Defense Nuclear Waste Disposal

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, [$280,000,000] *$315,000,000* to remain available until expended. *(Energy and Water Development Appropriations Act, 2002.)*

Defense Nuclear Waste Disposal

Program Mission

The goal 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 find a long term geological repository for Defense Nuclear Waste. This effort supports the Yucca Mountain Site Characterization Project which is described in detail in the Nuclear Waste Fund Budget Request.

Since passage of the Nuclear Waste Policy Act of 1982, as amended, the Nuclear Waste Fund has incurred costs for activities related to the disposal of high-level waste generated from the atomic energy defense activities of the Department of Energy. At the end of fiscal year 2001, the balance owed by the Federal Government to the Nuclear Waste Fund was $ 1,350,039,000 (including principal and interest). The Defense Nuclear Waste Disposal appropriation was established to ensure payment of the Federal Government's contribution to the nuclear waste repository program. Through fiscal year 2002, a total of $ 1,693,129,000 has been appropriated to support nuclear waste repository activities attributable to atomic energy defense activities.

Funding Profile

(Dollars in Thousands)

	FY 2001 Comparable Appropriation	FY 2002 Original Appropriation	FY 2002 Adjustment	FY 2002 Comparable Appropriation	FY 2003 Budget Request
Defense Nuclear Waste Disposal					
Yucca Mountain Site Characterization	199,725	280,000	0	280,000	315,000

Funding by Site

(dollars in thousands)

	FY 2001	FY 2002	FY 2003	$ Change	% Change
Chicago Operations Office					
Argonne National Laboratory	1,959	2,752	3,599	847	30.8%
Oakland Operations Office					
Lawrence Berkeley Laboratory	9,800	12,118	12,817	699	5.8%
Lawrence Livermore National Laboratory	10,100	17,149	18,029	880	5.1%
Total, Oakland Operations Office	19,900	29,267	30,846	1,579	5.4%
Albuquerque Operations Office					
Sandia National Laboratory	9,850	14,319	14,382	63	0.4%
Los Alamos National Laboratory	11,571	12,591	12,785	194	1.5%
Total, Albuquerque Operations Office	21,421	26,910	27,167	257	1.0%
Nevada Operations Office [a]	149,706	212,398	243,922	31,524	14.8%
Nevada Test Site	5,771	7,550	7,578	28	0.4%
Nevada (Yucca Mountain Project Office)	0	0	0	0	0.0%
Total, Nevada Operations Office	155,477	219,948	251,500	31,552	14.3%
Oak Ridge Operations Office					
Oak Ridge National Laboratory	226	150	537	387	258.0%
Total, Oak Ridge Operations Office	226	150	537	387	258.0%
Richland Operations Office					
Pacific Northwest Laboratory	742	973	1,351	378	38.8%
Washington Headquarters	0	0	0	0	0.0%
Total, Program	199,725	280,000	315,000	35,000	12.5%
H.R. 4733: Restoration of Funds (Defense)	10,000 [b]				
Grand Total, Program	209,725	280,000	315,000	35,000	12.5%

[a] Includes Financial Assistance to the State of Nevada and Affected Units of Local Government and includes funding for contracts administered in Nevada (i.e., Management and Operating Contractor, USGS, National Academy of Sciences, universities, etc.).

[b] The FY 1996 Energy and Water Development Appropriation Act reserved $85 million in the Defense Waste Disposal Appropriation for interim waste storage activities. In FY 2001, H.R. 4733, House and Senate Committees on Appropriation, Energy and Water Development, restored $10 million to the Defense Nuclear Waste Disposal for activities related to the Site Recommendation Report.

Site Description

Argonne National Laboratory

In support of the Design and Engineering budget element, Argonne National Laboratory conducts waste form testing. The laboratory is also the custodian for new spent fuel approved test material.

Lawrence Berkeley Laboratory

In support of the Core Science budget element, Lawrence Berkeley National Laboratory (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 site recommendation and license application.

Lawrence Livermore National Laboratory

In support of the Core Science budget element, Lawrence Livermore National Laboratory (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 ESF and the proposed heater tests in the cross drift. In support of the Design and Engineering budget element, LLNL conducts testing and modeling of the waste package environment, waste package materials and waste forms. LLNL also supports the abstraction activities needed to conduct the total system performance assessment in support of the site recommendation and license application.

Sandia National Laboratory

In support of the Core Science budget element, Sandia National Laboratories conducts in-situ monitoring in the exploratory studies facility (ESF) and in the east-west drift, and performance confirmation testing. The laboratory conducts geoengineering and rock mechanics studies, and backfill analyses in support of the Design and Engineering budget element. The laboratory also supports the Suitability/Licensing and Performance Assessment budget element with performance assessment modeling.

Los Alamos National Laboratory

In support of the Core Science budget element, Los Alamos National Laboratory (LANL) conducts geochemistry, mineralogy, and colloid transport studies. LANL conducts laboratory and field-scale transport tests, including the Busted Butte transport test, and develops radionuclide transport models for the unsaturated and saturated zone groundwaters at the site. LANL corroborates with USGS on isotopic and groundwater chemistry investigations needed for transport models. In support of the Operations/Construction budget element, the laboratory coordinates testing at the Yucca Mountain site,

including testing in the ESF. LANL also supports the abstraction activities needed to conduct the total system performance assessment in support of the site recommendation and license application.

Nevada Operations Office

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 Site Characterization Office.

Nevada Test Site

In support of the Core Science and Operations/Construction budget elements at the Yucca Mountain site, the Nevada Test Site (NTS), through Bechtel Nevada, provides 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.

Oak Ridge National Laboratory

In support of the Design and Engineering budget element, the Oak Ridge National Laboratory 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.

Pacific Northwest National Laboratory

In support of the Design and Engineering budget element, the Pacific Northwest National Laboratory provides waste form testing support.

03-RW-01 Yucca Mountain Monitored Geologic Repository, Project Engineering Design (PED), Yucca Mountain Project Office, Clark County, Nevada

Significant Changes

- This is the initial Project Data Sheet for Project Engineering Design. The data sheet is based on the presumption that the Secretary will decide, based on information obtained from site characterization and after considering the views and comments of the public, the State, and the Nuclear Regulatory Commission, to recommend the site to the President in FY 2002. This data is preliminary and will be updated after Critical Decision (CD-1), Approve Preliminary Baseline Range, which will occur after the Yucca Mountain site designation by Congress expected in FY 2003.

1. Construction Schedule History

	Fiscal Quarter				Total Estimated Cost ($000)	Total Project Cost ($000)
	A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
FY 2003 Budget Request *(Preliminary Estimate)*	1Q 2003	4Q 2006	N/A	N/A	613300	731500

2. Financial Schedule

(dollars in thousands)

Fiscal Year	Appropriations	Obligations	Costs
Design			
2003	110000	104600	104600
2004	175000	166200	166200
2005	220000	209000	209000
2006	108300	133500	133500

3. Project Description, Justification and Scope

The Yucca Mountain Monitored Geologic Repository Project supports the vital national program to safely store and monitor high-level radioactive waste and spent nuclear fuel from both commercial and government sources. This project is the culmination of many years of scientific research, testing and engineering studies initiated in response to the requirements of the Nuclear Waste Policy Act of 1982, and is the first major Line Item project to be released under the Office of Civilian Radioactive Waste Management (OCRWM).