

# **Defense Nuclear Waste Disposal**

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## **Proposed Appropriation Language**

For nuclear waste disposal activities to carry out the purposes of Public Law 97-425, as amended, including the acquisition of real property or facility construction or expansion, [\$387,699,000] \$131,000,000 to remain available until expended. (Energy and Water Development Appropriations Act, 2004.)

### **Explanation of Change**

The only change from the language in FY 2004 is the proposed funding amount.



# Defense Nuclear Waste Disposal

## Office of Civilian Radioactive Waste Management (OCRWM)

### Overview

#### Appropriation Summary by Program

(dollars in thousands)

	FY 2003 Comparable Appropriation	FY 2004 Original Appropriation	FY 2004 Adjustments	FY 2004 Comparable Appropriation	FY 2005 Request
Defense Nuclear Waste Disposal					
Yucca Mountain Project . . . . .	312,952	390,000	-2,301	387,699	131,000
Subtotal, Defense Nuclear Waste Disposal . . . . .	312,952	390,000	-2,301	387,699	131,000
Nuclear Waste Disposal					
Yucca Mountain Project . . . . .	55,309	15,997	-71	15,926	427,943
Transportation <sup>a</sup> . . . . .	7,948	63,800	-242	63,558	186,000
Program Management & Integration . . . . .	20,741	30,003	-604	29,399	47,300
Program Direction . . . . .	60,060	80,200	-204	79,996	87,757
Subtotal, Nuclear Waste Disposal . . . . .	144,058	190,000	-1,121	188,879	749,000
Subtotal, Yucca Mountain Legislative Proposal – Mandatory Collection to Offset Discretionary Funding . . . . .					-749,000
Subtotal, Nuclear Waste Disposal . . . . .					0
Total, Civilian Radioactive Waste Management . . . . .	457,010	580,000	-3,422	576,578	131,000

<sup>a</sup> FY 2003-2004: The “Waste Acceptance, Storage and Transportation” program element changed to “Transportation” in FY 2005. The “Waste Acceptance” sub-element in FY 2005 has been incorporated into the “Program Management & Integration” program element. The “Project Management” activity for FY 2003-2004 was incorporated into the “National Transportation” and “Nevada Transportation” elements in FY 2005.

## **Preface**

The mission of the Office of Civilian Radioactive Waste Management (OCRWM) is critical to national and homeland security, nuclear non-proliferation and protecting our environment. The Federal responsibility for development of a geologic repository for the disposition of high-level radioactive waste materials is also necessary for the future of the Nation's energy supply. This budget for the Office of Civilian Radioactive Waste Management outlines the FY 2005 activities and funding required to implement the Federal policy for permanent geologic disposal of commercial spent nuclear fuel and high-level radioactive waste resulting from the Nation's commercial reactors and atomic energy defense activities. This budget identifies the work needed in FY 2005, the short- and long-range program goals, benefits, and performance measurements to implement the Program mission.

## **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 appropriation has developed quantifiable goals to support the general goals. Thus, the "goal cascade" is the following:

Department Mission — Strategic Goal (25 yrs) — General Goal (10-15 yrs) — Program Goal (GPRA Unit) (10-15 yrs)

To provide a concrete link between budget, performance, and reporting, the Department developed a "GPRA unit" concept. Within DOE, a GPRA Unit defines a major activity or group of activities that support the core mission and aligns resources with specific goals. Each GPRA Unit has completed or will complete a Program Assessment Rating Tool (PART). A unique program goal was developed for each GPRA unit. A numbering scheme has been established for tracking performance and reporting.

The goal cascade accomplishes two things: First, it ties major activities for each program to successive goals and, ultimately, to DOE's mission. This helps ensure the Department focuses its resources on fulfilling its mission. Second, the cascade allows DOE to track progress against quantifiable goals and to tie resources to each goal at any level in the cascade. Thus, the cascade facilitates the integration of budget and performance information in support of the GPRA and the President's Management Agenda (PMA).

## **Mission**

The mission of the Defense Nuclear Waste Disposal Program is to dispose of high-level waste generated from atomic energy defense activities. The primary focus of this Program is to develop a long-term geological repository for Defense Nuclear Waste. This effort supports the Office of Repository Development, which is described in the Nuclear Waste fund Budget request.

## **Benefits**

The Nation's commercial and defense high-level radioactive waste must be safely isolated to minimize the risk to human health and the environment. Disposition of these materials in a geologic repository is

necessary to maintain our energy options, national security, to support a cleanup of our weapons sites, to continue operation of our nuclear-powered vessels, and the advance our international non-proliferation goals.

A permanent disposition of these materials also promotes non-proliferation objectives to dispose of the growing inventory of surplus weapons grade plutonium. The disposition of the waste generated by the Navy's principle combat vessels supports our Nation's security by permitting the continued operations of the Navy's fleet. Ultimately, the success of the project ensures the consolidation of nuclear materials currently located at 129 temporary storage sites in 39 states affecting nearly 162 million Americans and nearly every major waterway.

## **Strategic Goals**

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 tie to the strategic goals. The five Environmental Management appropriations (Defense Site Acceleration Completion, Non-Defense Environmental Services, Uranium Enrichment Decontamination & Decommissioning Fund, Nuclear Waste Disposal, and Defense Nuclear Waste Disposal appropriations support the following goals:

Environment Strategic Goal: To protect the environment by providing a responsible resolution to the environmental legacy of the Cold War and by providing for the permanent disposal of the Nation's high-level radioactive waste.

General Goal 7, Nuclear Waste: License and construct a permanent repository for nuclear waste at Yucca Mountain and begin acceptance of waste by 2010.

The program funded within the Defense Nuclear Waste Fund appropriation has one Program Goal that contributes to the General Goal in the "goal cascade". This goal is General Goal 7, Nuclear Waste.

Program Goal 7.25.00.0, Planned Annual Operational Rate: The Yucca Mountain repository is licensed, constructed, and operating; the national and Nevada waste transportation systems are in place; activities required to support receipt and emplacement of spent nuclear fuel (SNF) and high-level radioactive waste (HLW) at the repository are proceeding on schedule.

## **Contribution to General Goal**

Within the Civilian Radioactive Waste Management Program, the Yucca Mountain Sub-Program contributes to General Goal 7 by preparing and submitting the license application to NRC by 2004 for a repository construction authorization by 2008 and subsequently constructing and operating the repository by 2010. The Transportation Sub-Program contributes to General Goal 7 by developing the transportation network, equipment, and facilities that are required for shipment of waste to the repository by 2010.

## Funding by General Goal

(dollars in thousands)

	FY 2003	FY 2004	FY 2005	\$ Change	% Change
General Goal 7, Defense Nuclear Waste					
Program Goal 7.25.00.0, Planned Annual Operational Rate . . . . .	312,952	387,699	131,000	-256,699	-66.2%
Subtotal, General Goal 4 . . . . .	312,952	387,699	131,000	-256,699	-66.2%
<hr/>					
Total, General Goal 7 (Defense Nuclear Waste Fund) . . . . .	312,952	387,699	131,000	-256,699	-66.2%

### Means and Strategies

The Program will implement the following means: project management skills will be upgraded, a comprehensive workforce plan will be implemented to ensure human resources align with the evolving program, and information technology will be utilized to manage and optimize documentation and interactions during licensing. Strategies will include the following: the Administration is pursuing an alternative funding proposal that would help ensure adequate funding through licensing and construction, and a rigorous process for answering Nuclear Regulatory Commission’s requests for additional information to meet a challenging license application process.

### Validation and Verification

The validation and verification of the Program’s activities are subject to continuing review by the Congress, the General Accounting Office, the Department’s Inspector General, the Nuclear Regulatory Commission, the Environmental Protection Agency, the Nuclear Waste Technical Review Board, and the Department’s Office of Engineering and Construction Management (OECM). OECM will perform the external independent reviews and independent cost estimates prior to critical decisions. The Program Director will review the progress, schedule, and cost performance of the Yucca Mountain and Transportation Sub-Programs and report the results on a quarterly basis. The Yucca Mountain Sub-Program Manager conducts similar reviews monthly. The quality of the Program’s work is subject to a Nuclear Regulatory Commission-approved quality assurance program. The Program’s financial statements are audited annually by an independent public accounting firm. The Program has received an unqualified (“clean”) auditors’ opinion every year since inception. Finally, the Program conducts an annual internal controls review under the Federal Managers’ Financial Integrity Act. The Program’s performance measures and associated quarterly milestones are reviewed and approved by the OCRWM Director and then entered into and tracked in the Department’s performance measurement database. Final performance results are audited and reported both in OCRWM’s Annual Report to the Congress and the Department’s Performance and Accountability Report.

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

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

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

The first PART review of OCRWM's Yucca Mountain Project resulted in the assignment of an "adequate" rating by OMB based on an overall score of 50. In many instances, the Yucca Mountain Project isn't at a stage where it can be effectively evaluated as a mature project. After last year's site designation, the project is transitioning from a site recommendation to a design, licensing, and construction project. A score of 100 was awarded in the "Project Purpose and Design" section. "Strategic Planning" and "Program Management" were scored 67 and 75, respectively. The score of 16 in the "Project Results" section reflects OMB's position that the Project lacks an adequate performance baseline, that its "Earned Value Management System" (EVMS) has not been certified, and that its "Capital Asset Management Plan," incorporating an acquisition strategy had not been finalized. The performance baseline and certification of EVMS is required by DOE Order 413.3 at the time of Critical Decision 2 scheduled for September 2005. There had been consideration for an earlier start, but it was determined there would be a detrimental impact to the confidence in achieving the completion of the License Application submission. The project has a performance measurement baseline in place and performance data is being collected and reported using an earned value management system, which has been in place since 1991. Development of the Capital Asset Management Plan was in process at the time the PART was completed; and an update of a final draft was completed in November 2003.

## **Significant Program Shifts**

With the U.S. Congress approval of the Yucca Mountain site in July 2002, the Program is focusing its efforts on licensing, building, and operating the repository facilities and transportation system needed to accept, ship, and dispose of waste. The Program is shifting its near-term approach by focusing resources to meet the Nuclear Regulatory Commission's (NRC) licensing criteria specified within 10 CFR Part 63.

## Annual Performance Results and Targets

FY 2000 Results	FY 2001 Results	FY 2002 Results	FY 2003 Results	FY 2004 Targets	FY 2005 Targets
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### Yucca Mountain/Repository Design & Licensing (Phase 2A)

Complete public hearings on the Draft Environmental Impact Statement, which was published in August 1999. (MET TARGET)	Complete the scientific and technical documents that will provide the technical basis for a possible site recommendation. (MET TARGET)	Submit a Site Recommendation Report to the President. (MET TARGET)	Complete additional testing and analyses required to support license application design. (PARTIALLY MET TARGET)	Complete Draft License Application.	Complete and submit a license application for repository construction authorization to the NRC.
Select the reference design for site recommendation and license application. (MET TARGET)	Conduct statutory hearings in the vicinity of Yucca Mountain to inform the residents that the site is under consideration, and to receive comments regarding a possible site recommendation. (MET TARGET)	Submit a Final Environmental Impact Statement to the President as required by the Nuclear Waste Policy Act. (MET TARGET)	Complete development of repository conceptual design and request Acquisition Executive approval to start preliminary design, which will be used in the license application. (MET TARGET)		Complete repository preliminary design.
Select the reference natural systems models for site recommendation and license application.	Update all process models and conduct a total system performance assessment of use in the site recommendation. (MET TARGET)  Complete and issue Total System Life Cycle Cost and Fee Adequacy reports. (MET TARGET)	Begin development of updated Total System Life Cycle Cost and Fee Adequacy reports. (MET TARGET)	Complete and issued updated Total System Life Cycle Cost and Fee Adequacy reports in preparation for license application. (MET TARGET)		Complete detailed work plan, cost estimate and schedule, and establish a performance measurement baseline for repository final design and construction.  Project management costs for the OCRWM management and operating contractor will be reduced one percent annually from an FY 2003 level of 17 percent to a level of 15 percent in FY 2005 and not to exceed 14 percent of its total costs by FY 2006.

## Annual Performance Results and Targets

FY 2000 Results	FY 2001 Results	FY 2002 Results	FY 2003 Results	FY 2004 Targets	FY 2005 Targets
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### Transportation / National and Nevada

No related target.

No related target.

Issue draft Request for Proposals for waste acceptance and transportation services. (MET TARGET)

Issue Nuclear Waste Policy Act Section 180(c) Notice of Revised Proposed Policy and Procedures for public comment. (NOT MET)

Develop and issue the OCRWM Transportation Strategic Plan. (MET TARGET)

Approve the Transportation Project Plan for internal use by the Director of the National Transportation Program.

Issue Request for Proposals for transportation cask fleet system needed to support initial waste acceptance in 2010.

Issue Nevada Transportation draft Environmental Impact Statement (DEIS) and complete public hearings.



# Defense Nuclear Waste Disposal

## Funding Profile by Program

( dollars in thousands )

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Total, Defense Nuclear Waste Disposal . . . . .	312,952	390,000	-2,301	387,699	131,000

**Public Law Authorizations:**

P.L. 97-425, "Nuclear Waste Policy Act" (1982)  
P.L. 100-203, "Nuclear Waste Policy Amendments Act" (1987)

**Mission**

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**Benefits**

The Nation’s commercial and defense high-level radioactive waste must be safely isolated to minimize the risk to human health and the environment. Disposition of these materials in a geologic repository is necessary to maintain our energy options, national security, to support a cleanup of our weapons sites, to continue operation of our nuclear-powered vessels, and the advance our international non-proliferation goals.

A permanent disposition of these materials also promotes non-proliferation objectives to dispose of the growing inventory of surplus weapons grade plutonium. The disposition of the waste generated by the Navy’s principle combat vessels supports our Nation’s security by permitting the continued operations of the Navy’s fleet. Ultimately, the success of the project ensures the consolidation of nuclear materials currently located at 129 temporary storage sites in 39 states affecting nearly 162 million Americans and nearly every major waterway.



**Defense Nuclear Waste Disposal**  
**Office of Civilian Radioactive Waste Management (OCRWM)**

**Funding by Site by Program**

(dollars in thousands)

	FY 2003	FY 2004	FY 2005	\$ Change	% Change
<b>Chicago Operations Office</b>					
Argonne National Laboratory					
Preclosure and Postclosure Safety Analysis	2,571	2,415	1,867	-548	-22.7%
Licensing Support Network	7	5	0	-5	-100.0%
Total, Argonne National Laboratory	2,578	2,420	1,867	-553	-22.9%
Total, Chicago Operations Office	2,578	2,420	1,867	-553	-22.9%
<b>Idaho Operations Office</b>					
Idaho National Engineering & Environmental Laboratory					
Demonstration Facilities	0	0	0	+0	+0.0%
Total, Idaho National Engineering & Environmental Laboratory	0	0	0	+0	+0.0%
Total, Idaho Operations Office	0	0	0	+0	+0.0%
<b>NNSA Service Center</b>					
NNSA Service Center	0	0	0	+0	+0.0%
Program Direction	0	0	0	+0	+0.0%
<b>Lawrence Berkeley Site Office</b>					
Lawrence Berkeley National Laboratory					
Preclosure and Postclosure Safety Analysis	12,766	6,785	8,239	+1,454	+21.4%
Project Support	0	40	0	-40	-100.0%
License Application	0	300	0	-300	-100.0%
Licensing Support Network	51	215	0	-215	-100.0%
Total, Lawrence Berkeley National Laboratory	12,817	7,340	8,239	+899	+12.2%
Total, Lawrence Berkeley Site Office	12,817	7,340	8,239	+899	+12.2%
<b>Livermore Site Office</b>					
Lawrence Livermore National Laboratory					
Preclosure and Postclosure Safety Analysis	17,890	19,015	19,373	+358	+1.9%
Project Support	0	47	0	-47	-100.0%
License Application	0	412	0	-412	-100.0%
Licensing Support Network	124	151	0	-151	-100.0%
Repository Facilities Design	15	0	0	+0	+0.0%
Total, Lawrence Livermore National Laboratory	18,029	19,625	19,373	-252	-1.3%
Total, Livermore Site Office	18,029	19,625	19,373	-252	-1.3%
<b>Los Alamos Site Office</b>					
Los Alamos National Laboratory					
Preclosure and Postclosure Safety Analysis	12,635	10,314	16,670	+6,356	+61.6%
Project Support	0	434	120	-314	-72.4%
License Application	0	254	0	-254	-100.0%
Licensing Support Network	150	64	0	-64	-100.0%
Total, Los Alamos National Laboratory	12,785	11,066	16,790	+5,724	+51.7%
Total, Los Alamos Site Office	12,785	11,066	16,790	+5,724	+51.7%
<b>Nevada Site Office</b>					
Nevada Test Site					
Site Operations	5,999	6,502	3,726	-2,776	-42.7%
Preclosure and Postclosure Safety Analysis	1,150	1,338	2,061	+723	+54.0%
Environmental, Safety & Health Support	429	48	54	+6	+12.5%
Total, Nevada Test Site	7,578	7,888	5,841	-2,047	-26.0%
Total, Nevada Site Office	7,578	7,888	5,841	-2,047	-26.0%

Office of Repository Development					
Yucca Mountain Project Office					
Repository Facilities Design	56,042	96,120	25,168	-70,952	-73.8%
Site Operations	25,694	11,802	0	-11,802	-100.0%
Project Support	54,818	50,260	10,000	-40,260	-80.1%
Preclosure and Postclosure Safety Analysis	52,526	73,913	10,000	-63,913	-86.5%
License Application	42,474	47,260	10,000	-37,260	-78.8%
Technical Alternatives	0	0	10,000	+10,000	+100.0%
External Oversight and PETT	11,341	11,341	0	-11,341	-100.0%
Program Direction	0	0	0	+0	+0.0%
Total, Yucca Mountain Project Office	242,895	290,696	65,168	-225,528	-77.6%
Sandia Site Office					
Sandia National Laboratory					
Preclosure and Postclosure Safety Analysis	14,097	11,784	12,930	+1,146	+9.7%
Repository Facilities Design	149	0	0	+0	+0.0%
Project Support	0	4,685	0	-4,685	-100.0%
License Application	0	898	0	-898	-100.0%
Licensing Support Network	136	72	0	-72	-100.0%
Total, Sandia National Laboratory	14,382	17,439	12,930	-4,509	-25.9%
Total, Sandia Site Office	14,382	17,439	12,930	-4,509	-25.9%
Total, NNSA Service Center	308,486	354,054	128,341	-225,713	-63.8%
Oak Ridge Operations Office					
Oak Ridge National Laboratory					
Preclosure and Postclosure Safety Analysis	536	555	0	-555	-100.0%
Licensing Support Network	1	1	0	-1	-100.0%
Total, Oak Ridge National Laboratory	537	556	0	-556	-100.0%
Oak Ridge Institute for Science & Education					
Support Educational Initiatives	0	0	0	+0	+0.0%
Total, Oak Ridge Institute for Science & Education	0	0	0	+0	+0.0%
Total, Oak Ridge National Office	537	556	0	-556	-100.0%
Richland Operations Office					
Pacific Northwest Laboratory					
Preclosure and Postclosure Safety Analysis	1,345	1,627	792	-835	-51.3%
Licensing Support Network	6	5	0	-5	-100.0%
Total, Pacific Northwest Laboratory	1,351	1,632	792	-840	-51.5%
Total, Richland Operations Office	1,351	1,632	792	-840	-51.5%
Washington Headquarters					
Transportation System	0	29,037	0	-29,037	-100.0%
Program Management & Integration	0	0	0	+0	+0.0%
Program Direction	0	0	0	+0	+0.0%
Total, Washington Headquarters	0	29,037	0	-29,037	-100.0%
Total, Defense Nuclear Waste Disposal	312,952	387,699	131,000	-256,699	-66.2%

# Site Description

## Argonne National Laboratory

Argonne National Laboratory-East (ANL-E) is a research laboratory occupying a 700-acre tract of land located approximately 22 miles southwest of downtown Chicago in DuPage County, Illinois. It is a multi-disciplinary research and development laboratory that conducts basic and applied research to support the development of energy-related technologies.

### Pre-closure and Post-closure Safety Analysis

ANL conducts waste form testing. This testing will help to improve models of waste form degradation and radionuclide mobilization processes.

## Lawrence Berkeley National Laboratory

The Lawrence Berkeley National Laboratory is a multi-disciplinary research and development laboratory focused on national defense. The 200-acre Lawrence Berkeley National Laboratory site is located adjacent to the University of California in Berkeley, California.

### Pre-closure and Post-closure Safety Analysis

LBNL conducts unsaturated zone flow and transport modeling, thermal hydrologic modeling activities, geophysics testing, and supports drift-scale testing. LBNL also performs the seepage tests in the exploratory studies facility alcoves and niches. LBNL supports the abstraction activities needed to conduct the Total System Performance Assessment in support of the license application. These testing activities support performance confirmation and license application update activities. Appropriate personnel will be available to support the licensing proceedings.

## Lawrence Livermore National Laboratory

The Lawrence Livermore National Laboratory is a multi-disciplinary research and development laboratory focused on national defense, which has two geographic locations in northern California. The Livermore Site is approximately one square mile and is located 40 miles east of San Francisco, near the City of Livermore. Site 300 is comprised of about 11 square miles and is located 15 miles southeast of the Livermore Site.

### Pre-closure and Post-closure Safety Analysis

LLNL conducts experiments and modeling activities needed for the repository design and to predict responses of the engineered and natural barrier systems to the heat generated by radioactive waste. The experiments include the drift-scale tests in the exploratory studies facility (ESF) and the heater tests in the cross drift. It also supports the abstraction activities needed to conduct the Total System Performance Assessment in support of the license application. These testing activities support performance confirmation and license application update activities. Appropriate personnel will be available to support the licensing proceedings.

## **Sandia National Laboratory**

The Sandia National Laboratories-New Mexico (SNL) site located in Albuquerque, New Mexico, is a research and development facility with a primary mission of developing and testing non-nuclear components of nuclear weapons.

### **Pre-closure and Post-closure Safety Analysis**

SNL conducts in-situ monitoring in the exploratory studies facility (ESF) and in the cross drift, performance confirmation testing, and performance assessment modeling. The laboratory conducts geoengineering and rock mechanics studies, and backfill analyses. These testing activities support performance confirmation and license application update activities. Appropriate personnel will be available to support the licensing proceedings.

## **Los Alamos National Laboratory**

The Los Alamos National Laboratory (LANL) encompasses over 43 square miles in northern New Mexico and is divided into 47 technical areas that are used for scientific sites, experimental areas, waste disposal locations, roads and utilities, and safety and security buffers. Major programs include applied research in nuclear and conventional weapons development, nuclear fission and fusion, nuclear safeguards and security, and environmental and energy research.

### **Pre-closure and Post-closure Safety Analysis**

LANL conducts geochemistry, mineralogy, colloid transport studies, laboratory and field-scale transport tests, and develops radionuclide transport models for the unsaturated and saturated zone groundwaters at the site. It collaborates with the United States Geologic Survey on isotopic and groundwater chemistry investigations needed for transport models. It also supports the abstraction activities needed to conduct the Total System Performance Assessment in support of the license application. These testing activities support performance confirmation and license application update activities. Appropriate personnel will be available to support the licensing proceedings.

## **Nevada Test Site**

The Nevada Test Site is located 65 miles northwest of the city of Las Vegas and encompasses 1,573 square miles, an area roughly the size of Rhode Island. The activities are wide-spread, geographically diverse, and are the result of 928 historical above-ground and below ground nuclear tests conducted at the Nevada Test Site.

The Nevada Test Site supports the Yucca Mountain Project through the following activities.

### **Site Operations**

NTS includes NTS common site support such as: logistics, fire protection, security, emergency medical services, roads/grounds maintenance, environmental operations, vehicle/construction equipment maintenance, facility maintenance, bus transportation, janitorial and refuse services, and power usage.

### **Pre-closure and Post-closure Safety Analysis**

It includes providing Quality Affecting instrument calibration services and Material Test Lab services to support the Test Coordination Office/Natural System test activities.

### **Environmental, Safety and Health Support**

It includes providing occupational medical services and Emergency Response.

### **NNSA Service Center**

In support of the Yucca Mountain Project and the Office of Civilian Radioactive Waste Management (OCRWM) Program Direction budget element, the Nevada Operations Office administers disbursement of external oversight and payments-equal-to-taxes (PETT) funds to affected units of government, and also administers contracts/agreements with the OCRWM Management & Operating (M&O) contractor, support services contracts and all other financial/contract agreements associated directly with Yucca Mountain Project.

### **Program Direction**

This element includes matrix support provided by the Nevada Operations Office.

### **Yucca Mountain Project in Nevada**

The Yucca Mountain Project in Las Vegas, Nevada has the primary responsibility for preparing and submitting a license application to the Nuclear Regulatory Commission for construction of the repository. As the future owner and licensee of the repository, the Department of Energy develops and implements policies and strategies for the work to be completed and oversees the management and operating contractor and the United States Geological Survey in performing this work. The Yucca Mountain Project manages the contracts for the management and operating contractor and the support services contractors for work at Yucca Mountain.

### **License Application**

It includes managing the effort for the preparation of a License Application (LA) for Construction Authorization (CA), including the Licensing Support Network, the docketing and review of the application by NRC, preparation and support for the licensing hearings and approval for CA. It also includes LA Amendments after CA, and submission of the LA Update for License to Receive and Possess Waste, its review and processing and terminates with the approval by NRC to receive and possess waste. It includes regulatory issue resolution, interactions with the NRC and management of regulatory commitments and licensing action items by DOE to NRC.

### **Repository Facilities Design**

It comprises the management of all of the engineering, procurement and construction efforts to provide the Surface, Subsurface, Engineered Barriers and Offsite Utilities facilities that make up the Yucca Mountain Repository.

### **Pre-closure and Post-closure Safety Analysis**

It includes collection of data; conducting analyses; and developing the total system performance

assessment, pre-closure safety analyses, and performance confirmation documents. It also includes writing, updating and supporting the development of the safety analyses related portions of the License Application and Safety Analysis Report, and subsequent updates, as needed.

### **Site Operations**

It includes Site Management Integration, Site Engineering, Site Construction, Site Maintenance and Operations. Activities includes field procurement, project controls, procedure integration, engineering, construction, operations and maintenance for Area 25 facilities at North Portal/ESF Pad, South Portal, Busted Butte, Central Support Area, and outlying areas

### **Technical Alternatives**

As part of technical alternatives, it includes development of alternative approaches to the current baseline, which includes developing alternative approaches to improve the efficiency of repository operations, reduce the life-cycle costs, and enhance the schedule for waste emplacement.

### **Project Support**

It includes project management, project support and coordination activities. Project Management functions include Project Management and Integration for technical development and control of products, establishing and maintaining engineering and scientific processes and procedures. Project support functions including Project Controls, Systems Engineering, Safeguards and Security, Information Management, Procurement, Environmental, Safety and Health, and General Project Services (e.g., Administrative Services, Technical Support Services, Communications, Facility and Fleet Operational Services). It also includes compliance with NEPA requirements and other compliance management activities.

### **External Oversight, Cooperative Agreement, and PETT**

It includes financial assistance to the State of Nevada, Affected Units of Local Governments, and Payment Equal To Taxes.

### **Program Direction**

It includes salaries and benefits, travel, and other related expenses of the federal work force in support of the Yucca Mountain Project. It also includes Yucca Mountain Project support services.

## **Oak Ridge Institute for Science and Education**

ORISE administers undergraduate and graduate educational programs.

### **Oak Ridge Operations Office**

The Oak Ridge Reservation encompasses about 37,000 acres in east Tennessee and is comprised of three facilities: the East Tennessee Technology Park; the Oak Ridge National Laboratory; and the Y-12 Plant. In FY05, the Oak Ridge Institute for Science and Education supports OCRWM by administering undergraduate and graduate educational programs.

## **Oak Ridge National Laboratory**

The Oak Ridge National Laboratory (ORNL) encompasses about 3,300 acres and has historically supported both the defense production operations and civilian energy research effort. The Oak Ridge National Laboratory currently conducts applied and basic research in energy technologies and the physical and life sciences.

In FY 2005, ORNL will support two activities for the Yucca Mountain Project: 1) Pre-Closure and Post-Closure Safety Analyses, ORNL provides support in analyzing commercial reactor criticality data, radiochemical assays and uncanistered fuel design. The laboratory also provides technical support for the disposal criticality topical report, thermal/neutronics model and criticality analysis process report, and 2) the Licensing Support Network through potential processing of relevant documents.

## **Pacific Northwest National Laboratory**

The Pacific Northwest Laboratory is located on the Department's Hanford Site in Southeastern Washington State. The 1,465 square kilometer (560 square mile) site is bounded on the north by over 80 kilometers (50 miles) of the Columbia River, known as the Hanford Reach.

### **Pre-closure and Post-closure Safety Analysis**

The objective of this work is to develop, document, and summarize the technical basis for prediction of waste-form degradation and radionuclide mobilization within the waste package under expected Yucca Mountain environment. The technical objectives of this activity include analysis, modeling, and coordination with waste form and mobilization testing by the Waste Form Testing Department. Further technical objectives of this activity include providing support for integration and review of products from other aspects of the project, as well as supporting interactions with outside organizations such as the international peer review, the repository consulting board, U. S. Nuclear Regulatory Commission (NRC), and Nuclear Waste Technical Review Board (NWTRB) on waste-form issues.

