected to remain operational until at least the year 2050.

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One of the advantages of the ATR is the precision with which the power level (or neutron flux) can be adjusted at the various test positions. An individual test train's internal arrangement and location in the ATR determines exposure to specific conditions. Naval Reactors continues to develop enhanced systems for high temperature irradiation testing with precise temperature control and environmental monitoring in the ATR.

(dollars in millions)

| ATR Funding | FY 2003 | FY 2004 | FY 2005 |
|------------------------|-------------|-------------|-------------|
| Operations..... | 52.7 | 53.7 | 55.2 |
| Facilities | 2.2 | 0.7 | 0.8 |
| Total, ATR..... | 54.9 | 54.4 | 56.0 |

KANSAS CITY PLANT

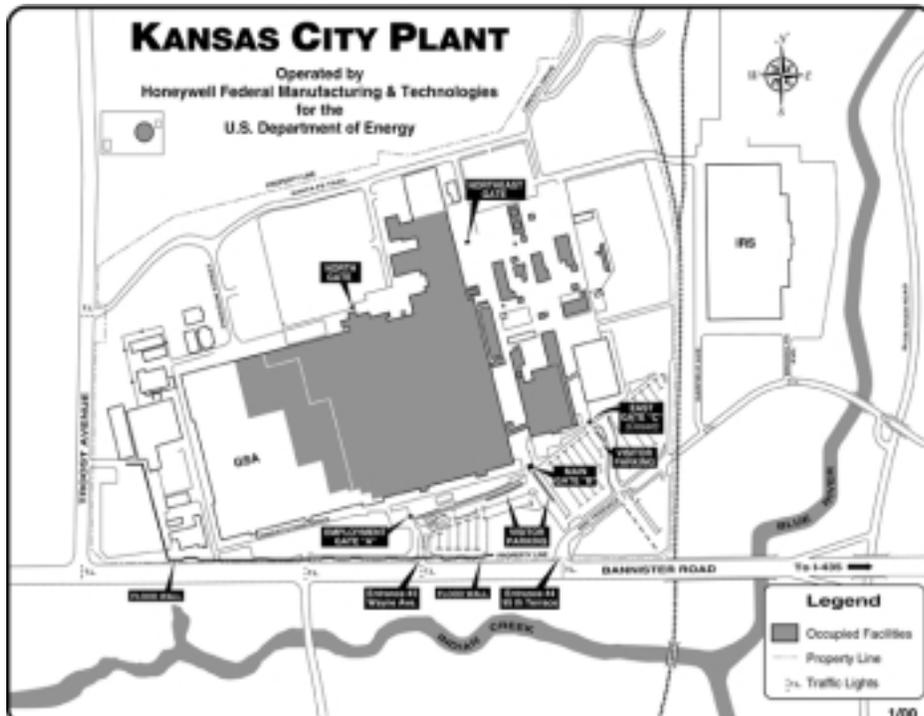
INTRODUCTION:

The Kansas City Plant (KCP) is situated on approximately 122 acres of the 300-acre Bannister Federal Complex located within city limits, 12 miles south of downtown Kansas City, Missouri.

HISTORY:

The Navy constructed the original plant, in 1941, to produce aircraft engines. In 1948, the Atomic Energy Commission obtained a significant portion of the war surplus plant, and selected the Bendix Corporation to produce electrical and mechanical components for nuclear weapons. Bendix managed the plant until 1982, when it was merged with Allied Signal. In 1999, Allied Signal merged with the Honeywell Corporation and renamed the new company Honeywell International. The Honeywell Federal Manufacturing and Technologies Division manages and operates (M&O) the KCP for the National Nuclear Security Administration (NNSA).

The current and future missions are consistent with the Record of Decision for the Stockpile Stewardship and Management Preliminary Environment Impact Statement, December 19, 1996.



MANAGEMENT:

National Nuclear Security Administration Management:

Kansas City Site Office

Management and Operating Contractor:

Honeywell was awarded a new 5-year contract for the management and operation of the plant. This contract began January 1, 2001 and has a value of \$1.7 billion over 5 years. After the contract period, DOE has the option to extend the contract for another 5 years.

TABLES

FUNDING AND EMPLOYMENT:

(dollars in millions)

FUNDING

NNSA

| | FY 2003 | FY 2004 | FY 2005 |
|--|--------------|--------------|--------------|
| Directed Stockpile Work..... | 175.0 | 181.0 | 180.4 |
| Engineering Campaign..... | 6.3 | 9.3 | 9.1 |
| Inertial Confinement Fusion Ignition and High Yield Campaign . | 1.3 | 0 | 0 |
| Advanced Simulation and Computing..... | .5 | 0 | 0 |
| Readiness Campaign..... | 33.2 | 45.9 | 47.6 |
| Readiness in Technical Base and Facilities | 138.2 | 136.1 | 107.2 |
| Safeguards and Security..... | 18.7 | 14.0 | 17.3 |
| Facilities and Infrastructure Recapitalization Program..... | 12.1 | 14.0 | 17.4 |
| Nonproliferation and International Security..... | .6 | .5 | .7 |
| Russian Transition Initiatives..... | .7 | .7 | .7 |
| Total NNSA..... | 390.3 | 403.8 | 379.4 |

Contractor Employment (End of Year)

| | FY 2003 | FY 2004 | FY 2005 |
|----------------------------|--------------|--------------|--------------|
| NNSA..... | 2,907 | 2,912 | 2,865 |
| Other..... | 178 | 188 | 255 |
| Total Facility..... | 3,060 | 3,100 | 3,120 |

Congressional Items of Interest

- \$5M for Readiness in Technical Base and Facilities to address pension liability issues.

ACTIVITIES:

WEAPONS ACTIVITIES

Directed Stockpile Work (DSW)

FY 2005 activities include preproduction engineering, tooling, and material procurement associated with the W76 and W80 Life Extension Programs (LEPs), and production associated with the B61 Alteration (Alt) 357 LEP First Production Unit (FPU). Enduring Stockpile System production activities include Firing Set, Environmental Sensing Devices, Lightning Arrestor Connector, and Aft Subassembly surveillance rebuilds in addition to lab and flight test sampling. Major reservoir production continues for the W76, B61, and W80 Enduring Stockpile Systems, and reservoir development activities include the W78 and W88 Systems.

Engineering Campaign

In FY 2005, KCP has a primary role in the development of new flight instrumentation techniques that enable the acquisition of detailed information regarding structure and performance of weapons at the highest possible environmental and configuration fidelity. The FY 2005 funding supports High Explosive Radio Telemetry (HERT) III and Engineering Development Telemetry (EDTM) flight tests, and new materials and components aging studies.

Readiness Campaign

In FY 2005, the Nonnuclear Readiness funding level (\$25.4M) includes the replacement of test equipment required to accept new production products in support of LEPs, and reflects implementation of as-built/design model archiving and transfer capabilities and automated feature-based manufacturing development, manufacturing, and inspection for production of W76 and W80 components.

Tritium Readiness FY 2005 activities (\$3.3M) include the remainder of facility preparation including equipment procurement and installation, as well as engineering and inspection development for the two KCP assigned components of the Tritium Producing Burnable Absorber Rod assembly.

FY 2005 Advanced Design and Production Technologies activities (\$18.9M) include developing stronglinks and their associated testing equipment concepts, developing cable tester and other automated inspection methods that will interpret complex data and retain digital data of the acceptance. Classified computing with more applications will be made available to the engineering desktops.

Readiness in Technical Base and Facilities

In addition to the continual support of fundamental services, key activities for FY 2005 include procurement of the \$3.1 million Automated Storage and Retrieval System major item of equipment, construction of one General Plant Project (GPP) project and design of 4 GPP projects to position the KCP for future GPP construction activity. Several projects are nearing completion (Replace Boilers and Controls and Structural Upgrades) or are well underway (Stockpile Management Restructuring Initiative). The Gas Transfer Capacity Expansion project is currently in design.

Facilities and Infrastructure Recapitalization Program

Facility and Infrastructure Recapitalization Program projects are replacing and upgrading systems in essential production facilities in support of Limited Life Component production and LEPs for the W-87, B-61, W-76, and W-80 weapons programs. FIRP also has initiated the complex-wide Roof Asset Management Program (RAMP) to establish and implement a corporate approach for the management of NNSA's roofing assets, which is expected to result in improved cost efficiencies, improved quality of life extension of NNSA's roofing assets, consistent approach and common standards for optimal roofing repairs and replacement, and additional deferred maintenance reduction. Long needed roof repairs are underway across the vast and complex roofing system covering the plants DSW activities.

Safeguards and Security

In FY 2005, the KCP will complete a two-year effort to replace aging interior alarm equipment, improve alarm system reliability and maintenance requirements, and increase alarm point capacity. The plant has developed a Design Basis Threat (DBT) Implementation Plan to address new protection requirements for the site. As part of the National Threat Level Alert System, the plant may occasionally have to implement additional compensatory security measures.

DEFENSE NUCLEAR NONPROLIFERATION

Nonproliferation and International Security (NIS)

The KCP supports NIS's commercialization efforts in the former Soviet Union.

KNOLLS ATOMIC POWER LABORATORY

INTRODUCTION:

The Knolls Atomic Power Laboratory (KAPL) is a research and development laboratory operated by KAPL, Inc. (a Lockheed Martin Company) for the Naval Nuclear Propulsion Program, a joint Department of the Navy-Department of Energy organization. The Schenectady Naval Reactors Office oversees KAPL operations. It is KAPL's sole function to support the U.S. Naval Nuclear Propulsion Program through development of advanced reactor plant designs, while providing design agency support of the operating fleet and training nuclear propulsion plant operators. The Program ensures the safe operation of reactor plants in nuclear-powered submarines and aircraft carriers (which constitute 40 percent of the Navy's combatants), and fulfills the Navy's requirements for new nuclear propulsion plants that meet current and future national defense requirements. The Knolls Site in Niskayuna is situated on approximately 180 acres of land, while the Kesselring Site in West Milton is situated on approximately 3,905 acres. KAPL field personnel also work at shipyards in New Hampshire, Connecticut, Virginia, Hawaii, and Washington, as well as at the Naval Reactors Facility Site in Idaho.

HISTORY:

The General Electric (GE) company originally operated KAPL. GE received its initial research contract to establish KAPL from the Manhattan Engineering District in May 1946. KAPL's mission was converted to a nuclear propulsion project in 1950. KAPL's initial efforts were spent developing a safe reactor small enough to operate inside a submarine. USS SEAWOLF (SSN 575), launched in 1955, represented the first KAPL-designed reactor plant. Subsequently, KAPL designed reactors for the USS TRITON (SSN 586), USS NARWHAL (SSN 671), the research submarine NR-1, LOS ANGELES and VIRGINIA-class attack submarines and OHIO-class ballistic missile submarine.

KAPL currently maintains, supports, and enhances the mission capability of LOS ANGELES-class submarines and OHIO-class ballistic missile submarines. KAPL also supports Electric Boat and Newport News in the test and construction of the VIRGINIA-class submarines and provides design and engineering support for the future CVN 21-class aircraft carriers.

KAPL's efforts focus on designing the world's most technologically advanced nuclear reactor plants for U.S. Navy submarines. Fundamental research is conducted to develop improved materials, chemistry control systems, and components for naval nuclear propulsion technology.

KAPL uses its theoretical knowledge, sophisticated testing capabilities, and computational power to design new reactor and propulsion systems and components that will be used on existing and future Navy surface ships and submarines. Some additional areas KAPL focuses on are direct energy conversion and advanced composite materials.

In addition, KAPL operates two prototype plants located at the Kesselring Site in West Milton, N.Y. The MARF and S8G prototypes began operating in 1976 and 1978, respectively, and are used primarily for naval nuclear propulsion training. These plants are also used to test reactors, reactor plant systems, and reactor steam and electric plant components. Also located at Kesselring, the S3G and D1G prototypes are undergoing inactivation. S3G and D1G, which started operation in 1958 and 1962, respectively, were used for training and testing until their missions were completed in the 1990s. At that time, the plants were shut down and inactivation was started as part of Naval Reactors' continuing commitment to ensure proper dismantlement and environmental remediation of formerly used facilities.

MANAGEMENT:

NNSA Management:

Schenectady Naval Reactors Office

Management and Operation Contractor:

KAPL was awarded a new 5-year contract for the management and operation of the laboratory. This contract began on July 5, 2000; KAPL has the option to extend the contract for another 5 years.

(dollars in millions)

| KAPL Funding | FY 2003 | FY 2004 | FY 2005 |
|-----------------------------------|--------------|--------------|--------------|
| Naval Reactors Development | | | |
| Operating Expenses..... | 267.4 | 283.0 | 302.1 |
| Major Construction Projects | 2.1 | | 6.2 |
| Total, KAPL | 269.5 | 282.0 | 308.3 |

| Contractor Employment (End of Year) | FY 2003 | FY 2004 | FY 2005 |
|--|--------------|--------------|--------------|
| Naval Reactors | 5,560 | 5,700 | 5,720 |
| Other | 0 | 0 | 0 |
| Total Facilities | 5,560 | 5,700 | 5,720 |

LAWRENCE LIVERMORE NATIONAL LABORATORY

INTRODUCTION:

Lawrence Livermore National Laboratory (LLNL) is a national security laboratory with responsibility for ensuring the nation's nuclear weapons remain safe, secure, and reliable. LLNL is located on a one-square-mile site in Livermore, California; with a larger (10 square miles) remote explosives testing site (Site 300) situated 18 miles east of the main Livermore site.

LLNL has a primary role in the Department of Energy/National Nuclear Security Administration (NNSA) mission for assuring the safety, security and reliability of the nation's nuclear weapons stockpile and the prevention of the spread and use of nuclear weapons, as well as other weapons of mass destruction and applying technologies to address homeland security needs.

HISTORY:

Established in 1952 to augment the Nation's nuclear weapons design capability, LLNL made major advances in nuclear weapons safety and performance throughout the Cold War. To address national security needs, the Laboratory has pioneered the application of technologies ranging from high-performance computers to advanced lasers, and it has gained multiprogram responsibilities that draw on LLNL's multidisciplinary expertise.

Today, LLNL's special capabilities, required for stockpile stewardship and nonproliferation activities, as well as homeland security, enable the laboratory to meet enduring national needs in conventional defense, energy, environment, biosciences, and basic science as well as enhancing the competencies needed for the national security mission.

TABLES

FUNDING AND EMPLOYMENT:

(dollars in millions)

| FUNDING | Projected FY 2003 | FY 2004 | FY 2005 |
|--|----------------------|----------------|----------------|
| NNSA | | | |
| Directed Stockpile Work | 99.9 | 99.8 | 103.4 |
| Science Campaign..... | 88.2 | 92.5 | 97.8 |
| Engineering Campaign | 29.2 | 30.2 | 30.9 |
| Inertial Confinement Fusion Ignition and High Yield Campaign..... | 346.6 | 322.1 | 336.1 |
| Advanced Simulation and Computing Campaign ... | 175.3 | 166.9 | 148.7 |
| Pit Manufacturing and Certification Campaign..... | 4.2 | 10.1 | 17.5 |
| Readiness Campaign..... | 5.3 | 6.6 | 6.5 |
| Readiness in Technical Base and Facilities..... | 80.3 | 60.3 | 61.8 |
| Safeguards and Security | 92.9 | 95.1 | 109.6 |
| Nuclear Weapons Incident Response | 11.9 | 14.7 | 13.7 |
| Facilities and Infrastructure Recapitalization Program | 35.3 | 29.9 | 37.2 |
| Fissile Materials Disposition | 2.6 | 3.1 | 3.6 |
| HEU Transparency Implementation | 6.0 | 5.9 | 6.5 |
| International Nuclear Materials Protection and Cooperation | 21.3 | 27.3 | 17.3 |
| Nonproliferation and International Security..... | 11.1 | 9.4 | 10.7 |
| Nonproliferation and Verification R&D | 37.8 | 29.9 | 32.4 |
| TOTAL NNSA..... | 1,048.7 | 1,004.1 | 1,033.7 |

| CONTRACTOR EMPLOYMENT (End of Year) | FY 2003 | FY 2004 | FY 2005 |
|-------------------------------------|--------------|--------------|--------------|
| NNSA..... | 5,441 | 5,317 | 5,316 |
| Other Department of Energy | 1,405 | 1,413 | 1,414 |
| Work For Others..... | 1,019 | 1,170 | 1,170 |
| Total Facility | 7,865 | 7,900 | 7,900 |

Congressional Items of Interest

- None.

ACTIVITIES:

WEAPONS ACTIVITIES

Directed Stockpile Work (DSW)

LLNL is responsible for executing a program to refurbish the W80 Nuclear Explosive Package (NEP). Additionally, LLNL supports the production of the Mechanical Safe and Arm Devices for the W87 Life Extension Program (LEP) and the life of program build. For the W62, B83, W84 and W87, LLNL performs engineering and physics analyses, supported by component, subsystem and system tests, to certify that weapons conform to the requirements of their Military Characteristics (MC) and Stockpile-to-Target (STS).

Congress has recently approved NNSA and DoD plans to conduct a Phase 6.2/2A study for a Robust Nuclear Earth Penetrator weapon. The B83 is one of the two weapons to be considered in this study.

In FY 2005, subsystem tests and a full system test of the proposed design will be completed. Phase 6.2A will be initiated. All the appropriated 6.2/2A documentations for the LLNL designs will be published, including a draft Weapon Design and Cost Report and other project plans that detail how LLNL will manage, execute, and control the activities needed to accomplish Phase 6.3, Engineering Development, through Phase 6.6, Full Scale Production. LLNL is responsible for peer review of the B61 and W76 LEP Secondary, Primary performance, and engineering.

Science Campaign

For the Primary Assessment activity, (\$21.3M in FY 2005) LLNL has responsibility for developing the tools and methodology to assess and certify, [via the Quantification of Margins and Uncertainty (QMU)] the safety, reliability and performance of the LLNL-owned stockpiles, including ongoing activities in LEP and Significant Finding Investigations (SFI). As the QMU tools and methodology developed as part of the Primary Assessment Campaign are validated they will be used in assessment work required to support DSW activities at LLNL.

Engineering Campaign

The Enhanced Surety activity at LLNL will develop nuclear explosive related technologies aimed at improving the safety of nuclear weapons in abnormal environments, (\$31M in FY 2005).

Inertial Confinement Fusion Ignition and High Yield (ICF) Campaign

The National Ignition Facility (NIF), which will contain the world's largest laser and is one of the core facilities in support of the ICF Campaign, is under construction at the site. In addition to the line item construction activities, in FY 2005, the NIF Laser Demonstration Program will continue as per the planned baseline, and continue to provide additional laser capability. The ignition activities will have a specific emphasis focused on ignition target design and fabrication technology, laser-plasma interaction investigations on NIF, and the development of experimental methods for indirect drive ignition. The support of Stockpile Stewardship Program (SSP) activities will be concentrated on providing specific data for SSP campaigns and activities, as well as developing experimental capabilities and tools to support High Energy Density Physics (HEDP) experiments. Experimental Support Technology activities will include a major emphasis on the development and delivery of ICF/HED experimental support systems, including diagnostic systems, NIF cryogenic target support systems, and fabrication of necessary optics to support experiments, as well as the development of high-energy petawatt laser technology.

Advanced Simulation and Computing (ASCI) Campaign

LLNL is delivering validated physics and engineering models, and scheduling code development to support refurbishments, significant finding resolutions, and evolving future requirements. In addition, it is providing an appropriate computing environment to meet simulation requirements of the Stockpile Stewardship Program (SSP). ASCI Purple, a collaboration of the tri-lab community led by LLNL, represents the technology for delivering a 100-TeraOPS capability to the SSP in 2005, (\$145M in FY 2005). The Terascale Simulation Facility, currently under construction at LLNL, will be capable of housing the 100 TeraOps-class computers required to meet the milestones and objectives of the ASCI Campaign, (\$3.2M in FY 2005).

BlueGene/L is a next-generation massively parallel computing system designed for R&D in computational science targeted at selected applications of interest to the ASCI tri-laboratory community

and its University Alliance partners. A select, but broad set of science-application areas have been identified as an initial focus for execution on BlueGene/L. It is likely that BlueGene/L will undergo acceptance testing in late FY 2005, including full-system runs of Linpack. General use of the system for science calculations will commence after acceptance testing is complete.

Pit Manufacturing and Certification Campaign

LLNL's efforts provide independent technical assessments of the physics performance and engineering response using the latest legacy and ASCI codes; key enabling technologies required to build a modern pit facility including metal processing, casting, and shaping technologies; and requirements and process definitions of technologies required to build pits for LLNL systems.

Readiness Campaign

LLNL centers of excellence in design, modeling, simulation, materials processing, high explosives development, non-destructive evaluation and information technologies enable Advanced Design and Production Technologies efforts that, in turn, are of direct benefit to LEPs such as the W80, Core and Enhanced Surveillance, and evolving Advanced Concepts such as Robust Nuclear Earth Penetrator.

Readiness in Technical Base and Facilities (RTBF)

Stockpile Stewardship Mission Essential Facilities, the subset of direct, programmatic facilities and technical base (i.e. "capabilities"), that is direct-funded through the RTBF program (\$54.7M in FY 2005) include the Nuclear Materials Technology Program (NMTP) facilities (Superblock), the hydrotest bunkers and engineering test facilities at Site 300, the LINAC (B194) and light gas guns (B341), the High Explosive Applications Facility (HEAF), and Managing & Operating activities at the Nevada Test Site.

Construction projects currently underway at LLNL (\$6.9M in FY 2005) include: Engineering Technology Complex Upgrade, Sensitive Compartmented Information Facility, Isotope Sciences Facility, and Roof Reconstruction, Phase II (Protection of Real Property). Two projects will be initiating design at LLNL in FY 2004: Energetic Materials Processing Center and Tritium Facility Modernization.

Nuclear Weapons Incident Response

For the DOE and the Office of Emergency Response, LLNL assists in operating, exercising, and maintaining DOE's capability to provide assistance to Federal, state and local government agencies for responding to radiological accidents and incidents. LLNL deploys trained, qualified technical and professional personnel and specialized equipment and provide research and development, training, exercises, operations, maintenance and required coordination with other Federal agencies and foreign governments to effectively address current and projected threats.

Facilities and Infrastructure Recapitalization Program

Facilities and Infrastructure Recapitalization Program funded projects include replacement of failing transformers and associated electrical components in mission essential facilities; replacement/upgrades of High Efficiency Particulate Air filter housings, ductwork, Heating, Ventilation, and Air Conditioning systems and associated equipment to ensure reliability and improve worker safety in radiological facilities; replacement of aged/worn-out machine tools, equipment and supporting systems which eliminate approximately 20% downtime, improve precision/quality and permit operators to meet Stockpile Stewardship Program-mandated tolerances for nuclear weapons components. FIRP also has

initiated the complex-wide Roof Asset Management Program (RAMP) to establish and implement a corporate approach for the management of NNSA's roofing assets, which is expected to result in improved cost efficiencies, improved quality of life extension of NNSA's roofing assets, consistent approach and common standards for optimal roofing repairs and replacement, and additional deferred maintenance reduction.

Safeguards and Security

In FY 2005, LLNL will initiate a contract to replace components of the Argus system that are or will soon be obsolete. The laboratory has developed a Design Basis Threat (DBT) Implementation Plan to address new DBT protection requirements.

Nonproliferation and Verification Research and Development

LLNL improves geographic models to locate and identify regional seismic events to support nuclear explosion monitoring assessments. LLNL will deliver field-calibrated models of the seismic response for additional, specified regions of interest, and will demonstrate prototype tools for the automation of incorporating newly acquired data into these models. The lab develops and tests gamma and neutron detection materials for future commercial systems to search for and locate special nuclear material; and is a member of an interlaboratory team to investigate methodologies to establish a scientific basis for attribution to determine the origin of fissile materials. Serves as the interlaboratory coordinator on testing optical remote sensing techniques for Weapons of Mass Destruction proliferation detection/characterization; and is a recognized national leader in developing hyperspectral analysis methods for standoff detection of gases and other materials over denied areas.

International Nuclear Materials Protection and Cooperation (MPC&A)

LLNL provides operational experience in nuclear material protection, control and accounting in combination with institutional expertise in nuclear energy, international and domestic safeguards, and the assessment of the proliferation impacts on U.S. national security of foreign nuclear energy programs. The LLNL supports international MPC&A activities at several Russian Navy, Civilian, and MinAtom Weapons Complex sites, supports MPC&A sustainability and infrastructure projects for Ministry of Defense, MinAtom, GAN, Ministry of Transportation, and Russian Shipbuilding Agency, and supports activities for Radiological Threat Reduction Initiatives.

LOS ALAMOS NATIONAL LABORATORY

INTRODUCTION:

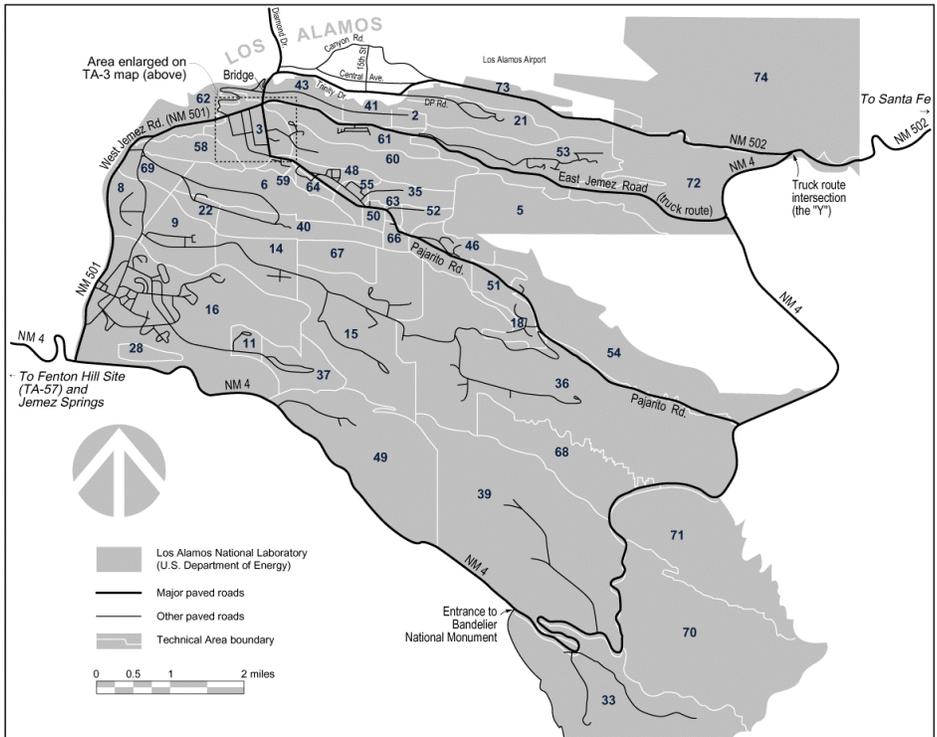
The Los Alamos National Laboratory (LANL) is located on approximately 28,000 acres, adjacent to the town of Los Alamos, New Mexico, which is approximately 25 miles northwest of Santa Fe. It was established as a nuclear weapons design laboratory in 1943, under the leadership of J. Robert Oppenheimer.

HISTORY:

LANL is a multi-program laboratory, supporting research predominantly in national security. The laboratory also supports environmental restoration, waste management, general science programs, homeland security, and work for others. The Deputy Administrator for Defense Programs is both the Cognizant Secretarial Officer, having line-management accountability for LANL, and the Lead Program Secretarial Officer, responsible for landlord activities and overall site integration and operations.

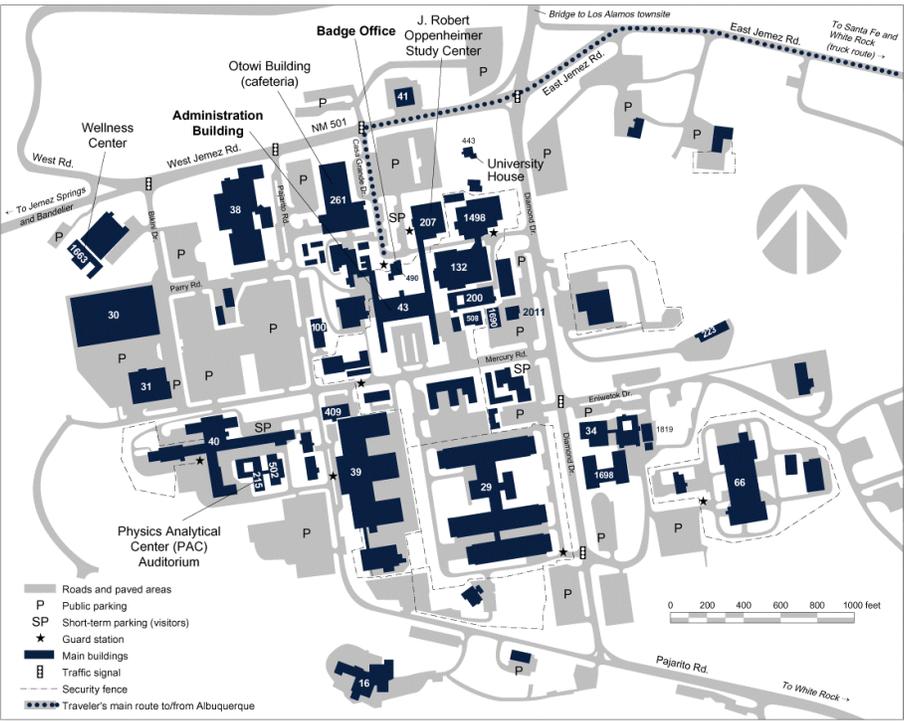
The Record of Decision for a Site-Wide Environmental Impact Statement (SWEIS) for the continued operation of LANL was published September 20, 1999. The decision allows for expanded operations, consistent with the Record of Decision for the Stockpile Stewardship and Management Programmatic Environmental Impact Statement (EIS), issued December 19, 1996, including implementation of pit manufacturing, at the level of twenty pits per year, and expansion of the low-level radioactive waste disposal facility.

The Record of Decision, administered by Department of Energy (DOE) at Los Alamos, for the conveyance and transfer of land tracts to Los Alamos County and to the Department of Interior, in trust for the Pueblo of San Ildefonso, was published March 2000. From a total of 4,120 acres of land to be conveyed or transferred under PL 105-119, the DOE at Los Alamos has conveyed to the County of Los Alamos or transferred to the Department of the Interior, in trust for the Pueblo of San Ildefonso, 2,210 acres of land. The end of FY 2004 will see a transfer of another 720 acres, and 110 acres will be transferred in FY 2005. At this point, the project will be 75% complete.



Technical Areas

- TA Nomenclature**
- 2 Omega Site
 - 3 South Mesa Site
 - 5 Beta Site
 - 6 Two-Mile Mesa South Site
 - 8 Anchor West Site
 - 9 Anchor East Site
 - 11 K-Site
 - 14 Q-Site
 - 15 R-Site
 - 16 S-Site
 - 18 Pajarito Laboratory
 - 21 DP-Site
 - 22 TD-Site
 - 28 Magazine Area A
 - 33 HP-Site
 - 35 Ten Site
 - 36 Kappa Site
 - 37 Magazine Area C
 - 39 Ancho Canyon Site
 - 40 DP-Site
 - 41 W-Site
 - 43 Health Research Laboratory/ DOE Headquarters
 - 46 WA-Site
 - 48 Radiochemistry Site
 - 49 Frijoles Mesa Site
 - 50 Waste Management Site
 - 51 Environmental Research Site
 - 52 Reactor Development Site
 - 53 Los Alamos Neutron Science Center
 - 54 Waste Disposal Site
 - 55 Plutonium Facility
 - 57 Fenton Hill Site
 - 58 Two-Mile Mesa North Site
 - 59 OH-Site
 - 60 Sigma Mesa Site
 - 61 East Jemez Site
 - 62 Northwest Site
 - 63 Pajarito Service Site
 - 64 Central Guard Site
 - 66 Central Technical Support Site
 - 67 Pajarito Mesa Site
 - 68 Water Canyon Site
 - 69 Anchor North Site
 - 71 Southeast Site
 - 72 East Entry Site
 - 73 Airport Site
 - 74 Otowi Site



Technical Area 3 (TA-3)

- SM Building Directory**
- 43 Administration
 - 2011 Advanced Computer Laboratory
 - 490 Badge Office
 - 261 Otowi Building (Cafeteria)
 - 31 Chemical Warehouse
 - 29 CMR Laboratory
 - 1690 CNLS Technical Research Building
 - 508 Computational Physics Building
 - 132 Computer Building
 - 34 Cryogenics Building "B"
 - 1819 Experimental Materials Science Laboratory
 - 41 Fire Station No. 1
 - 30 General Warehouse
 - 207 J. Robert Oppenheimer Study Cent
 - 38 Johnson Controls, Inc. Facilities
 - 1498 Laboratory Data Communications Center
 - 1698 Materials Science Laboratory
 - 409 Occupational Medical Facility
 - 215 Physics Analytical Center
 - 40 Physics Building
 - 100 Public Affairs Office
 - 39 Technical Shops
 - 66 Sigma Building
 - 502 Space Science Laboratory
 - 443 University House
 - 223 Utilities Control Center
 - 16 Ion Beam Facility
 - 1663 Wellness Center

MANAGEMENT:

National Nuclear Security Administration Management:

Los Alamos Site Office

Management and Operating Contractor:

University of California. The current contract will be competed in September 2005.

TABLES

FUNDING AND EMPLOYMENT:

(dollars in millions)

FUNDING

Operating and Management

| | Projected FY 2003 | FY 2004 | FY 2005 |
|--|----------------------|----------------|----------------|
| NNSA | | | |
| Directed Stockpile Work | 218.1 | 206.8 | 210.9 |
| Science Campaign | 77.1 | 62.7 | 93.2 |
| Engineering Campaign..... | 19.7 | 24.4 | 29.1 |
| Inertial Confinement Fusion Ignition and High Yield Campaign..... | 27.4 | 28.9 | 32.2 |
| Advanced Simulation and Computing Campaign | 160.1 | 144.4 | 153.2 |
| Pit Manufacturing and Certification Campaign..... | 208.6 | 217.1 | 220.8 |
| Readiness Campaign..... | 11.8 | 8.9 | 9.6 |
| Readiness in Technical Base and Facilities..... | 348.5 | 402.3 | 412.4 |
| Emergency Operations (NWIR) | 7.6 | 8.6 | 8.8 |
| Safeguards and Security..... | 126.5 | 120.7 | 168.3 |
| Facilities and Infrastructure Recapitalization Program | 41.1 | 45.5 | 56.7 |
| International Nuclear Materials Protection and Cooperation | 17.9 | 20.5 | 12.3 |
| Nonproliferation and Verification R&D | 78.6 | 66.8 | 75.1 |
| Russian Transition Initiatives | 5.0 | 5.0 | 5.1 |
| HEU Transparency Implementation..... | 1.6 | 2.1 | 2.3 |
| Fissile Materials Disposition | 42.0 | 34.5 | 8.6 |
| Nonproliferation and International Security..... | 16.0 | 14.3 | 14.3 |
| TOTAL NNSA..... | 1,409.9 | 1,415.6 | 1,519.2 |

CONTRACTOR EMPLOYMENT (End of Year)

| | FY 2003 | FY 2004 | FY 2005 |
|----------------------------------|--------------|--------------|--------------|
| NNSA | 6,118 | 6,069 | 5,739 |
| Other Department of Energy | 966 | 907 | 913 |
| Work For Others..... | 1,304 | 1,388 | 1,305 |
| Total Facility | 8,388 | 8,364 | 7,957 |

Congressional Items of Interest

- \$10M for RTBF Operations of Facilities.

ACTIVITIES:

WEAPONS ACTIVITIES

Directed Stockpile Work (DSW)

Los Alamos will support the B61 Life Extension Program (LEP) by working on the Canned Subassembly (CSA) of the physics package and associated seals, foams, pads and cabling. Los Alamos will support the W76 LEP, which is in Phase 6.3 by completing engineering development of W76-1 Nuclear Explosive Package and Gas Transfer System; in FY 2005, Los Alamos will continue to assist in the transfer of information and Acorn development as outlined in the tri-laboratory agreement. LANL activities support multiple systems. In this area, LANL will warrantee the safety and surety on our nuclear weapons, execute hydrotesting, ensure weapons archiving, perform studies of the nuclear weapons stockpile, perform models-based engineering and manufacturing, and provide the core competencies and capabilities for the gas transfer systems.

Science Campaign

Within the Primary Assessment Technology activity, one of LANL's principal goals is the development and application of analysis techniques, including Quantitative Margins and Uncertainties (QMU), that supports baseline model improvement. LANL will support Dynamic Materials Properties (\$28M in FY 2005) largely through use of its specific experimental capabilities to provide data for, and tests of, predictive models of material properties and behavior. The goal in Advanced Radiography (\$29M in FY 2005) is to assess and develop the capability to deduce, from radiography, the integral performance of a nuclear weapon during the primary implosion phase in order to assure the continuing reliability and safety of the stockpile. This will be accomplished by translating stockpile certification requirements into quantitative time-dependent, three-dimensional radiographic requirements, assessing current and future technologies, and developing and integrating the required capabilities for quantitative linkage to weapons performance. This area also provides for the initial optimization of the Dual-Axis Radiographic Hydrotest (DARHT) second axis and the continued evolution of DARHT over the next decade. LANL will continue to advance proton radiography capabilities and apply them to stockpile problems using the pRAD facility at the Los Alamos Neutron Science Center (LANSCE).

Within Secondary Assessment Technology LANL (\$20M in FY 2005) will identify the key elements of the functional sequence of events leading to secondary explosion, and work to resolve key issues in each element to the accuracy consistent with the overall allowable uncertainty for the weapon systems in the stockpile.

Engineering Campaign

This includes efforts to develop improved surety options, such as a new level of use-control capabilities that may be considered for incorporation in scheduled stockpile refurbishments. In addition, LANL has established science-based engineering methods to increase confidence in weapons systems through validated simulation models and high-fidelity experimental tests.

Inertial Confinement Fusion Ignition and High Yield (ICF) Campaign:

The LANL ICF effort (\$32M in FY 2005) provides quantitative experimental data and physical underpinning needed for validation of advanced modeling required in nuclear weapons certification. We participate in the pursuit of laboratory ignition by utilizing unique Los Alamos scientific and technological capabilities. This area includes the work necessary to establish the fundamental science and technology base to produce National Ignition Facility (NIF)-specification ignition capsules.

Advanced Simulation and Computing (ASCI) Campaign

Los Alamos will complete two-dimensional modern baselines for all systems in the stockpile during FY 2005 and will use those baselines in DSW and in making predictions for DynEx experiments, provide the computational tools and infrastructure used in analysis resources, improved software quality will provide data that will be used to validate ASCI models and codes.

Pit Manufacturing and Certification Campaign

The strategy of the campaign includes reestablishment of the technical capability to manufacture war reserve (WR) pits, the establishment of a manufacturing capacity required to support the nuclear weapons stockpile, and the ability to certify newly manufactured pits for entry into the stockpile without the use of nuclear testing. The near-term activity is focused on W88 pit manufacturing and certification, and long-term activities include demonstrating the capability to manufacture all pits in the enduring stockpile as well as plan for long term pit manufacturing capacity.

Readiness Campaign

At Los Alamos, two Readiness activities are performed: Advanced Design and Production Technologies (ADAPT) and Nonnuclear Readiness. Los Alamos's ADAPT activities (\$7M in FY 2005) reflect both design and production technology development--both major activities at Los Alamos. The scope of work includes all LANL production activities, plus supporting capabilities such as secure networking and certain technical business practices. Activities are principally organized according to the product(s) they are intended to support (e.g., Detonators, Tritium/Neutron Target Tube Loading, Beryllium Components, Pits, Mock Pits, and Experimental Hardware), as well as development of Models-Based Engineering tools and capabilities and a manufacturing capability for neutron tube target loading. Los Alamos also has a significant Non-nuclear production activity in developing capabilities for Los Alamos non-nuclear production as well as other plants. Scope includes deployment of processes, capabilities, and infrastructure required to meet directive schedule requirements for production and surveillance of non-nuclear components. Activities at LANL support detonator manufacturing and surveillance, neutron tube target loading, surveillance, and portions of the beryllium technology mission.

Readiness in Technical Base and Facilities (RTBF)

The RTBF activities include operating and maintaining Defense Programs-owned facilities in "warm standby" mode, including the Engineering, Tritium, Dynamic Experimentation, LANSCE, Waste Management, Nuclear Materials Technology [e.g., TA-55 & Chemistry and Metallurgy Research (CMR)], Beryllium Technology, and Nuclear Materials Storage and Critical Experiments Facility (e.g., TA-18). Warm standby work scope includes conventional facility management, infrastructure and utilities, and operation & maintenance of special equipment, (\$319M in FY 2005).

Construction (\$77M in FY 2005) projects currently in conceptual design at LANL include the TA-18 relocation project and CMR Replacement project. Design will be initiated on the Dynamic Experimentation High Explosives Characterization project in FY 2005.

Facilities and Infrastructure Recapitalization Program

The Facilities and Infrastructure Recapitalization Program (FIRP) is funding a balanced program of deferred maintenance reduction and an aggressive facility disposition program to eliminate excess facilities. FIRP funded projects have provided both direct and indirect support to the Stockpile Stewardship Program by providing quality work space that promotes worker productivity, professional interaction and retention and recruitment of the personnel needed to carry out the Laboratory's this mission. In addition, FIRP funded projects have supported upgrades and recapitalization of the infrastructure in core mission facilities. This includes the modernization of 50-year old laboratories, replacement of mechanical equipment and the repair of electrical systems. The Power Grid Infrastructure System line item construction project will be initiated in FY 2005 (\$10M) to build a third power line and eliminate the single point of failure on site. FIRP also has initiated the complex-wide Roof Asset Management Program (RAMP) to establish and implement a corporate approach for the management of NNSA's roofing assets, which is expected to result in improved cost efficiencies, improved quality of life extension of NNSA's roofing assets, consistent approach and common standards for optimal roofing repairs and replacement, and additional deferred maintenance reduction.

Safeguards and Security

Nuclear Materials Safeguards and Security Upgrades, Phase I, is underway at LANL. Two new security line item construction projects are proposed for design or design-build in FY 2005: Nuclear Materials Safeguards and Security Upgrades, Phase II (\$10M in FY 2005) and the Security Perimeter Project (\$20M in FY 2005). The laboratory has developed a Design Basis Threat (DBT) Implementation Plan to address new DBT protection requirements.

DEFENSE NUCLEAR NONPROLIFERATION

Nonproliferation and Verification Research and Development

LANL provides the U.S. Government with improved analytic tools and sensors to discriminate earthquakes and industrial activities from banned nuclear explosions. LANL begins delivering next generation of satellite based electromagnetic pulse sensors and continues developing next generation radiation sensors for nuclear explosion monitoring systems. The laboratory will develop expert unattended methods and handheld radiation detection systems to support monitoring operations for compliance to future nonproliferation policies. LANL will continue developing innovative algorithms and specialized processors to process voluminous quantities of remote sensing data into the specific information required by decision makers. The world-class radiometric calibration facility and expertise developed at LANL, as part of the multi-spectral thermal imaging small satellite program, will be used in ongoing data analysis from the satellite which is now in orbit as well as for other spectral programs. The lab develops analysis capability from the Fast On-Orbit Recording of Transient Events (FORTE) satellite data to aid in Radio Frequency sensor development.

Fissile Materials Disposition

LANL is a multi-program lead laboratory for the development of U.S. weapons pit disassembly and conversion technology. The Automated Recovery and Integrated Extraction System (ARIES)

demonstration system, located at LANL, serves as the prototype demonstration project for the production-scale facility. The lab also provides technical services, independent design review, independent assessment of the safety basis for the Mixed-Oxide Fuel Fabrication Facility , as well as support for technical aspects associated with monitoring and inspection activities. LANL also provides support to efforts associated with the plutonium conversion line in Russia.

NEVADA TEST SITE

INTRODUCTION:

The Nevada Test Site (NTS) is a unique expanse of federally controlled land and facilities in a remote region of southern Nevada. The approximate 1,375 square miles that make up the Nevada Test Site are surrounded by the Nellis Air Force Range and unpopulated land controlled by the U.S. Bureau of Land Management. Located 65 miles northwest of Las Vegas, the Nevada Test Site is one of the largest secure areas in the United States, due to buffer zones to the west, north, and east. More than 1,000 support buildings and other facilities are spread across the Nevada Test Site.

HISTORY:

In December 1950, President Harry S. Truman announced the establishment of the Nevada Proving Grounds – forerunner of the Nevada Test Site. A total of 928 nuclear tests (100 atmospheric, 828 underground) were conducted at the Nevada Test Site. The current and future missions at the Nevada Test Site are consistent with the Stockpile Stewardship and Management Preliminary Environmental Impact Statement (PEIS), December 1996, the Nevada Test Site, Site-Wide Environmental Impact Statement (SWEIS), December 1996, and the Supplemental Analysis to the Nevada Test Site, SWEIS, July 2002.



MANAGEMENT:

National Nuclear Security Administration:

Nevada Site Office.

Management and Operating Contractor:

The primary contractor is Bechtel Nevada (BN) Corporation (composed of Bechtel Corporation, Lockheed Martin Corporation, and Johnson Controls Worldwide Services). The Management and Operating (M&O) contract, originally scheduled to terminate on December 31, 2000, was extended to September 30, 2005.

TABLES

FUNDING AND EMPLOYMENT:

(dollars in millions)

| FUNDING NNSA | FY 2003 | FY 2004 | FY 2005 |
|---|----------------|----------------|----------------|
| Directed Stockpile Work | 15.4 | 17.7 | 13.8 |
| Science Campaign..... | 61.6 | 54.9 | 62.5 |
| Inertial Confinement Fusion Ignition and High Yield Campaign | 2.4 | 0 | 0 |
| Pit Manufacturing and Certification Campaign | 46.4 | 42.8 | 52.2 |
| Readiness in Technical Base and Facilities | 139.7 | 141.9 | 101.4 |
| Nuclear Weapons Incident Response | 29.8 | 28.1 | 29.4 |
| Facilities and Infrastructure Recapitalization Program | 17.2 | 18.9 | 23.6 |
| Safeguards and Security..... | 34.4 | 36.0 | 45.7 |
| HEU Transparency Implementation..... | .2 | .4 | .5 |
| Non Proliferation and Verification R&D..... | 10.2 | 7.0 | 5.0 |
| International Nuclear Materials Protection and Cooperation | 5.0 | 11.9 | 2.5 |
| Total NNSA | 362.7 | 360.2 | 336.9 |

| CONTRACTOR EMPLOYMENT (End of Year) | FY 2003 | FY 2004 | FY 2005 |
|--|----------------|----------------|----------------|
| Defense Programs | 1,962 | 1,919 | 1,908 |
| Other | 1,031 | 1,025 | 1,082 |
| Total Facility | 2,993 | 2,944 | 2,990 |

Congressional Items of Interest

- \$5M for experiments to make full use of existing and developing capabilities for Materials Properties studies, including subcritical experiments at U1a, JASPER and ATLAS
- \$5M for Research in Technical Base and Facilities (RTBF).
- \$25M for continued, upgrades, refurbishments, operations and maintenance costs for the National Center for Combating Terrorism (NCCT)

ACTIVITIES:

WEAPONS ACTIVITIES

Directed Stockpile Work

The Nevada Test Site will develop and execute Subcritical Experiments (SCEs) as defined by Los Alamos National Laboratory (LANL) and Lawrence Livermore National Laboratory (LLNL) to meet certification needs. The work scope includes project management; SCE and laser experiments; test bed construction, development, and design; and procurement and operation of diagnostics systems. Also included are diagnostic development activities required to support future experiments, including control systems, data acquisition, and data analysis. Scope of work for FY 2005 includes the execution and data recovery of Accordian experiment or SCE, diagnostic development for future SCEs, test bed construction for Accordian Prime.

Science Campaign

Bechtel Nevada (BN) provides test bed engineering and construction, diagnostics fielding, controls, and data reduction for the LLNL SCEs. Specifically, in FY 2005, BN will execute on Trumpets and Guitar SCEs.

During FY 2005, BN will also continue to analyze archived data from past nuclear events using modern computer systems and algorithms to support the LANL effort to better understand the existing database of nuclear event information. BN will also continue to support LLNL with diagnostic development and fielding of experiments in support of the Primary Assessment Technology activity, (\$40M in FY 2005).

Test Readiness is designed to ensure that an underground nuclear test could be executed within the established time frame by maintaining critical personnel, equipment, and infrastructure resources. Working with the Department of Defense and the Nuclear Weapons Council (NWC), the NNSA began transition to an 18-month test readiness posture in FY 2003. As proposed by NNSA and approved by the Nuclear Weapons Council, and supported by the FY 2004 National Defense Authorization Act, the goal is to reach an 18 month underground nuclear test readiness posture by the end of FY 2005. The transition to an 18 month readiness posture is planned for completion by the end of FY 2005 with continuing maintenance activities for the foreseeable future.

BN will continue to support diagnostic development and fielding of experiments supporting the National Weapons Laboratories. BN will provide support to the Sandia National Laboratories (SNL) in experiments (e.g., Isentropic Compression experiments) and diagnostic development

(e.g., VISAR and Pyrometry diagnostics). Special Nuclear Materials (SNM) experiments and diagnostic support at the Joint Actinide Shock Physics Experimental Research (JASPER) are planned to support both LANL and LLNL. BN will also support experiments and diagnostic leveraging gas gun capabilities at LANL. BN will also supplement LANL's effort to conduct materials properties experiments on the Atlas machine at the Nevada Test Site by providing machine operation and diagnostic support. BN will continue to improve and field the unique diagnostics required to obtain Atlas data.

BN will continue to provide support to the LANL efforts on Dual-Axis Radiography Hydrodynamic Test (DARHT) and other advanced radiography test beds.

BN, through the Secondary Assessment Technology activity, (\$5.7M in FY 2005) will provide technical services at the Laboratory for Laser Energetics (LLE), Omega, and LLNL Janus Lasers in support of LLNL. BN will continue to support SNL in Z Machine core diagnostic development and characterization on experiments, including X-ray, Optical, Neutron, other diagnostic-related capabilities, and calibration sources and processes.

Pit Manufacturing and Certification

The major activities during FY 2005 include the completion of the Unicorn and Krakatau SCEs and the preparation for future execution of Unicorn Prime and Pinto/Colt SCEs. BN will continue test bed construction operations at the Nevada Test Site and research and development work in direct support of the future SCEs.

Readiness in Technical Base and Facilities (RTBF)

Specific facilities include, Device Assembly Facility (DAF), U1a Complex, JASPER, Control Point Complex, Atlas, High Explosive Facility, BN Los Alamos Technical Facility, BN Livermore Technical Facility, and the North Las Vegas Complex. Key facility activities include sub-critical experiments at U1a, dynamic material property experiments at JASPER, nuclear material handling and weapons incident response at DAF, and pulse power experiments at Atlas.

In FY 2005, the NTS Equipment Revitalization Program will continue to replace and modernize NTS equipment that is obsolete. The Atlas Relocation to the NTS project is nearing completion, and design will begin in FY 2004 on a project to Replace NTS Fire Station No. 2.

Nuclear Weapons Incident Response

NNSA's Nuclear Emergency Search Team (NEST) is based at Nellis Air Force Base, Las Vegas, Nevada, for West Coast response and Andrews Air Force Base, near Washington, D.C., for East Coast response. The NEST can respond to any type of emergency involving radioactive materials in the U.S. or abroad.

Facilities and Infrastructure Recapitalization Program (FIRP)

The FIRP activities include incremental maintenance and infrastructure investments above the base needed to extend facility lifetimes, reduce the risk of unplanned facility system and facility equipment failures or increase operational efficiencies and effectiveness. Recapitalization addresses ongoing issues that aren't addressed in current base efforts, by obviating the need for new replacement facilities and increasing facility and site operational efficiencies. Additionally

this element will fund maintenance efforts that reduce maintenance backlogs, and eliminate the need for unplanned repairs for failed facility components. FIRP also has initiated the complex-wide Roof Asset Management Program (RAMP) to establish and implement a corporate approach for the management of NNSA's roofing assets, which is expected to result in improved cost efficiencies, improved quality of life extension of NNSA's roofing assets, consistent approach and common standards for optimal roofing repairs and replacement, and additional deferred maintenance reduction.

Safeguards and Security

This program ensures the protection of NNSA facilities in an integrated, consistent, and complex-wide manner. The program provides Physical Security through a combination of operational security equipment, personnel and procedures to protect facilities, materials and information against theft, sabotage, diversion, or other criminal acts, and Cyber Security for defining and implementing policies and procedures for information protection and the design, development, integration, and deployment of all cyber security-related and infrastructure components at NNSA sites. The site has developed a Design Basis Threat (DBT) Implementation Plan to address new DBT protection requirements.

DEFENSE NUCLEAR NONPROLIFERATION

Non-Proliferation and International Security

Includes activities, as directed by Headquarters (HQ), to promote, through the use of technology, the reduction of threats to national security and world peace posed by nuclear, chemical, and biological weapons proliferation and illicit materials trafficking, and assist in fulfilling U.S. commitments for treaty monitoring through development of technology.

PANTEX PLANT

INTRODUCTION:

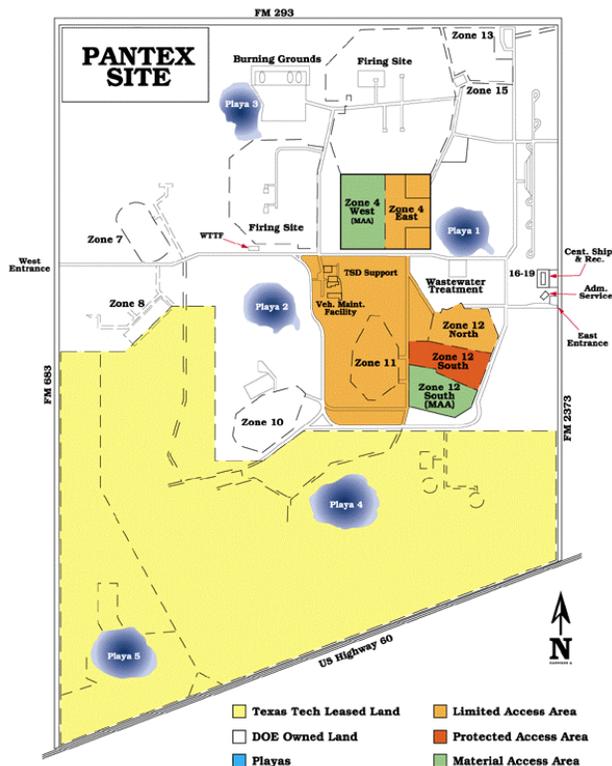
The Pantex Plant is located on 16,000 acres in the Texas Panhandle, approximately 17 miles northeast of Amarillo, Texas.

HISTORY:

Constructed by the U.S. Army, in 1942, as a conventional bomb plant, Pantex was decommissioned after World War II and sold to Texas Tech University as excess government property. In 1951, the Atomic Energy Commission (AEC) reclaimed 10,000 acres of the site for nuclear weapons work from Texas Tech. The remaining 6,000 acres were reclaimed by 1989 and are leased from Texas Tech.

Pantex assumed responsibility for weapons maintenance and modification in the mid-1960s, when plants that had been performing those tasks closed. With the closure of the AEC Burlington Plant in Iowa in 1975, Pantex became the nation's only assembly and disassembly point for nuclear weapons.

The current and future missions are consistent with the Records of Decisions for the Stockpile Stewardship and Management Programmatic Environmental Impact Statement (PEIS), December 19, 1996, and the Storage and Disposition of Surplus Weapons Usable Fissile Materials PEIS, January 14, 1997.



MANAGEMENT:

National Nuclear Security Administration Management:

Pantex Site Office

Management and Operating Contractor:

BWXT Pantex, LLC was awarded a 5-year contract for the management and operation of the plant. This contract began February 1, 2001 and has a value of \$1.7 billion over 5 years. After the contract period, Department of Energy (DOE) has the option to extend the contract for another 5 years.

TABLES

FUNDING AND EMPLOYMENT:

(dollars in millions)

| FUNDING | FY 2003 | FY 2004 | FY 2005 |
|--|----------------|----------------|----------------|
| NNSA | | | |
| Directed Stockpile Work | 115.5 | 121.6 | 115.4 |
| Engineering Campaign | 3.3 | 6.6 | 4.1 |
| Readiness Campaign | 19.1 | 31.3 | 40.1 |
| Readiness in Technical Base and Facilities | 148.7 | 139.1 | 156.1 |
| Nuclear Weapons Incident Response | 1.0 | 1.1 | 1.2 |
| Safeguards and Security | 89.1 | 93.0 | 109.8 |
| Facilities and Infrastructure Recapitalization Program | 27.3 | 29.6 | 36.9 |
| Fissile Materials Disposition | 8.0 | 8.3 | 8.7 |
| Other NNSA | 1.0 | .6 | 1.6 |
| Total, NNSA | 409.2 | 431.3 | 471.6 |

| CONTRACTOR EMPLOYMENT (End of Year) | FY 2003 | FY 2004 | FY 2005 |
|--|----------------|----------------|----------------|
| NNSA | 3,410 | 3,405 | 3,308 |
| Other | 89 | 94 | 91 |
| Total Facility | 3,499 | 3,499 | 3,399 |

Congressional Items of Interest

\$5M for RTBF Operations of Facilities will be used for the following activities: 12-84 Production Bay LINAC Installation; Electro Static Discharge (ESD) Flooring Installation; Production Cells Penetration Leak Reduction; 12-52B Metrology Lab High Pressure Calibration System Replacement; 12-53 Metrology Calibration Facility Spectrum Analyzer Replacement; Plant Telephone System Upgrade; 12-21A Explosive Radiography HE Real-Time Radiographic Inspection Upgrade; Sitewide Backflow Prevention Installation

ACTIVITIES:

WEAPONS ACTIVITIES

Directed Stockpile Work (DSW)

Pantex is the assembly/disassembly plant for all nuclear weapons. Costs include procurement of materials (exclusive of nuclear materials); fabrication and assembly of nuclear weapons and weapon components; lifetime surety maintenance and reliability assessment of the enduring stockpile; weapon dismantlement and disposal; and maintenance of field training manuals for activities that directly

support weapons in the enduring nuclear stockpile, including current maintenance; day-to-day care, and development, engineering, and certification activities to support planned life extensions.

Engineering Campaign

BWXT Pantex supports the Enhanced Surveillance activity of Engineering Campaign strategic objectives by performing aging studies on explosives and nonnuclear materials and components and providing the results to the design agencies. BWXT Pantex also works with the design labs to develop and deploy new diagnostics tools for implementation into DSW.

Readiness Campaign

The Pantex Plant is dependent upon the Advanced Design & Production Technologies (ADAPT) and High Explosives (HE) and Weapons Operations activities for the Enterprise and Science Based Tools and Process Development to establish processes to meet Base Workload and Life Extension Program (LEP) requirements.

Readiness in Technical Base and Facilities (RTBF)

The RTBF Program provides the physical infrastructure and operational capabilities required to conduct the DSW and Campaign activities. This includes ensuring that facilities are operational, safe, secure, compliant, and that a defined level of readiness is sustained to perform the current and future Pantex mission. In addition to the RTBF Program elements, the companion programs and Construction work cooperatively with the RTBF elements. Construction projects currently in design and scheduled for construction in FY 2004 and FY 2005 at Pantex include: Special Nuclear Material (SNM) Component Requalification facility, Building 12-44 Production Cells Upgrade, and Building 12-64 Production Bays Upgrade.

Facilities and Infrastructure Recapitalization Program (FIRP)

FIRP has initiated the complex-wide Roof Asset Management Program (RAMP) to establish and implement a corporate approach for the management of NNSA's roofing assets, which is expected to result in improved cost efficiencies, improved quality of life extension of NNSA's roofing assets, consistent approach and common standards for optimal roofing repairs and replacement, and additional deferred maintenance reduction. The Roofing Asset Management Program (RAMP) has replaced erosion control systems over four large mission critical facilities used to develop and perform testing on high explosives. In the area of facility disposition, operating costs have been reduced by removing over 40,000 gross square feet of excess facilities. Two design projects will be initiated in FY 2005: Electrical Distribution System Upgrade and Gas Main and Distribution Lines Upgrade.

Safeguards and Security

In FY 2005, the Pantex Plant will enhance specifically identified weapons for use by protective forces to intensify capability against terrorist threats. The plant has developed a Design Basis Threat (DBT) Implementation Plan to address new DBT protection requirements.

DEFENSE NUCLEAR NONPROLIFERATION

Fissile Materials Disposition

The Pantex Plant stores surplus pits pending shipment to Los Alamos National Laboratory to support the Pit Disassembly and Conversion Facility (PDCF) technology demonstration. The Pantex Plant also packages and stores surplus pits for future shipment (estimated to begin around FY 2010) to the SRS for conversion in the PDCF prior to fabrication into Mixed-Oxide fuel.

SANDIA NATIONAL LABORATORIES

INTRODUCTION:

Sandia National Laboratories/New Mexico (SNL/NM) is located on the 75,520 acre Kirtland Air Force Base military reservation, about 6.5 miles east of Albuquerque, New Mexico. It occupies nearly 9,000 acres on the Kirtland reservation and has additional facilities in Livermore, California (400 acres), Kauai, Hawaii (120 acres) and Tonopah, Nevada (600 square miles).

HISTORY:

The Sandia/NM site was a branch of the Los Alamos National Laboratory (LANL) before becoming a separate entity, in 1949, under management of the American Telephone and Telegraph Company. In 1993, Martin Marietta-Lockheed Martin assumed responsibility for the Sandia National Laboratories (SNL) management contract. The SNL/Livermore site, in Livermore, California opened in 1956.

A Record of Decision on the Site-Wide Environmental Impact Statement for the continued operation of the laboratory was published in December 1999. The preferred alternative is for expanded operations consistent with the Record of Decision for the Stockpile Stewardship and Management Programmatic Environmental Impact Statement, issued December 19, 1996. The statement includes the environmental analysis for the Microsystems and Engineering Science Application (MESA) facility.

The Deputy Administrator for Defense Programs is both the Cognizant Secretarial Officer, having line management accountability for SNL, and the Lead Program Secretarial Officer, responsible for landlord activities and overall SNL site integration and operations.

MANAGEMENT:

National Nuclear Security Administration Management:

Sandia Site Office

Management and Operating Contractor:

Lockheed Martin Corporation. The current contract expires September 30, 2008.

TABLES

FUNDING AND EMPLOYMENT:

(dollars in millions)

| FUNDING | FY 2003 | FY 2004 | FY 2005 |
|--|----------------|----------------|----------------|
| NNSA | | | |
| Directed Stockpile Work | 406.7 | 439.3 | 451.6 |
| Science Campaign..... | 14.3 | 14.6 | 15.3 |
| Engineering Campaign | 208.0 | 184.8 | 161.9 |
| Inertial Confinement Fusion Ignition and High Ignition and High Yield Campaign..... | 36.6 | 45.6 | 46.3 |
| Advanced Simulation and Computing..... | 148.0 | 137.4 | 130.8 |
| Readiness Campaign..... | 21.5 | 24.4 | 23.8 |
| Readiness in Technical Base and Facilities..... | 206.8 | 259.6 | 201.2 |
| Nuclear Weapons Incident Response | 7.9 | 8.3 | 8.5 |
| Safeguards and Security..... | 68.8 | 75.5 | 93.5 |
| Facilities and Infrastructure Recapitalization Program | 25.2 | 28.5 | 34.7 |
| Nonproliferation and Verification R&D | 77.8 | 71.4 | 64.8 |
| International Nuclear Materials Protection and Cooperation | 59.9 | 55.6 | 54.2 |
| Russian Transition Initiatives | 4.3 | 4.4 | 4.5 |
| Nonproliferation and International Security..... | 18.9 | 24.4 | 18.0 |
| Other NNSA..... | 2.1 | 2.9 | 2.9 |
| TOTAL NNSA..... | 1,306.8 | 1,376.7 | 1,312.0 |
| CONTRACTOR EMPLOYMENT (End of Year) | | | |
| NNSA..... | 5,059 | 5,075 | 5,125 |
| Other Department of Energy | 470 | 478 | 487 |
| Work For Others..... | 2,257 | 2,282 | 2,320 |
| Total Facility | 7,959 | 8,009 | 8,107 |

Congressional Earmarks

- \$4M to initiate assessments and initial development/testing for Z Pinch inertial fusion energy, (ICF).
- \$5M for Z Beamlet laser modifications to the Z machine, (RTBF).

ACTIVITIES:

WEAPONS ACTIVITIES

Directed Stockpile Work (DSW)

SNL supports DSW activities to: ensure the reliability, safety and security of the current and future nuclear weapon stockpile in an affordable manner; define, prioritize and integrate the science and technology needs of the future stockpile while reducing risk, cycle times and cost; deliver all required production hardware on time and at the lowest achievable cost; assure integration occurs without costly gaps and overlaps among Defense Programs and Sandia National Laboratories' (SNL) Nuclear Weapons Strategic Management Unit programs; acquire, nurture, and deploy the people necessary to carry out the mission and provide them with the knowledge and information to do their job in a secure manner; and ensure the Nation has confidence in the SNL ability to assure the surety of the nuclear weapons stockpile and protect the information entrusted to SNL.

SNL supports the Life Extension Program (LEP) activities and, in FY 2005, will support the W76-1 Development Joint Test Assemblies (JTA) 1-2 and 1-3. In September 2005, for the October 2005 follow-on CINC (commander-in-chief) evaluation test (FCET) – 34 and on the W80-3, SNL will conduct final design review and independent peer review (IPRs) and issue associated engineering releases per the W80-3 baseline schedule. Within the Enduring Stockpile activities, SNL supports the requirements to keep the stockpile safe, secure and reliable by supporting weapon alterations (ALTs) and, in FY 2005, will conduct B61-3,4,7,10, & 11 ALT 356/358/359 development, design, and peer review and initiate flight test by the end of FY 2005. Within the production mission, in FY 2005, SNL will complete all production deliverables in accordance with the W76 Program Management Document (PMD) schedules and the LEP Integrated Schedules by the end of September 2005.

In addition, Sandia will begin testing JTA 4 qualification unit and complete the W87 JTA 4 Final Design Review in February 2005. Finally, SNL activities support multiple systems and, in this area, SNL will support Use Control System Development, JTA technology development, Pre-Phase 3 Studies, Code Management System Initial Operational Capability, U. S. Strategic Command Advanced Code and Control/Navy Depot, AFMC Depot, Pantex, and the Advanced Military Technologies Memorandum of Understanding.

Science Campaign

SNL leverages its unique capabilities as the DOE Pulsed Power Center for Excellence for a variety of Science Campaign missions. These include design, development, and deployment of state of the art compact, reliable, and high intensity flash x-ray radiographic sources for SubCritical Experiments (SCEs) at the Nevada Test Site (NTS) and above-ground dynamic experiments at Los Alamos National Laboratory (LANL) and Atomic Weapons Establishment (AWE). SNL also develops intense energetic radiation sources, sophisticated x-ray diagnostics, and the Z-Beamlet Laser radiography capability and supports their utilization by LANL for Secondary Assessment Technology (\$2.1M in FY 2005) in radiation transport, complex hydrodynamics, and integrated implosions. Pulsed power also provides another unique capability to isentropically compress (i.e. shocklessly) and shock compress materials to high pressures thus providing equation of state and constitutive property data to SNL, LANL and Lawrence Livermore National Laboratory (LLNL) materials communities for inclusion in models and the quantification of margins process. In addition, SNL is developing new material processes and modeling in nonnuclear materials to advance the state-of-the-art.

SNL supports other areas within the Science Campaign Subprogram. In the Primary Assessment Technology activities, (\$5.1M in FY 2005) SNL, with Bechtel Nevada and LANL, is deploying the twin pulsed Cygnus accelerators at the NTS for the Armando SCE and are developing advanced high intensity electron sources for more penetrating future dynamic experimental missions. In the Dynamic Materials Properties activities, (\$7.9M in FY 2005) SNL will provide equation of state (EOS) data on explosives and byproducts plus validate multi-materials sintering models. Within the Secondary Assessment Technology activities, SNL will prepare for utilizing the higher currents that will be available when the Refurbished Z facility is commissioned in FY 2006.

Engineering Campaign

Through the Engineering Campaign, Sandia is developing the product technologies and assessment tools required to support the design, qualification, and continued certification of the existing nuclear weapon stockpile, currently planned refurbishments, and any potential new weapon developments, as authorized. Specifically, Enhanced Surety activities (\$33 M in FY 2005) develop architectures, subsystems, components, and technologies to enhance the safety, security, and use control of the stockpile. Scheduled refurbishments provide one timeline against which to mature technologies, and the campaign is now developing surety options and technologies for the B61 and W78 LEPs.

Weapons Systems Engineering Assessment Technology activities (\$23 M in FY 2005) provide state-of-the-art experimental capabilities that are closely integrated with our computational activities and activities that are targeted to support the qualification, certification, and assessment of enduring stockpile systems and Stockpile LEPs. Nuclear Survivability activities (\$22 M in FY 2005) develop the qualification technologies needed to assess the performance of nonnuclear components in hostile environments. Development of radiation-hardened processes and technologies will also be demonstrated. Enhanced Surveillance activities at Sandia provide key thrusts in Sandia's program for the development of advanced surveillance testers for the Weapons Evaluation Test Laboratory (WETL), development of advanced telemetry for enhanced fidelity instrumentation, prototyping of a modern component surveillance program, and the fundamental materials research necessary to underpin advanced materials and subsystem models.

Sandia's largest-to-date construction project, the Microsystems Engineering Sciences and Applications (MESA) Complex, officially broke ground on major facility construction activities on August 19, 2003.

Inertial Confinement Fusion Ignition and High Yield (ICF) Campaign

The SNL ICF activities support the High Energy Density Physics (HEDP) experimental program on the Z pulsed power facility. In FY 2004 and FY 2005, SNL will be reaching full single shift operation of the Z facility to accommodate a greater number of the requested stockpile stewardship experiments (the Dynamic Materials, Secondary Assessment Technology, and Nuclear Survivability activities and DSW issues), pulsed power ICF and x-ray source development, and a combination of basic science, z-pinch physics, power flow, and Inertial Fusion Energy experiments. The ICF Subprogram also maintains, operates, and develops the diagnostics capability associated with the Z-Beamlet back lighter facility that is coupled to the Z pulsed-power facility. Research at these facilities is performed in cooperation and collaboration with the other national laboratories, Defense Threat Reduction Agency, universities, and Atomic Weapons Establishment.

Advanced Simulation and Computing (ASCI) Campaign

The ASCI activities at Sandia will deliver validated software for application to the SNL nuclear weapon stockpile mission, the computing infrastructure to provide a user environment for the SNL weapon engineers and analysts, and the ASCI-scale computing platforms for both capability and capacity computing requirements. SNL supports numerous areas within the ASCI Campaign that are integrated across the nuclear weapons complex. In FY 2005, SNL will move the 40-T Red Storm computer into a full production environment. Also, In FY 2005, SNL will deliver a validation process to support the W76-1 qualification in hostile blast and impulse environments, deliver validated models for thermal-mechanical shock for first application to the W76-1, and deliver a validated model for 3-Dimensional box internal electromagnetic pulse for first application to the W76-1.

Construction projects in support of ASCI that are currently underway at Sandia include: the Distributed Information Systems Laboratory (DISL) in Livermore, California and the Joint Computational Engineering Laboratory in Albuquerque.

Readiness Campaign

SNL supports numerous areas within the Readiness Campaign. For the Advanced Design and Production Technologies (ADAPT) activities, (\$17.6 M in FY 2005) SNL provides a leadership role as the Nuclear Weapons Complex system integrator, having a significant role in production and associated process development decisions and as the engineering Design Agency. SNL leads in the support of enabling technologies for production of advanced concepts. SNL also leads in the enterprise integration functions due primarily to the leadership and expertise in the information environment designs and developments. The ADAPT activities will support high priority activities currently underway including complete complex-wide availability of secure, distributed electronic access to weapon information (FY 2006); and complete highest-priority Nuclear Weapons Complex Technical and Infrastructure Business Practices. (FY 2005)

The SNL Nonnuclear Readiness role (\$6.1 M in FY 2005) is scaled to the respective portion of production responsibilities and is generally, at this time, limited to the replacement or refurbishment of obsolete equipment, primarily testers for neutron generators, for SNL production mission responsibilities

Readiness in Technical Base and Facilities (RTBF)

The types of projects within RTBF range from the staffing and operation of complex experimental capabilities (e.g., Z, SNL Pulsed Reactor, and Tech Area-III Full Scale Test Facilities) or production capabilities (e.g., Microelectronics Development Laboratory and Neutron Generator Plant) to the infrastructure fundamentals of Decommissioning and Demolition and General Plant Projects (GPPs). The common thread is that the RTBF activities are essential to develop and maintain the suite of capabilities necessary for SNL to be able to carry out its Defense Program missions today and in the future.

Construction projects currently in design or underway at Sandia include: Weapons Evaluation Test Laboratory (being constructed by SNL at Pantex); Test Capabilities Revitalization, Phase I; and Exterior Communications Infrastructure Modernization. Design will be initiated in FY 2005 for the Test Capabilities Revitalization, Phase II, project.

Safeguards and Security

In FY 2005 through FY 2007, efforts will support the restart of the Sandia Pulse Reactor, which will be used to support a Defense Programs Weapons Initiative. In FY 2005-09 SNL will complete four phases to develop a baseline for transition from an aging manually-operated electronic security system to an automated access control function.

As part of the National Threat Level Alert System, the laboratories may occasionally have to implement additional compensatory security measures. These periods of heightened security require an increased expenditure of funds and use of resources. The laboratories have developed a Design Basis Threat (DBT) Implementation Plan to address new DBT protection requirements.

Nuclear Weapons Incident Response (NWIR)

SNL NWIR activities include the conduct of operations and technical integration in support of the Joint Technical Operations Team (JTOT), Accident Response Group (ARG), and Home Team (HT) in the form of: Technical Support, Research & Development, Intelligence Support, Field Operations, and Training & Exercises.

Facilities and Infrastructure Recapitalization Program

Refurbishment projects for the facilities housing the Light Initiated High Explosive Complex, Radiography, Vibration Facility, Explosives Applications, and the Photometrics and Data Acquisition activities are essential to meet NNSA requirements. The Z-Accelerator facility repairs are meeting the demands of several Campaigns. Execution of the deferred maintenance projects for these facilities is reducing the backlog for the site. Facility Disposition activity has reduced excess facility areas by some 150,000 gross square feet at the site.

Two projects will be initiating design at Sandia: the New Master Substation, TA I & IV, will begin design in FY 2004, and the TA-I Heating System Modernization project will begin design in FY 2005.

DEFENSE NUCLEAR NONPROLIFERATION

Nonproliferation and International Security

The Treaty Verification & Nonproliferation and International Security (NIS) Technology Program involves the development of the technology to monitor compliance with treaties relating to nuclear testing limitations. These technologies encompass both space-based and earth-based sensor systems. Successful development and deployment of these systems will allow the United States and, in some cases, our international partners, to monitor treaty compliance.

The International Security Program involves five broad areas of responsibility including: International Nuclear Security (particularly Russia), International Border Security, Regional Security Cooperative Engagements, International Safeguards and Physical Security, and other NIS Activities Internationally. These activities involve cooperative bilateral or multilateral activities that differentiate this program from other unilateral activities that support the U.S. NIS strategies. Objectives are accomplished by providing technically informed policy support including, where appropriate, the development of integrated technology solutions to address the needs of a wide range of partners and customers, both domestically and internationally.

Nonproliferation and Verification Research and Development

The SNL will develop, demonstrate, and validate improvements to data processing and analysis tools in

support of nuclear explosion monitoring. Sandia will support the development new spectral detectors for next generation of U.S. satellite-based monitoring to detect nuclear detonations. SNL serves as the national center on research on Synthetic Aperture Radar systems and analysis methods for national security applications. SNL will continue field-testing a remote chemical detection system for stand off detection of nuclear weapon production activities. SNL will continue to develop radiation algorithms to improve performance of commercially available handheld and portal systems.

International Nuclear Materials Protection and Cooperation

Based on their extensive work for the NNSA, Department of Defense (DoD), and other federal agencies, SNL provides experience with the design and installation of physical protection systems and has specific technical expertise in access delay systems; intrusion detection and assessment systems and associated display systems; access control systems; and vulnerability analysis procedures, processes and associated computer codes. The SNL also provides expertise to advise Russian institutes and enterprises as they develop and implement physical protection systems, regulations, and training programs and to support NNSA's Second Line of Defense and Radiological Threat Reduction programs.

SAVANNAH RIVER SITE

INTRODUCTION:

The Savannah River Site (SRS) is a Department of Energy (DOE)-owned facility covering approximately 310 square miles bordering the Savannah River in western South Carolina. The Office of Environmental Management is the site landlord. The Savannah River Site is designated as a National Environmental Research Park and covers a portion of Aiken, Barnwell, and Allendale counties.

The SRS Tritium Facility occupies approximately 25 acres in the northwest portion of H-Area, near the center of the Savannah River Site. The SRS Tritium Facility includes a total of five production structures, thirteen administrative office structures, five storage structures and twenty-two service structures. The five production buildings house tritium reservoir loading and unloading, tritium recovery and purification, reservoir reclamation, reservoir surveillance testing and evaluation, and Life Storage Program research activities. The Tritium Extraction Facility (TEF), capable of extracting tritium gas from targets to ensure the future availability of tritium, is being constructed in this area. Additional significant Savannah River Technology Center facilities for tritium and materials research and development are located elsewhere on the Savannah River Site.

HISTORY:

The SRS is a key U.S. DOE facility constructed in the early 1950s to produce basic materials used in nuclear weapons, primarily tritium and plutonium. DuPont managed the site until April 1989. Since that time, Westinghouse Savannah River Company (WSRC) Limited Liability Company (LLC) has been the operating contractor of SRS. The company is a consortium of four partner firms: Westinghouse Savannah River Company, Bechtel Savannah River Company, Inc., BNFL Savannah River Corporation, and BWXT Savannah River Company. Today, in addition to various environmental management activities, recycling and reloading tritium to keep the nation's supply of nuclear weapons ready is a continuing site mission.



Aerial Photo of SRS Tritium Facility

MANAGEMENT:

NNSA Management:

Savannah River Site Office
Fissile Material Disposition Office, SRS

M&O Contractor:

WSRC is the operating contractor and the current expiration date is September 30, 2006.

TABLES

FUNDING AND EMPLOYMENT:

(dollars in millions)

| FUNDING | FY 2003 | FY 2004 | FY 2005 |
|---|---------------|---------------|---------------|
| NNSA | | | |
| Directed Stockpile Work | 30.1 | 29.6 | 40.6 |
| Science Campaign | 1.8 | 1.6 | 2.8 |
| Engineering Campaign | 0.5 | 1.2 | 1.0 |
| Pit Manufacturing and Certification Campaign..... | 1.9 | 5.5 | 9.0 |
| Readiness Campaign..... | 94.7 | 99.1 | 55.5 |
| Readiness in Technical Base and Facilities..... | 102.9 | 90.9 | 107.1 |
| Nuclear Weapons Incident Response | 0.6 | 0.1 | 1.5 |
| Safeguards and Security..... | 11.6 | 12.6 | 13.1 |
| Facilities and Infrastructure Recapitalization Program | 8.4 | 7.8 | 8.2 |
| Fissile Materials Disposition..... | 43.5 | 46.6 | 47.4 |
| Nonproliferation and International Security | 4.6 | 4.0 | 3.4 |
| Int'l Nuclear Materials Protection and Cooperation | 0.3 | 0.2 | 0.5 |
| Russian Transition Initiatives | 1.0 | 1.0 | 1.0 |
| Total NNSA | 305.3 | 303.3 | 294.4 |
| CONTRACTOR EMPLOYMENT (End of Year) | | | |
| NNSA..... | 2,220 | 2,217 | 2,245 |
| Other DOE..... | 10,724 | 10,705 | 10,615 |
| Work For Others..... | 41 | 41 | 41 |
| Total Facility | 12,985 | 12,963 | 12,901 |

Congressional Items of Interest

- None

ACTIVITIES:

WEAPONS ACTIVITIES

Directed Stockpile Work (DSW)

SRS meets the DSW requirements by processing tritium and inert reservoirs and associated components in support of Limited Life Component Exchange (LLCE), Life Extension Programs (LEPs), Shelf Life Tests, and Reservoir Surveillance Operations. Reservoirs and associated parts will be processed as necessary to support LLCE schedules per production directive requirements for the enduring stockpile. Reservoir-processing operations include receiving, proof testing, loading, fill stem pinch welding, finishing, assembly, inspection, and packaging for shipment. Returned reservoirs will be unloaded to support production needs and to meet Reservoir Age Management Program (RAMP) goals. Reusable unloaded reservoirs will be reclaimed and reprocessed for stockpile service; retired reservoirs will be welded closed to prepare them for disposal. Reservoirs returned from retired weapons systems will be unloaded, welded closed for disposal, or managed per shelf life testing requirements.

The LEP activities include costs for planning, pre-production, production, and evaluation associated with the refurbishment of the B61-7/11, W76-1, and W80-2/3. These activities involve weld and fixture development, loading and processing of prototypes, initial life storage, qualification, and first production

units. Shelf Life Test activities also include environmental conditioning, function testing, precision unloading, hydraulic burst testing and destructive examination of tritium reservoirs, metallography reporting and data analysis. The Life Storage Program (LSP) conducts research to determine the effects of long-term tritium exposure on reservoir designs and materials to improve personnel protection and increase the safety of weapons components. SRS supports the LLCE mission by meeting monthly shipping requirements in the current version of the Production & Planning Directives. SRS will begin processing an additional component for the B61 LEP. Material testing for the W84 system begins in FY 2005.

Science Campaign

Science Campaign efforts at SRS include study of tritium storage materials, tritium effects on materials, and processes.

Engineering Campaign

The Engineering Campaign activities involve development of new surveillance techniques for gas transfer systems. In FY 2005, SRS will begin to develop and implement new surveillance technologies required for the Acorn reservoir systems and additional new requirements for the Terrazzo.

Readiness Campaign

The SRS role in support of the Tritium Readiness program is to design, construct, start-up, and operate a Tritium Extraction Facility (TEF). The TEF will provide the capability to receive and extract tritium-containing gases from tritium producing burnable absorber rods (TPBARs). This will provide sufficient tritium to support stockpile requirements. The TEF will be located adjacent to building 233-H in order to share common facilities. The TEF will be designed for a 40-year operating life. This activity also includes the Other Project Costs (OPCs) portion of TEF. In FY 2005, this will entail component system and integrated start-up testing, development of operating and maintenance procedures, and training of the operating staff. This will entail completion of Construction for the Tritium Process Building and the Remote Handling Building, plus subsystems within these buildings, continued development of the Facility Safety Analysis Report, and delivery of remaining engineered equipment. Additional start-up tests will be performed as systems are turned over from construction to start-up. Training of operating staff and procedure development efforts will continue.

At SRS, ADAPT activities are focused on tritium production and processing technologies and on the development of new reservoirs and the associated reservoir processing and inspection technologies. The goal of Enterprise Integration (EI) is to provide the infrastructure that makes information readily available and to provide the tools and business practices to fully utilize the information. Secure computer networking capabilities and inventory management tools are part of the EI effort at SRS. Two major items will be provided in FY 2005: 1) Initiation of development of hydride alloy manufacturing capabilities (about \$2 m). To date, all work in this area has been at a university. The technology transfer to SRS will begin for completion of development work. 2) Initiation of SRS activities in the Integrated Design Engineering and Manufacturing MTE (about \$1M). This will bring SRS in line with the rest of the complex in the world of models-based engineering and other agile manufacturing activities.

Readiness in Technical Base and Facilities (RTBF)

RTBF work maintains the facilities and infrastructure in a state of readiness in support of mission operations including LLCE, LEPs, Shelf Life Test, and Reservoir Surveillance Operations. Operations of Facilities include facilities management and support activities that maintain the facilities and

infrastructure in a state of readiness for mission operations. Preventive, predictive, and corrective maintenance of process and infrastructure equipment/facilities is performed. Environmental, safety, and health activities are conducted to ensure the well being of SRS workers, the public, and the environment. Contracted costs of providing utilities to the Tritium Facility are included, as well as OPCs associated with RTBF line item projects. Capital Equipment and General Plant Projects that meet base maintenance and infrastructure needs are planned and executed to maintain the safety, utility, and capability of the process facilities.

Material Recycle and Recovery involves recovery and purification of tritium, deuterium, and helium-3 gases from reservoir recycle gas and facility effluent cleanup systems. Gas mixtures are enriched to support the LLCE mission. SRS maintains H1616, SR-101, and UC-609 shipping containers and Hydride Transport Vessels (HTVs), and provides operational, regulatory, and technical support of H1616s, SR-101s, UC-609s, HTVs, and Pressure Vessels (PVs).

The Capability for Advanced Loading Missions (CALM) project will modify existing SRS facilities to provide a process that will support the Acorn reservoir LEP. The project will provide added reservoir cleaning and loading capabilities and increased capacity to satisfy anticipated production requirements. It will modify an existing reservoir loading line to enable both cleaning and filling of Acorn reservoirs and provide additional unloading capabilities for Acorn reservoirs. The CALM design effort will start in FY 2005 with final design completing in FY 2006. Procurement, Construction, Start-up, and Qualification phases are forecast to be completed during FY 2005 through FY 2009.

Facilities and Infrastructure Recapitalization Program (FIRP)

For the Tritium Facility, the FIRP activity is supporting replacement of obsolete infrastructure, improving mission readiness, and the demolition and removal of excess facilities. Priority deferred maintenance projects are undertaken to reduce the backlog. The projects include elimination of a fire protection issue identified by the Defense Nuclear Facilities Safety Board, electrical projects that permit the supply of reliable power to two mission essential production buildings, and roofing upgrades to three mission essential buildings, and the replacement of the air-handling unit supporting the inert reservoir-loading facility.

DEFENSE NUCLEAR NONPROLIFERATION

Fissile Materials Disposition

Savannah River Site is selected for disposition of U.S. plutonium and, as such, provides design authority for PDCF and site coordination services for Mixed-Oxide Fuels (MOX) Fuel Fabrication Facility (FFF) and Pit Disassembly and Conversion Facility (PDCF). SRS also supports design review of MOX FFF and integration of the two plutonium disposition facilities with other site support services (actual design of facilities is contracted to private sector firms). In addition, SRS provides down-blending services for off-specification highly enriched uranium (HEU). During the construction phases of MOX FFF and PDCF, SRS will be responsible for site integration and construction of site infrastructure including electric power, water & sewer, roads, communications, waste management, fire protection, security and related services.

The H Canyon is being used to down blend HEU fuel assemblies to Low Enriched Uranium for transfer to the Tennessee Valley Authority (TVA) for use in nuclear power plants. In addition, other forms of HEU are being transferred directly to TVA for conversion to reactor fuel. This is reducing the HEU inventory and the threat of HEU being used for weapons and reduces the long-term storage cost of HEU.

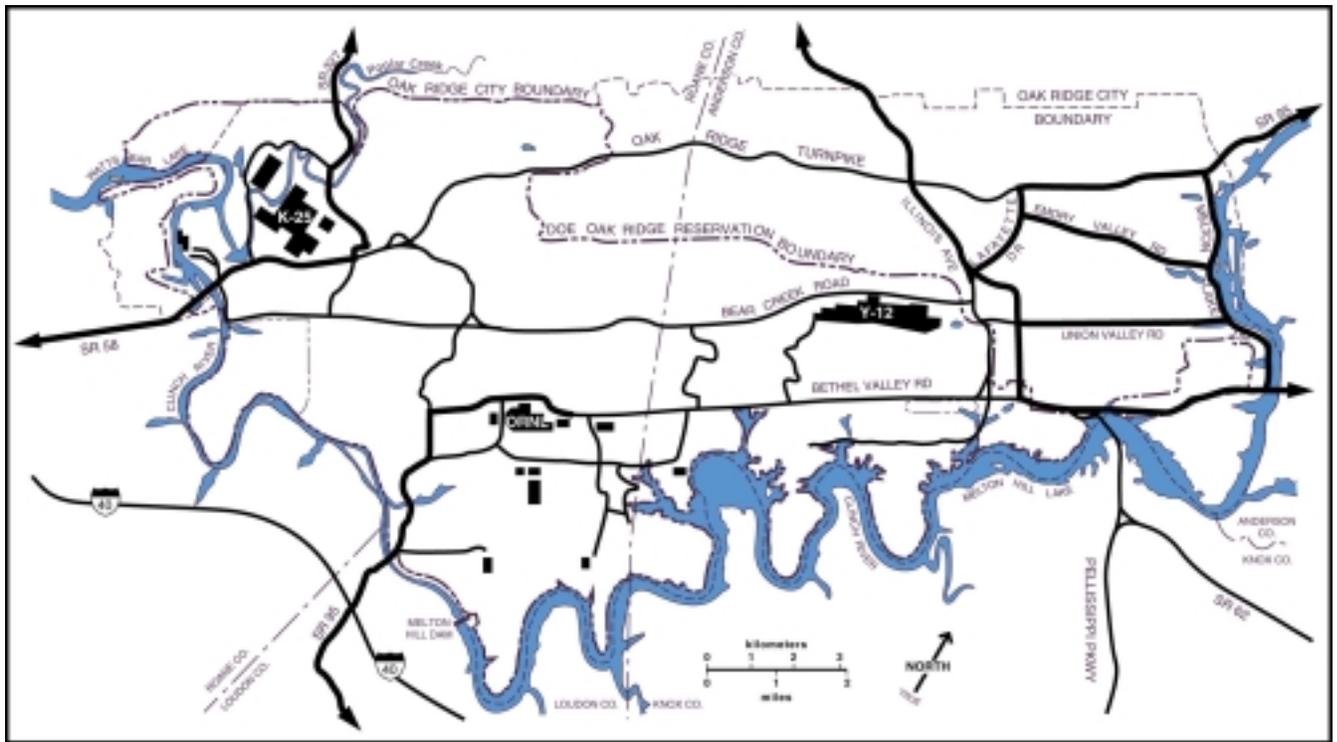
Y-12 NATIONAL SECURITY COMPLEX

INTRODUCTION:

The Y-12 National Security Complex (Y-12) is located on approximately 800 acres of the almost 35,000-acre Oak Ridge Reservation, about 20 miles west of Knoxville, Tennessee. The Y-12 Site Office provides federal oversight and manages the National Nuclear Security Administration (NNSA) Management and Operating (M&O) contract for Y-12. The facilities were originally constructed in 1943, as part of the Manhattan Project, for the production of enriched uranium.

HISTORY:

The Y-12 current and future missions are consistent with the Records of Decision for the Disposition of Surplus Highly Enriched Uranium Environmental Impact Statement (EIS) of July 29, 1996, the Stockpile Stewardship and Management Programmatic Environmental Impact Statement (PEIS) of December 19, 1996, and the Storage and Disposition of Surplus, Weapons Usable Fissile Materials PEIS of January 14, 1997.



MANAGEMENT:

National Nuclear Security Administration Management:

Y-12 Site Office

Management and Operating Contractor:

BWXT Y-12, L.L.C. was awarded the contract for management and operation of the site November 1, 2000.

TABLES

FUNDING AND EMPLOYMENT:

(dollars in millions)

| FUNDING | FY 2003 | FY 2004 | FY 2005 |
|---|----------------|----------------|----------------|
| NNSA | | | |
| Directed Stockpile Work | 195.7 | 219.0 | 237.8 |
| Science Campaign | 3.6 | 3.1 | 3.4 |
| Engineering Campaign | 3.5 | 7.7 | 6.1 |
| Advanced Simulation and Computing Campaign . | .5 | 0 | 0 |
| Pit Manufacturing and Certification Campaign | 0 | .1 | 0 |
| Readiness Campaign | 47.9 | 71.3 | 55.6 |
| Readiness in Technical Base and Facilities..... | 278.1 | 230.3 | 247.9 |
| Safeguards and Security..... | 77.8 | 82.0 | 99.5 |
| Facilities and Infrastructure Recapitalization Program | 61.4 | 63.4 | 75.3 |
| Nuclear Weapons Incident Response | .8 | .8 | 1.5 |
| Fissile Materials Disposition | 48.0 | 44.5 | 54.6 |
| Nonproliferation and International Security..... | 11.1 | .5 | .5 |
| HEU Transparency Implementation | 4.4 | 4.0 | 4.3 |
| Other NNSA | 1.5 | 1.4 | 1.4 |
| Total, NNSA | 734.3 | 728.1 | 787.9 |

| CONTRACTOR EMPLOYMENT (End of Year) | FY 2003 | FY 2004 | FY 2005 |
|--|----------------|----------------|----------------|
| NNSA..... | 3,986 | 3,934 | 3,918 |
| Other | 540 | 566 | 582 |
| Total Facility | 4,526 | 4,500 | 4,500 |

Congressional Items of Interest

- \$10M within DSW to complete W87 LEP closeout activities in FY 2004.
- \$5M for RTBF Operations of Facilities which will support the preventative maintenance program for the 12 major production buildings, address the deferred maintenance backlog, support deactivation

and clean-up costs for buildings such as 9201-5 to accelerate footprint reduction.

ACTIVITIES:

WEAPONS ACTIVITIES

Directed Stockpile Work (DSW)

The Y-12 Complex maintains the only capability in the U.S. to fabricate precision parts and components (from certain materials) for nuclear weapons. Every nuclear weapon produced in the U.S. has components that were fabricated at Y-12. Y-12 is also involved in the evaluation of components and subsystems returned from the stockpile, the dismantlement of secondaries, and the processing of recovered special nuclear materials. The Complex is currently in the fourth year of a 4½-year effort, supporting the refurbishment of the W87 Life Extension Program (LEP). Planning is also underway to support future LEPs, such as the B61 First Production Unit (FPU) currently scheduled for February 2006 (Y-12)/June 2006 (Complex) and the W76 currently scheduled for March 2007 (Y-12)/September 2007 (Complex).

Significant FY 2005 activities include: process prove-in for the B61, preparation for the W76 FPU, and continuation of evaluation and dismantlement activities.

Science Campaign

Planned FY 2005 projects include: evaluate material properties for ceramics, evaluate historical information on U-6Nb and Enriched Uranium (EU) properties and determine material properties, and evaluate effect of proposed process changes on Fogbank material properties.

Engineering Campaign

Planned FY 2005 projects include: developing weapon specific aging models, evaluation and process development for non-destructive laser gas sampling system and enhanced low-temperature thermal decomposition system, evaluate corrosion mechanisms for metals of interest, and continue special material characterization.

Advanced Simulation and Computing (ASCI) Campaign

Planned FY 2005 projects include: integrated monitoring of Y-12 application availability and network performance, and inter-network infrastructure to support data accessibility.

Readiness Campaign

Planned FY 2005 projects include: Zone Refining, Enclosed Hazardous Material Processing, Chip and Coolant, Alternate Feed Study, Sensors for Holdup, IR Heating of Uranium, Manufacturing Engineering Integrated Desktop, Agile Machine Tool, Materials Knowledge Repository, Casting Process Science Basis, and Advanced Metrology Platform.

Readiness in Technical Base and Facilities (RTBF)

Key activities in FY 2005 include the continued safe operation of the major Y-12 production facilities and preparation for material transfer to the Highly Enriched Uranium Materials Facility (HEUMF) when completed. In addition, the Purification Facility Construction project is currently underway at Y-12 and the Beryllium Capability project begins design in FY 2004 and construction in FY 2006.

Facilities and Infrastructure Recapitalization Program (FIRP)

Through the FIRP activities, Y-12 has been able to establish a strong deferred maintenance reduction program that is focused on supporting DSW and three major campaign activities: Enhanced Surveillance, Stockpile Readiness, and Advanced Design and Production Technologies (ADAPT). FIRP projects include the purchase and installation of new building dehumidification units that, in turn, support the disassembly and study of weapon components (stockpile evaluation). In addition, FIRP is replacing deteriorated natural gas lines supplying stockpile maintenance activities. Significant investments have also been made in roof repairs that are tied to ongoing production activities (joint test assemblies, component dismantling activities, and refurbishments of nuclear weapon systems) and in replacing two 1940-vintage transformers that were a weak link in the electrical distribution system supporting these mission activities. The key for each of these projects is their direct link to the NNSA Stockpile Stewardship Program. Y-12 has made significant and impressive progress in the demolition of excess facilities and has demolished over 400,000 gross square feet of facilities no longer needed.

Y-12 is also starting the planning and execution of five Line Item projects that address the most demanding utility issues at Y-12 [Compressed Air Upgrade (design start in FY 2004; construction in FY 2005), Steam Plant Life Extension (design start in FY 2005), potable water, electrical distribution, and utility distribution systems) and represent an investment of about \$150 m over the next 7 years. FIRP also has initiated the complex-wide Roof Asset Management Program (RAMP) to establish and implement a corporate approach for the management of NNSA's roofing assets, which is expected to result in improved cost efficiencies, improved quality of life extension of NNSA's roofing assets, consistent approach and common standards for optimal roofing repairs and replacement, and additional deferred maintenance reduction.

Safeguards and Security

The plant has developed a Design Basis Threat (DBT) Implementation Plan to address new DBT protection requirements. In FY 2005-2009, Y-12 Plant will hire additional Security Police Officers. In FY 2005, the plant will begin a two-year effort that provides centralized computer management to control the use and application of personnel computers through a master network.

As part of the National Threat Level Alert System, the plant may occasionally have to implement additional compensatory security measures. These periods of heightened security require an increased expenditure of funds and use of resources.

DEFENSE NUCLEAR NONPROLIFERATION

Fissile Materials Disposition

Y-12 serves as the lead for all surplus highly enriched uranium (HEU) disposition activities through the HEU Disposition Program Office. Y-12 is also providing storage for surplus HEU pending disposition via shipment to the U.S. Enrichment Corporation/ Tennessee Valley Authority (USEC/TVA).

General Provisions

Proposed Appropriation Language

SEC. 301. (a) None of the funds appropriated by this Act may be used to award a management and operating contract, or award a significant extension or expansion to an existing management and operating contract, unless such contract is awarded using competitive procedures or the Secretary of Energy grants, on a case-by-case basis, a waiver to allow for such a deviation. The Secretary may not delegate the authority to grant such a waiver.

(b) At least 60 days before a contract award for which the Secretary intends to grant such a waiver, the Secretary shall submit to the Subcommittees on Energy and Water Development of the Committees on Appropriations of the House of Representatives and the Senate a report notifying the Subcommittees of the waiver and setting forth, in specificity, the substantive reasons why the Secretary believes the requirement for competition should be waived for this particular award.

SEC. 302. None of the funds appropriated by this Act may be used to—

(1) develop or implement a workforce restructuring plan that covers employees of the Department of Energy; or

(2) provide enhanced severance payments or other benefits for employees of the Department of Energy, under section 3161 of the National Defense Authorization Act for Fiscal Year 1993 (Public Law 102–484; 42 U.S.C. 7274h).

SEC. 303. None of the funds appropriated by this Act may be used to prepare or initiate Requests For Proposals (RFPs) for a program if the program has not been funded by Congress.

(Transfers of Unexpended Balances)

SEC. 304. The unexpended balances of prior appropriations provided for activities in this Act may be transferred to appropriation accounts for such activities established pursuant to this title. Balances so transferred may be merged with funds in the applicable established accounts and thereafter may be accounted for as one fund for the same time period as originally enacted.

SEC. 305. None of the funds in this or any other Act for the Administrator of the Bonneville Power Administration may be used to enter into any agreement to perform energy efficiency services outside the legally defined Bonneville service territory, with the exception of services provided internationally, including services provided on a reimbursable basis, unless the Administrator certifies in advance that such services are not available from private sector businesses.

SEC. 306. When the Department of Energy makes a user facility available to universities and other potential users, or seeks input from universities and other potential users regarding significant

characteristics or equipment in a user facility or a proposed user facility, the Department shall ensure broad public notice of such availability or such need for input to universities and other potential users.

For purposes of this section, the term “user facility” includes, but is not limited to:

(1) a user facility as described in section 2203(a)(2) of the Energy Policy Act of 1992 (42 U.S.C. 13503(a)(2));

(2) a National Nuclear Security Administration Defense Programs Technology Deployment Center/User Facility; and

(3) any other Departmental facility designated by the Department as a user facility.

SEC. 307. The Administrator of the National Nuclear Security Administration may authorize the plant manager of a covered nuclear weapons production plant to engage in research, development, and demonstration activities with respect to the engineering and manufacturing capabilities at such plant in order to maintain and enhance such capabilities at such plant: Provided, That of the amount allocated to a covered nuclear weapons production plant each fiscal year from amounts available to the Department of Energy for such fiscal year for national security programs, not more than an amount equal to 2 percent of such amount may be used for these activities: Provided further, That for purposes of this section, the term “covered nuclear weapons production plant” means the following:

(1) the Kansas City Plant, Kansas City, Missouri;

(2) the Y-12 Plant, Oak Ridge, Tennessee;

(3) the Pantex Plant, Amarillo, Texas;

(4) the Savannah River Plant, South Carolina; and

(5) the Nevada Test Site.

SEC. 308. Section 310 of the Energy and Water Development Appropriations Act, 2000 (Public Law 106-60), is hereby repealed.

SEC. 309. Funds appropriated by this or any other Act, or made available by the transfer of funds in this Act, for intelligence activities are deemed to be specifically authorized by the Congress for purposes of section 504 of the National Security Act of 1947 (50 U.S.C. 414) during fiscal year 2004 until the enactment of the Intelligence Authorization Act for fiscal year 2004.

Explanation of Change

Same language as in the FY 2004 Congressional Budget.

