Department of Energy
Washington, DC 20585

FEB 12 1992

Mr. John J. Linehan
Deputy Director, Division of High-Level
Waste Management
Office of Nuclear Material Safety
and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Mr. Linehan:

Enclosed for your information is a copy of Volume 3 of the U.S. Department of Energy (DOE) Fiscal Year (FY) 1993 Congressional Budget which provides a summary of estimates by major activity of the Nuclear Waste Fund Budget Authority for the DOE Office of Civilian Radioactive Waste Management.

Sincerely,

John P. Roberts
Acting Associate Director for
Systems and Compliance
Office of Civilian Radioactive
Waste Management

Enclosure:
Volume 3, DOE FY 1993 Congressional Budget
Nuclear Waste Fund

102 120 WM-1 NH01

cc w/o Enclosure:
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R. Loux, State of Nevada
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S. Bradhurst, Nye County, NV
B. Raper, Nye County, NV
P. Niedzielski-Eichner, Nye County, NV
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R. Michener, Inyo County, CA
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NUCLEAR WASTE FUND

VOLUME 3

[redacted]

NUCLEAR WASTE FUND

VOLUME 3

Department of Energy
FY 1993 Congressional Budget

Summary of Estimates by Major Activity
Nuclear Waste Fund
Budget Authority
(Dollars in Million)

	FY 1991 Enacted	FY 1992 Enacted	FY 1993 Departmental Request
Nuclear Waste Fund	$242.8	$275.1	$392.0
Total, Nuclear Waste Fund	$242.8	$275.1	$392.0

DEPARTMENT OF ENERGY

Proposed Appropriation Language

Nuclear Waste Disposal Fund

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, [$275,071,000] $391,976,000, to remain available until expended, to be derived from the Nuclear Waste Fund. To the extent that balances in the fund are not sufficient to cover amounts available for obligation in the account, the Secretary shall exercise his authority pursuant to section 302(e)(5) of said Act to issue obligations to the Secretary of the Treasury: Provided, That of the amount herein appropriated, within available funds, not to exceed [$5,000,000] $6,900,000 may be provided to the State of Nevada, for the conduct of its oversight responsibilities pursuant to the Nuclear Waste Policy Act of 1982, Public Law 97-425, as amended: Provided further, That of the amount herein appropriated, not more than [$4,000,000] $8,500,000 may be provided to affected local governments, as defined in the Act, to conduct appropriate activities pursuant to the Act: Provided further, That the distribution of the funds herein provided among the affected units of local government shall be determined by the Department of Energy (DOE) and made available to the State and affected units of local government by direct payment: Provided further, That within 90 days of the completion of each Federal fiscal year, each entity shall provide certification to the DOE, that all funds expended from such direct payment moneys have been expended for activities as defined in Public Law 97-425, as amended. Failure to provide such certification shall cause such entity to be prohibited from any further funding provided for similar activities: Provided further, That none of the funds herein appropriated may be used directly or indirectly to influence legislative action on any matter pending before Congress or a State legislature or for any lobbying activity as provided in 18 U.S.C. 1913: Provided further, That none of the funds herein appropriated may be used for litigation expenses: Provided further, That of the amount appropriated herein, up to [$3,500,000] $1,700,000 shall be available for infrastructure studies and other research and development work to be carried out by the University of Nevada, Las Vegas (UNLV) and the University of Nevada, Reno. Funding to the universities will be administered by the DOE through a cooperative agreement.

DEPARTMENT OF ENERGY

Proposed Appropriation Language

Nuclear Waste Disposal Fund (continued)

In paying the amounts determined to be appropriate as a result of the decision in Consolidated Edison Company of New York v. Department of Energy 870 F.2d 694 (D.C. Cir. 1989), the Department of Energy shall pay interest at a rate to be determined by the Secretary of the Treasury and calculated from the date the amounts were deposited into the Nuclear Waste Fund. Such payments may be made by credits to future utility payments into the Fund.

DEPARTMENT OF ENERGY
FY 1993 CONGRESSIONAL BUDGET REQUEST
NUCLEAR WASTE FUND

OVERVIEW

NUCLEAR WASTE FUND

The success of the Office of Civilian Radioactive Waste Management (OCRWM) Program is critical for the United States to manage and permanently dispose of spent nuclear fuel and high-level nuclear waste and to reestablish confidence in the nuclear energy option. The program must conform to all applicable environmental and safety standards and, in fact, implement national policy on the safe management and disposal of spent nuclear fuel and high-level radioactive waste. Projections for electric power production reflect that, absent any new orders, nuclear-generated electricity will cease to be a contributor by the year 2040. The financial community and the nuclear utility industry view successful implementation of this program as the cornerstone of a viable, continuing United States nuclear energy option. For these reasons, it is essential that the Administration and the Congress demonstrate Federal resolve to move forward aggressively with the Civilian Radioactive Waste Management Program.

The Nuclear Waste Policy Act of 1982 (NWPA), as amended, authorizes the Department of Energy (DOE) to site, construct, and operate a geologic repository for the disposal of spent nuclear fuel and high-level radioactive waste; to site, construct, and operate one Monitored Retrievable Storage (MRS) facility; and to provide for the safe transportation of spent nuclear fuel and high-level radioactive waste in casks certified by the Nuclear Regulatory Commission (NRC) and in accordance with regulations promulgated by the U.S. Department of Transportation. The NWPA, as amended, directs the DOE to characterize the Yucca Mountain candidate site in Nevada to assess whether or not it is suitable for a geologic repository. To ensure the safe management and disposal of waste, the program must execute all activities related to radiological safety and waste isolation in accordance with an NRC-accepted quality assurance program.

OCRWM's FY 1993 Congressional budget request seeks to achieve balance among the major Program components -- the Yucca Mountain Site Characterization Project and the MRS Project, along with the supporting transportation system. However, while building on the momentum generated by the initiation, in July 1991, of new surface-based testing at Yucca Mountain, the request recognizes that the Program continues to face potential political obstacles with respect to the scientific investigations at that site, and that the Nuclear Waste Negotiator has not yet identified a volunteer host for an MRS facility.

GEOLOGIC REPOSITORY: A critical prerequisite to new scientific investigations at Yucca Mountain is receipt of the necessary environmental permits from the State of Nevada. Substantial progress has been made in this regard since the FY 1992 Congressional budget submisssion. On June 12, 1991 and July 17, 1991, respectively, the State of Nevada issued two environmental permits -- an air quality permit and an underground injection permit. Following receipt of these two permits from the State of Nevada, OCRWM was able to resume surface-disturbing work at Yucca Mountain for the first time since 1986. Further, on September 13, 1991, the State of Nevada issued a one-year temporary water appropriation permit for Well VH-1. Under this permit, OCRWM is able to obtain water although it is from a well which is 45 miles from the Yucca Mountain site. Unless the State fails to renew the temporary water permit, OCRWM now has in hand all the environmental permits necessary to carry out all planned work in FY 1992 and FY 1993 at the site.

The State Engineer has recently completed hearings regarding the issuance of a permanent water permit, and a decision is expected by the end of January 1992. As site characterization progresses, OCRWM will need additional permits. Therefore, to preclude further delays by Nevada in the permitting process, or prolonged legal battles with the State over future permit applications, the Administration included a legislative initiative as part of the proposed National Energy Strategy Act (S.570 and H.R. 1301), which would remand permitting authority from the State of Nevada to the Federal Government and waive any requirements for permits under State, local, or tribal law. In May 1991, Senators Johnston and Wallop introduced S. 1138, a free-standing bill, which is virtually identical to Sections 511 & 512 of S.570 and H.R. 1301. This bill was reported out of committee on June 12, 1991, by a vote of 14 to 5. The House Energy and Commerce Committee is also considering legislation similar to S. 1138 as part of an omnibus energy bill.

MONITORED RETRIEVABLE STORAGE: This activity supports the siting, design, construction, licensing through the NRC, and operation of a facility to perform spent fuel receipt, handling, and storage, as necessary, prior to permanent emplacement in a geologic repository. The Office of the Nuclear Waste Negotiator is making significant progress in seeking a volunteer host for an MRS facility. The Department fully supports its effort and the continuation of this process. In support of the Nuclear Waste Negotiator, OCRWM recently awarded two phase-I MRS feasibility assessment grants, one to the Mescalero Apache Indian Tribe, and the other to Grant County, North Dakota. Since then, 5 additional phase-I grant applications have been received, and others are expected by the end of the second quarter, FY 1992. These awards may be followed by phase-II grant applications in FY 1992. The phase-II grants will be used by potential hosts to support negotiations with the Nuclear Waste Negotiator, possibly leading to a siting agreement for Congressional approval. If the current statutory linkages between the MRS and repository schedules are modified, the MRS facility will provide the Federal nuclear waste management system with the capability for earlier acceptance of spent nuclear fuel than would be possible at a repository.

TRANSPORTATION: The purpose of this activity is to ensure that a safe, environmentally acceptable, and cost-effective transportation system is in place to transport spent fuel to a waste management facility; provide for the design, development, certification, and testing of necessary transportation equipment and services; identify and resolve institutional issues; and provide for the operational aspects of the shipment of spent fuel and high-level wastes to storage and/or final disposal facilities.

SYSTEMS and COMPLIANCE: This activity encompasses the former Systems Integration activity, with the addition of regulatory compliance activities. It serves to ensure that waste management components are integrated into a single waste management system.

PROGRAM MANAGEMENT and TECHNICAL SUPPORT: This activity includes Federal salaries, benefits, travel, and administrative and technical support for the overall civilian radioactive waste management program.

In carrying out all of OCRWM's activities, emphasis is being placed on the implementation of a comprehensive quality assurance program. The quality assurance program will provide OCRWM the assurances that activities are conducted in a manner to appropriately address those issues relative to public health and safety and the protection of the environment, and meet NRC licensing requirements.

DEPARTMENT OF ENERGY
FY 1993 CONGRESSIONAL BUDGET REQUEST
NUCLEAR WASTE FUND
(dollars in thousands)

LEAD TABLE

Nuclear Waste Fund

Activity	FY 1991 Enacted	FY 1992 Enacted	FY 1993 Base	FY 1993 Request	Program Change Request vs Base		FY 1994 Request	FY 1995 Request
					Dollar	Percent		
First Repository								
Operating Expenses	$ 151,832	$ 156,922	$ 156,922	$ 229,710	$ +72,788	+46%	$ 212,410	$ 219,610
Capital Equipment	3,348	8,628	8,628	18,600	+9,972	+116%	35,900	28,700
Subtotal, First Repository	$ 155,180	$ 165,550	$ 165,550	$ 248,310	$ +82,760	+50%	$ 248,310	$ 248,310
Monitored Retrievable Storage								
Operating Expenses	$ 7,947	$ 16,225	$ 16,225	$ 40,743	$ +24,518	+151%	$ 40,743	$ 40,743
Construction	0	0	0	0	0	0%	0	0
Subtotal, Monitored Retrievable Storage	$ 7,947	$ 16,225	$ 16,225	$ 40,743	$ +24,518	+151%	$ 40,743	$ 40,743
Transportation, Systems Integration, and Engineering Development								
Operating Expenses	$ 28,333	$ 33,683	$ 33,683	$ 28,965	$ -4,718	-14%	$ 28,965	$ 28,965
Capital Equipment	0	0	0	0	0	0%	0	0
Construction	0	0	0	0	0	0%	0	0
Subtotal, Transportation, Systems Integration, and Engineering Development	$ 28,333	$ 33,683	$ 33,683	$ 28,965	$ -4,718	-14%	$ 28,965	$ 28,965
Systems and Compliance								
Operating Expenses	$ 0	$ 0	$ 0	$ 19,599	$ +19,599	>999%	$ 19,599	$ 19,599

LEAD TABLE - Nuclear Waste Fund (cont'd)

Activity	FY 1991 Enacted	FY 1992 Enacted	FY 1993 Base	FY 1993 Request	Program Change Request vs Base Dollar	Program Change Request vs Base Percent	FY 1994 Request	FY 1995 Request
Program Management and Technical Support								
Operating Expenses	$ 51,370	$ 59,613	$ 59,613	$ 54,359	$ -5,254	-9%	$ 54,359	$ 54,359
Capital Equipment	0	0	0	0	0	0%	0	0
Subtotal, Program Management and Technical Support	$ 51,370	$ 59,613	$ 59,613	$ 54,359	$ -5,254	-9%	$ 54,359	$ 54,359
TOTAL	$ 242,830	$ 275,071	$ 275,071	$ 391,976	$ +116,905	+42%	$ 391,976	$ 391,976
Summary								
Operating Expenses	$ 239,482	$ 266,443	$ 266,443	$ 373,376	$ +106,933	+40%	$ 356,076	$ 363,276
Capital Equipment	3,348	8,628	8,628	18,600	+9,972	+116%	35,900	28,700
Construction	0	0	0	0	0	0%	0	0
Total Program a/	242,830	275,071	275,071	391,976	$ +116,905	+42%	$ 391,976	$ 391,976
Staffing (FTE's)	225	258	258	258			258	258

Authorizations:
P.L. 97-425, "Nuclear Waste Policy Act of 1982"
P.L. 100-203, "Nuclear Waste Policy Amendments Act of 1987"

a/ Outyear funding amounts reflect the Administration's policy to assume straight funding for all programs. The actual outyear funding will be reevaluated as part of the FY 1994 budget process.

DEPARTMENT OF ENERGY
FY 1993 CONGRESSIONAL BUDGET REQUEST
OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT

NUCLEAR WASTE FUND

PROJECTED RECEIPTS BY FISCAL YEAR

(Dollars in Thousands)

	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995	FY 1996	FY 1997
One mill/kWh Fee 1/	594,230	554,700	553,700	560,800	570,500	577,100	585,900
Fee Credits 2/		(30,000)	(160,000)	(190,000)	(30,000)		
One-time Fee	6,000	6,000	6,000	6,000	6,000	6,000	6,000
Defense Waste Fee 3/	5,000	7,500					
Subtotal	605,230	538,200	399,700	376,800	546,500	583,100	591,900
Interest Income 4/	241,030	231,100	241,400	255,500	267,100	281,500	294,000
Total Income	846,260	769,300	641,100	632,300	813,600	864,600	885,900

1/ Based on projected net nuclear electricity generation as a result of Wisconsin Electric Power Company, et al. v. Hodel, 84-8571, decided December 6, 1985.

2/ Result of Consolidated Edison v. DOE, decided March 17, 1989.

3/ Defense Waste Fee payments have not been determined beyond FY 1992.

4/ FY 1992 through FY 1997 represent net earnings on investments available for appropriation.

Note: Receipt estimates for the one mill/kWh fee were derived from the Energy Information Administration's Nuclear Waste Fund Revenue Projections through FY 1993. (Based on October 5, 1991 revised projections).

DEPARTMENT OF ENERGY
FY 1993 CONGRESSIONAL BUDGET REQUEST
NUCLEAR WASTE FUND
(dollars in thousands)

SUMMARY OF CHANGES

FY 1992 Appropriation	$ 275,071
Adjustments	-0-
FY 1993 Base	$ 275,071
First Repository	
o Transfer of regulatory compliance activities to Systems and Compliance	- 3,240
o Increase due to the following activities: A trenching program will begin; a saturated zone drilling program and a systematic drilling program will be initiated for early site suitability evaluation; Title II design for the Exploratory Studies Facility (ESF) first access buildings and surface facilities will be completed; Title II design for first and second access portals will be initiated and completed; site preparation and surface facilities construction at the first access will begin; Title II design for first access ramp will be initiated; Title II design for ESF second access site preparation and buildings and surface facilities will be initiated and completed	+ 86,000
Monitored Retrievable Storage	
o Transfer of MRS technical support from the Program Management and Technical Support decision unit	+ 2,115
o Transfer of Engineering Development activities from the former Transportation, Systems Integration, and Engineering Development decision unit	+ 2,268

Monitored Retrievable Storage (cont.)

- Increase due to the following additional activities: Review, prepare, and issue final Environmental Assessment (EA) for MRS site; establish Project Office in vicinity of selected site; fund and administer financial assistance to host site; collect, analyze, and integrate site data in planning for the Environmental Impact Statement (EIS); initiate and complete MRS Title I design and initiate Title II design..... + 20,135

Transportation, Systems Integration, and Engineering Development

- Transfer of Transportation activities to Transportation and Waste Acceptance..... - 18,355
- Transfer of Systems Integration activities to Systems and Compliance..... - 13,060
- Transfer of Engineering Development activities to MRS..... - 2,268

Transportation and Waste Acceptance

- Transfer of Transportation activities from the former Transportation, Systems Integration, and Engineering Development decision unit..... + 18,355
- Transfer of Waste Acceptance activities from the Program Management and Technical Support decision unit..... + 2,479
- Increase due to the following additional activities: Award of contract(s) for acquisition of complementary casks from private industry for early shipment capability; develop draft Section 180 (c), NWPA, policy options for program implementation; initiate determination of rail routing criteria; initiate transportation system risk assessment; initiate development of criteria to establish total system software, personnel, and equipment requirements; continue and complete Cask Maintenance Facility (CMF) pre-conceptual design studies..... + 8,131

Systems and Compliance

o Transfer of regulatory compliance activities from the First Repository decision unit	+ 3,240
o Transfer of Systems Integration activities from the former Transportation, Systems Integration, and Engineering Development decision unit	+ 13,060
o Transfer of Systems-related technical support from the Program Management and Technical Support decision unit	+ 2,600
o Increase due to detailed systems engineering studies in support of repository and MRS design efforts	+ 699

Program Management and Technical Support

o Transfer of technical support to MRS activity	- 2,115
o Transfer of technical support to Systems and Compliance activity	- 2,600
o Transfer of waste acceptance activities to Transportation and Waste Acceptance activity	- 2,479
o Increase to provide for program-wide technical support, inflation on salaries, and benefits	+ 1,940
FY 1993 Congressional Budget Request	$ 391,976

DEPARTMENT OF ENERGY
FY 1993 CONGRESSIONAL BUDGET REQUEST
NUCLEAR WASTE FUND
(dollars in thousands)

KEY ACTIVITY SUMMARY

NUCLEAR WASTE FUND

I. Preface: First Repository

With passage of the Nuclear Waste Policy Amendments Act (NWPAA) in December 1987, the tuff candidate repository site at Yucca Mountain, Nevada, was selected for detailed investigation to determine site suitability.

A critical prerequisite to new scientific investigations at the Yucca Mountain candidate site is receipt of the necessary environmental permits from the State of Nevada. On June 12, 1991 and July 17, 1991, respectively, the State of Nevada issued two of the three pending permits -- an air quality permit and an underground injection control permit. With these permits in hand, OCRWM began limited new surface-based testing activities at the candidate site on July 8, 1991, using water trucked in from California for dust suppression. Subsequently, on September 13, 1991, the State issued a temporary (one-year) water appropriation permit. The State Engineer recently completed hearings on issuance of a permanent water permit, with a decision expected by the end of January 1992. Barring non-renewal of the temporary water permit, OCRWM now has in hand all the environmental permits required to carry out all planned work in FY 1992 and FY 1993 at the site.

The scientific investigation of the Yucca Mountain candidate site involves a program of surface-based tests, including the collection and analysis of geologic, hydrologic, geochemical, and climatological data; environmental and socioeconomic evaluation; the construction of an underground test facility, and the conduct of the in-situ test program within the facility; institutional interactions with the State of Nevada and affected local governments; payments-equal-to-taxes to the State of Nevada and appropriate local jurisdictions; financial assistance for investigation and mitigation and oversight by the State of Nevada; implementation of the Benefits Agreements program as required; extensive interactions with the NRC and with the Presidentially-appointed Nuclear Waste Technical Review Board; and project management activities, including a rigorous quality assurance program to ensure that all aspects of the work are conducted effectively and efficiently. If the Yucca Mountain candidate site is found suitable and is designated as the repository site, the site investigation program will culminate in submission of a license application to the NRC to construct a high-level nuclear waste repository. In addition to the site-specific work to be implemented, geoscientific analysis, risk assessments, Material Characterization Center tasks related to spent fuel and high-level waste forms, development and analysis of performance assessment models, defense high-level waste design and performance studies, and participation in and reviews of selected foreign waste management activities, will be conducted.

During FY 1992, OCRWM will maintain the momentum generated by the start of new surface-based testing at Yucca Mountain in July 1991, by conducting as much drilling as possible as soon as possible to optimize early site suitability evaluation and hydrologic considerations. Concurrently, during FY 1992, OCRWM will pursue early issue closure to the maximum extent possible and focus on putting the necessary performance assessment tools in place.

In FY 1993, OCRWM plans to conduct the following activities at the Yucca Mountain candidate site:

o A trenching program will begin; a saturated zone drilling program and a systematic drilling program will be initiated for site suitability evaluation; data collection on calcite-silica studies and Midway Valley studies will continue.

o Title II design for Exploratory Studies Facility (ESF) first access buildings and surface facilities will be completed; Title II design for ESF first and second access portals will be initiated and completed; site preparation and surface facilities construction at first access will begin; Title II design for the first access ramp will be initiated; Title II design for second access site preparation, buildings and surface facilities will be initiated and completed.

o The Yucca Mountain Field Operations Center will be staffed for the continued expansion of surface-based testing and start of ESF construction;

I. First Repository (Cont'd)

long-lead procurement for electrical power lines and material upgrades will start; Area 25 infrastructure improvements will continue.

o Enhancement of the project-level Planning and Control System (PACS) will continue; implementation of participant-level cost/schedule control systems will be completed; expansion of the program-wide area network, to include the field operations center, will continue; and the quality assurance program will keep pace with the accelerated project activities.

o To meet the overall project goal to submit a repository license application to the Nuclear Regulatory Commission in 2001, as currently scheduled, a more aggressive funding profile will be required for the outyears

II. A. Summary Table: First Repository

Program Activity	FY 1991 Enacted	FY 1992 Enacted	FY 1993 Request	% Change	FY 1994 Request	FY 1995 Request
Systems	$ 16,781	$ 18,600	$ 24,000	+ 29	$ 24,000	$ 24,000
Waste Package	6,833	5,000	6,800	+ 36	6,800	6,800
Site	32,561	37,800	57,200	+ 51	57,200	57,200
Repository	10,927	9,729	14,310	+ 47	14,310	14,310
Regulatory/Institutional	18,199	21,775	22,000	+ 1	22,000	22,000
Exploratory Studies Facility	0	0	35,000	>999	35,000	35,000
Exploratory Shaft	9,944	7,000	0	-100	0	0
Test Facilities	3,223	6,000	15,000	+150	15,000	15,000
Project Management	40,980	47,146	54,000	+ 15	54,000	54,000
Financial and Technical Assistance	15,732	12,500	20,000	+ 60	20,000	20,000
Total, First Repository	$ 155,180	$ 165,550	$ 248,310	+ 50	$ 248,310	$ 248,310

II. B. Major Laboratory and Facility Funding

Argonne National Laboratory (East)	$ 1,245	$ 400	$ 400	0	$ 400	$ 400
Brookhaven National Laboratory	$ 105	$ 120	$ 100	- 17	$ 100	$ 100
DOE Field Office, Chicago (Chicago)	$ 4,908	$ 1,200	$ 0	-100	$ 0	$ 0
Lawrence Berkeley National Laboratory	$ 3,274	$ 2,543	$ 1,998	- 21	$ 1,998	$ 1,998
Lawrence Livermore National Laboratory	$ 8,815	$ 8,521	$ 7,857	- 8	$ 7,857	$ 7,857
Los Alamos National Laboratory	$ 8,814	$ 12,418	$ 14,959	+ 20	$ 14,959	$ 14,959
DOE Field Office, Nevada	$ 105,284	$ 121,004	$ 203,104	+ 68	$ 203,104	$ 203,104
Oak Ridge National Laboratory	$ 35	$ 33	$ 0	-100	$ 0	$ 0
DOE Field Office, Oak Ridge	$ 65	$ 65	$ 0	-100	$ 0	$ 0
Pacific Northwest Laboratory	$ 3,675	$ 2,831	$ 2,913	+ 3	$ 2,913	$ 2,913
Sandia National Laboratories	$ 19,901	$ 16,423	$ 16,979	+ 3	$ 16,979	$ 16,979

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
First Repository					
Systems	Continued maintenance of the Systems Engineering Management Plan (SEMP), Configuration Management Plan (CMP), and implementing procedures. Continued systems engineering activities to support initiation of limited surface-based testing (SBT) activities. Continued to identify and define Yucca Mountain Site Caracterization Project (YMPO) interfaces for the Site Characterization SBT activities and Exploratory Studies Facility (ESF) design. Expanded configuration management to encompass field activities by establestablishing field change control. Updated the Q-List, Quality Activities List, and the Project Requirements List to support ESF design resumption. Performed a specific functional analysis for the Yucca Mountain Mined Geologic Disposal System (MGDS). Continued implementation of the Management System Improvement Strategy (MSIS). Established an interim technical baseline hierarchy for the ESF	Continue maintenance of the SEMP, CMP and implementing procedures. Continue systems engineering activities to support SBT activities and detailed design of the ESF. Update, as necessary, the Q-List, Quality Activities List, and Project Requirements List to support ESF design and field activities. Continue field configuration management to support SBT. Initiate systems engineering activities to support ESF construction. Continue to identify and define YMPO interfaces for SBT activities and ESF design. Continue maintenance of the technical baseline to support performance assessment. Update YMPO's technical document hierarchy to serve as the requirements basis for the initiation of the waste package and repository Advanced Conceptual Design (ACD). Continue implementation of the MSIS. Continue review and update the TDB and the RIB. Input information to ATDT. Prepare to input data from site investigations to the	Continue maintenance of the SEMP, CMP, and implementing procedures. Continue systems engineering activities to support SBT activities and design of the ESF first access site preparation. Accelerate systems engineering activities in support of SBT activities. Update, as necessary, the Q-List, Quality Activities List, and Project Requirements List to support ESF site preparation design and field activities. Complete a systems study plan for the YMP. Complete, and initiate implementation of plans for specialty engineering (e.g., Rehabilitation Plan, Maintainability Plan, and Value Engineering Plan). Continue field configuration management to support SBT. Initiate systems engineering activities to support ESF site preparation design. Continue implementation of the field change control system. Continue to identify and define YMPO interfaces for SBT activities and ESF site	Provide overall management of the systems activities, including planning, scheduling, budgeting, controlling, and reporting. Maintain consistency with YMP planning guidance. Essential tasks required in the program planning documents will be reviewed for adequacy to ensure that tasks are identified, prioritized, and properly assigned. Provide System Engineering Integration, Performance Assessment, and Technical Data Base Integration support. Prepare and implement QA program procedures. Support the Technical Assessment Team, Quality Review Board, and the Planning Council. Maintain the YMP Q-List, and YMP Requirements List as necessary. Provide for interaction with YMP participants. Coordinate participant activities to implement the YMP SEMP. Maintain the technical element of the YMP Technical Baseline in accordance with the YMP SEMP and related control procedures. Continue maintenance of the	Provide overall management of the systems activities including planning, scheduling, budgeting, controlling, and reporting. Maintain consistency with YMP planning guidance. Essential tasks required in the program planning documents will be reviewed for adequacy to ensure that tasks are identified, prioritized, and properly assigned. Provide System Engineering Integration, Performance Assessment, and Technical Data Base Integration support. Prepare and implement QA program procedures. Support the Technical Assessment Team, Quality Review Board, and the Planning Council. Maintain the YMP Q-List and YMP Requirements List. Provide for interaction with YMP participants. Coordinate the participant activities to implement the YMP SEMP. Maintain the technical element of the YMP Technical Baseline in accordance with the YMP SEMP and related control procedures. Continue

III. First Repository (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Systems (Cont'd)	in accordance with a functional analysis to support resumption of ESF design studies. Continued review and update of technical data bases (TDB) and the Reference Information Base (RIB). Continued development of Geographic Information System (GIS) to support site characterization. Developed an Automatic Technical Data Tracking (ATDT) System. Continued study of radionuclide transport through porous and fractured rock. Continued to perform preliminary Performance Assessment (PA) analysis. Continued benchmarking and verification of codes and validation of models for total systems performance. Completed a Performance Assessment Implementation Plan (PAIP) for FY 1992 activities. Continued waste package PA and uncertainty analysis. Updated EQ3/6 code and data base. Continued to use PA to prioritize SBT and revise plans for additional testing as appropriate. Iterated Performance Assessment Calculational Exercise (PACE) calculations with newly	TDB. Prepare to assist in production of Quarterly Project Data Catalogue. Continue work on Ground-Water Travel Time (GWTT) model and develop PA codes. Restart model development work on preclosure source term and scenario classes. Complete a PAIP for FY 1993 activities. Continue waste package PA and uncertainty analysis. Update EQ3/6 code and data base. Continue integration of PA and SBT. Integrate PA and EBS design activities. Continue integration of PA with the Early Site Suitability Evaluation (ESSE) process. Prepare to support site suitability evaluation modeling of total system performance and individual processes, the evaluation of potentially favorable and adverse conditions, and the formulation of higher-level findings. Prepare to support Waste Package (WP) and repository design with Performance Analyses. Support ESF Title II design re-start. Conduct limited model development, validation, and documentation. Continue to develop scenario event	preparation design. Requirements documents will be updated to support future Repository ACD, which will begin in FY 1995. Continue maintenance of the technical baseline to support performance assessment. Update YMPO's technical document hierarchy to serve as the requirements basis for the initiation of the Waste Package ACD. Waste Package ACD will start in FY 1994. Continue implementation of the MSIS. Continue review and update of the TDB and the RIB. Input information to ATDT. Prepare to provide PA and TDB integration support. Input data from site investigations to the TDB. Assist in production of Quarterly Project Data Catalogue. Continue work on GWTT model and develop PA codes. Continue development of preclosure risk assessment approach. Complete a PAIP for FY94 activities. Continue WP PA and uncertainty analysis. Update EQ3/6 code and data base. Integrate PA and EBS design activities. Support site-suitability	technical baseline to support PA. Maintain the systems study plan. Assist the YMPO in conducting formal reviews during the design and engineering phase of the YMP. Review System Study Reports as required. Implement and maintain plans for specialty engineering, e.g., Reliability Program Plan, Maintainability Plan, and Risk Management Plan. Review and update the RIB. Implement and maintain plans and procedures to support configuration management and change control requirements. Input data from site investigations to the TDB. Prepare standard and special request products from the TDB, including the Site and Engineering Properties Data Base (SEPDB) Quarterly Report, Site Atlas, and Planned Site Investigations Report. Continue development of data base for 3-D modeling system used in management assessments of site investigations. Input information to the ATDT. Use ATDT to produce the Quarterly Project Data Catalog. Continue work on GWTT model and develop PA codes. Continue devel-	maintenance of the technical baseline to support PA. Maintain the systems study plans. Assist the YMPO in conducting formal reviews during the design and engineering phase of the YMP. Review System Study Reports as required. Implement and maintain plans for specialty engineering, e.g., Reliability Program Plan, Maintainability Program Plan, and Risk Management Plan. Review and update the RIB. Implement and maintain plans and procedures to support configuration management and change control requirements. Input data from site investigations to the TDB. Prepare standard and special request products from the TDB, including the SEPDB Quarterly Report, Site Atlas, and Planned Site Investigations Report. Obtain new orthophotography of the site to update GIS coverages and produce new base maps. Update GIS coverages and release revised base maps. Continue development of data base for 3-D modeling system used in management assessments of site investigations. Input information to

III. First Repository (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Systems (Cont'd)	acquired site data. Conducted Early Site Suitability Evaluation (ESSE) with definitions of potentially diqualifying scenarios and conditions. Provided input to Test Prioritization Task. Supported ESF alternative studies and ESF design and test planning. Supported Calico Hills Risk/ Benefit Analysis and completed documentation of PACE-90 analyses. These activities utilized $6,156K of prior-year unobligated funds.	trees and preliminary scenario models suitable for mathematical analyses. Document the 1991 Total System Performance assessment (TSPA) capability demonstration and prepare for an expanded iteration in FY93. Perform laboratory and field experiments of fluid flow and contaminant transport in order to improve conceptual models for fractured rocks, to provide data for model validation, and to formulate a model validation approach. Evaluate, document, and integrate new site data from SBT. Continue entry of performance assessment computer codes into the Quality Assurance (QA) software configuration management system.	evaluations with the analysis of potentially disqualifying scenarios and conditions. Continue preparations to support site suitability evaluations with modeling of total system performance and individual processes, the evaluation of potentially favorable and adverse conditions, and the formulation of higher-level findings. Provide input to testing prioritization. Continue performance analyses for the ESF design packages in parallel with the ESF Title II design to evaluate impacts of ESF construction and operation on the planned tests and data collection and on pre- and post-closure repository performance. Initiate performance analyses in support of the Waste Package and Repository ACD. Resume seal performance assessments and methodology development. Continue model and code development, improvement, verification, and documentation. Continue to develop scenario event trees and preliminary scenario models suitable for	opment of preclosure risk assessment approach. Complete a PAIP for FY95 activities. Continue Waste Package (WP) PA and uncertainty analysis. Update EQ3/6 code and data base. Integrate PA and EBS design activities. Support site-suitability evaluations with analysis of potentially disqualifying scenarios and conditions; modeling of total system performance and individual processes; evaluation of potentially favorable and adverse conditions; and formulation of higher-level findings. Provide input to testing prioritization. Continue performance analyses of ESF design packages in parallel with the ESF Title II design to evaluate impacts of ESF construction and operation on planned tests and data collection, and on pre- and post-closure repository performance. Continue similar analyses in support of the WP and repository ACD. Continue seal performance assessments. Continue model development, improvement, verification, and documentation for Waste	the ATDT. Use ATDT to produce the Quarterly Project Data Catalog. Continue work on GWTT model and develop PA codes. Continue development of preclosure risk assessment approach. Complete a PAIP for FY96 activities. Continue WP PA and uncertainty analysis. Update EQ3/6 code and data base. Integrate PA and EBS design activities. Support site-suitability evaluations with analysis of potentially disqualifying scenarios and conditions; modeling of total system performance and individual processes; evaluation of potentially favorable and adverse conditions; and formulation of higher-level findings. Provide input to testing prioritization. Complete a total system performance assessment of final ESF Title II design to evaluate impacts of ESF construction and operation on planned tests and data collection and on pre- and post-closure repository performance. Continue PA in support of the WP and repository ACD. Continue seal performance assess-

III. First Repository (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Systems (Cont'd)			mathematical analyses. Continue the demonstration of TSPA capability for the computation of complementary cummulative distribution functions (CCDFs) considering scenario probabilities and conceptual model and data uncertainties. Continue laboratory and field experiments of fluid flow and contaminant transport in order to improve conceptual models for unsaturated and saturated fractured rocks and to provide data for model validation. Resume benchmarking and validation of performance assessment codes and models. Evaluate, document, and integrate new site data from surface-based testing. Continue entry of performance assessment computer codes into the QA software configuration management system.	Package and total system performance assessment; and simulations of fluid flow, radionuclide transport, geochemical reactions, and thermo-mechanical processes. Initiate documentation of scenario event trees and of preliminary scenario models suitable for mathematical analyses. Continue the demonstration of total system PA capability for the computation of CCDFs considering scenario probabilities and conceptual model and data uncertainties. Continue laboratory and field experiments of fluid flow and contaminant transport to improve conceptual models for unsaturated and saturated fractured rocks and to provide data for model validation. Continue benchmarking and validation of performance assessment codes and models. Evaluate, document, and integrate new site data from SBT and from the ESF portal construction. Continue entry of PA computer codes into the QA software configuration management system.	ments. Continue model development, improvement, verification, and documentation for Waste Package and total system performance assessment; and simulations of fluid flow, radionuclide transport, geo-chemical reactions, and thermo-mechanical processes. Continue documentation of scenario event trees and of preliminary scenario models suitable for mathematical analyses. Continue the demonstration of total system PA capability for the computation of CCDFs considering scenario probabilities and conceptual model and data uncertainties. Continue laboratory and field experiments of fluid flow and contaminant transport to improve conceptual models for unsaturated and saturated fractured rocks and to provide data for model validation. Continue benchmarking and validation of performance assessment codes and models. Evaluate, document, and integrate new site data from SBT and from the ESF portal construction. Continue entry of performance

III. First Repository (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Systems (Cont'd)					assessment computer codes into the QA software configuration management system.
	$ 16,781	$ 18,600	$ 24,000	$ 24,000	$ 24,000
Waste Package	Continued near-field environment testing and modeling in support of site characterization. Continued preparation of study plans for the near-field environment activities. Revised Site Characterization Plan (SCP) study plans. Completed the preliminary near-field environment report and the preliminary Waste Form Characterization Report. Performed waste form testing and modeling in support of performance assessment. Continued limited barrier material testing and modeling and updated the material selection criteria and the list of candidate Engineered Barrier System (EBS) materials. Identified the methodology and criteria for defining and selecting candidate waste package design concepts and developed a list of potential candidates. Maintained the	Finalize Near-Field Environment Report. Complete study plans and associated activity plans. Implement the software QA plan for the hydrothermal code, V-TOUGH. Maintain laboratory capability and ESF interfaces. Finalize Waste Form Characterization Report. Maintain spent fuel and glass samples and perform limited oxidation and dissolution testing. Continue limited waste form model development. Develop EBS concepts for Advanced Conceptual Design (ACD). Perform feasibility studies. Continue limited integrated testing on interactions of actinide-bearing solutions with rocks under static and flowing conditions. Maintain the Integrated Management Control System, ensuring appropriate QA controls are applied to waste package activities.	Perform rock/water interaction tests using core samples from the repository horizon. Continue hydrothermal code enhancements. Perform hydrologic tests on fractured blocks of tuff to support model validation. Continue limited waste form testing. Continue waste form model development. Develop list of candidate EBS materials for proposed concepts. Continue limited integrated testing on interactions of actinide-bearing solutions with rocks under static and flowing conditions. Review EBS concepts proposed and select two more EBS concepts for ACD. Continue feasibility analysis and initiate more detailed evaluations, including structural, thermal, and nuclear analysis.	Continue rock/water interaction tests using core samples from the repository horizon. Start vadose water extraction using core samples. Continue hydrothermal code enhancements. Continue hydrologic tests on fractured blocks of tuff to support model validation. Continue limited waste form testing. Continue waste form model development. Select EBS materials in support of ACD and develop plans for testing of these materials. Continue integrated testing on interactions of actinide-bearing solutions with rocks under static and flowing conditions. Initiate limited ACD. Develop selected EBS concepts to sufficient detail to allow adequate evaluation for further selection. Perform design reviews.	Continue rock/water interaction tests using core samples from the repository horizon. Continue vadose water extraction using core samples. Start validation of geo-chemical modeling codes. Continue hydrologic tests on fractured blocks of tuff to support model validation. Perform hydrothermal scoping calculations for ESF testing. Prepare test plan for prototype testing of equipment and procedures to be used in the ESF EBS tests. Continue limited waste form testing. Continue waste form model development. Initiate limited testing of EBS materials. Continue integrated testing on interactions of actinide-bearing solutions with rocks under static and flowing conditions. Continue limited ACD. Select and initiate

III. First Repository (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Waste Package (Cont'd)	Integrated Management Control System, ensuring appropriate QA conrols were applied to waste package activities. Continued to apply QA control procedures to all testing and provided QA staff participation in reviews of all documentation associated with waste package. These activities utilized $5,196K of prior-year unobligated funds.	Continue to apply QA control procedures to all testing and provide QA staff participation in reviews of all documentation associated with waste package.			detail design of concepts for prototype fabrication.
	$ 6,833	$ 5,000	$ 6,800	$ 6,800	$ 6,800
Site	Deepened and lengthened the Midway Valley trench. Ongoing geologic, hydrologic, geochemical, and climatological investigations were continued at Yucca Mountain. Completed all study plans for field site characterization activities. Monitoring of climate, seismological, and hydrologic conditions continued. The Sample Management Facility (SMF) continued operations. Volcanism and geochronologic studies continued. Continued development of study plans for field site characterization	Complete trench excavation at Midway Valley. Begin analysis of data retrieved from the Midway Valley Trenching activities. Continue operation of the SMF. Provide geotechnical support to ESF Title II design (site preparation). Focus drilling program to optimize early site suitability evaluation (ESSE) and hydrologic considerations. Drill prototype UZ borehole using the LM-300 drill rig on location south of the potential repository block. Complete drilling programs for the UZ infiltration, small-plot rain fall, and	Continue analysis of data retrieved from the Midway Valley Trenching activity. Continue Quaternary Fault trenching and other trenching studies. Continue non-surface disturbing activities such as field mapping, rain gauge installation and monitoring. Continue monitoring the seismic line, and continue monitoring in the geology, hydrology, climatology and meteorology areas. Continue laboratory analysis of geochemistry and geochronology. Provide geologic and soils engineering support to obtain soil	Continue analysis of data retrieved from the Midway Valley trenching activity. Provide management and integration for field engineering office activities. Provide support for the drilling management of site characterization activities. Prepare and implement QA Program procedures for site activities. Update and maintain surface-based attribute data base and integrate with site atlas mapping capability. Reports will document results of the Bow Ridge, Windy Wash, and Fatigue Wash fault zones. Topogra-	Continue analysis of data retrieved from the Midway Valley trencing activity. Provide management and integration for field engineering office activities. Provide support for overall drilling management of site characterization activities. Prepare and implement QA Program procedures for site activities. Update and maintain the surface-based attribute data base and integrate with site atlas mapping capability. Prepare report summarizing prehistoric flooding at Yucca Mountain. Issue the annual summary

III. First Repository (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Site (Cont'd)	activities. Laboratory analysis, integration and documentation of site data continued in support of the Draft Environmental Impact Statement (DEIS). Revised SCP study plans in response to Nuclear Regulatory (NRC) and Nuclear Waste Technical Review Board (NWTRB) reviews. Continued to develop, implement, and maintain the procedures to ensure that all YMPO actions are conducted in accordance with applicable technical and QA requirements and to ensure that such actions do not compromise the suitability of the site. Included in this were management controls for all site investigation samples (solid, liquid, and gaseous). These activities utilized $4,369K of prior- year unobligated funds.	large-plot rain fall simulation programs. Complete the drilling of a ground-water monitoring well (commitment to the U.S. Park Service). Initiate drilling activities to study percolation in the deep UZ and Yucca Mountain rock characteristics. Complete prerequisites for dry drilling/coring for the FY 1993 UZ program. Complete geochronology investigation of Lathrop Wells and Sleeping Butte volcanic centers. Study and prepare a report on the hydrology of the Amargosa Desert. Continue laboratory testing and analysis of existing core. Initiate preliminary UZ geochemistry experiments. Continue code and model development for site geology, hydrology, and geochemistry. Continue geochemistry laboratory tests and experiments. Continue hydrologic, meteorologic, and climatologic tests and analyses. Continue climate modeling work. Design field investigations for the geochemical, geophysical, and resource potential investigations.	and rock data to support siting and design requirements for surface facilities. Provide drilling support to provide data for the ramp design requirements. One drill rig will be required throughout FY 93 to support ramp design requirements. Additional site characterization drilling program activities include: Drill volcanic holes; drill deep unsaturated zone and/or geologic drill holes to support study of percolation in the unsaturated zone and Yucca Mountain rock characteristics; initiate systematic drilling program; initiate saturated zone drilling program. Place emphasis on studies which support investigations of the unsaturated zone hydrology and steep hydraulic gradient. Emphasize the systematic drilling programs for early site suitability testing. Continue volcanology studies and paleoclimatological studies related to issue resolution. Accelerate gaseous transport and release scenario studies. Continue development of test	phical maps will be issued for the Bullfrog NE and SW, and Beatty SW. A report on preliminary predictions of flooding and debris movement at YM will be prepared. The annual summary report on meteorological monitoring will be issued. Continue collection of down hole data from shallow and deep UZ boreholes. Quaternary Fault trenching and other trenching for geologic studies will be continued. Continue laboratory analysis of geochemistry and geochronology. Provide Title II support for all surface-based field activities. Start water table drilling. Complete shallow UZ drilling program. Continue deep UZ drilling. Initiate systematic drilling program. Borehole logging capability will be maintained. Place emphasis on studies which support investigations of the unsaturated zone hydrology and steep hydraulic gradient. Emphasize the systematic drilling programs for ESSE testing. Continue volcanology studies and paleoclimatological studies related to	report on meteorological monitoring. Complete the final geologic map of Yucca Mountain. Issue preliminary report on the evaluation of UZ modeling. Continue collection of down hole data from shallow and deep UZ boreholes. Continue Quaternary Fault trenching and other trenching for geologic studies will be continued. Continue laboratory analysis of geochemistry and geochronology. Initiate analysis of ESF samples to determine mineralogy and alteration history. Begin support activities for north and south ramp wall mapping and north ramp seismic study. Continue deep UZ drilling. Continue water table drilling. Continue the systematic drilling program. Continue geologic drilling program. Borehole logging capability will be maintained and downhole logging services provided at drillhole locations. Place emphasis on studies which support investigations of the unsaturated zone hydrology and steep hydraulic gradient. Emphasize the

III. First Repository (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Site (Cont'd)			planning packages and job packages to support the site characterization program. Revise SCP study plans as necessary. Continue operation of the Sample Management Facility. Continue code and model development for site, geology, hydrology and geochemistry. Continue climate modeling activities.	issue resolution. Continue gaseous transport and release scenario studies. Based on data from surface-water monitoring network and paleoflood evaluation, a report summarizing modern flooding events will be prepared. Begin efforts to determine the effects of future ground-water withdrawals on the hydologic system at Yucca Mountain. Identify geologic conditions favorable for the formation or concentration of mineral deposits at or near the repository site. Maintain current drilling equipment in support of ongoing drilling programs continuing in FY 95. Revise SCP study plans as necessary. Continue SMF operations and process core from the drilling program and samples from the ESF. Continue development of the conceptual model of ground-water chemistry and experiments to verify and validate the model. Complete simulation of fracture matrix transport coupling, begin studies of geochemical processes that affect transport, and continue de-	systematic drilling programs for early site suitability testing. Continue volcanology studies and paleoclimatological studies related to issue resolution. Continue gaseous transport and release scenario studies. Identify geologic conditions favorable for the formation of mineral deposits at or near the repository site. Complete probability calculation to magmatic disruption of the repository. Laboratory studies and borehole logging will provide a data base for fault and fracture analysis. Begin sorption studies of radionuclides on particulates and colloids. Initiate analysis of ESF samples for micro-organisms. Initiate monitoring of hydrologic conditions at the Analog Recharge Sites to support chemical and water budget models of infiltration. Continue studies of hydrogenic deposits. Maintain current drilling equipment in support of ongoing drilling activities. Revise SCP study plans as necessary. Continue SMF operations and process

III. First Repository (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Site (Cont'd)				velopment, and optimization of transport codes.	core from the ESF ramps. Continue development of the groundwater chemistry model. Precipitation run-off models of Yucca Mountain will synthesize available data to make preliminary predictions of future run-off due to climate change.
	$ 32,561	$ 37,800	$ 57,200	$ 57,200	$ 57,200
Repository	Completed interface activities between repository and the ESF Title II design. Performed Tunnel Boring Machine (TBM) design tests to support ESF Title II design and site characterization testing. Began analyzing completed G-Tunnel prototype experiments. Revised site characterization study plans in response to NRC and NWTRB reviews. Updated the RIB for ESF Title II design. Performed calculations of potential performance impacts and evaluation of interference considerations in support of ESF design. Continued support of ESF Alternatives Study to establish a	Assemble data needed to design the ESF and the Repository and evaluate subsystem design options. Maintain interfaces and prepare interface drawings as needed with surface-based testing (SBT), ESF design, and Waste Package design. Initiate thermal analyses of planned ESF experiments as needed to establish the test space requirements. Continue the rock mechanics direct shear tests. Initiate analyses of potential repository loadings from faults and other geologic conditions using two- and three-dimensional analysis methods. Analyze the thermal and mechanical rock mechanics data to update the RIB and	Maintain interfaces and update interface drawings as needed with SBT, ESF design, and Waste Package design. Continue thermal analyses of planned ESF experiments as needed to establish the test space requirements. Continue the rock mechanics direct shear tests. Continue analyses of potential repository loadings from faults and other geologic conditions using two- and three-dimensional analysis methods. Initiate laboratory tests using drill core from SBT and update the RIB to support ESF Title II design. Continue study plans development. Plan prototype in situ experiments on	Prepare Engineering Plan and Basis for Design documents needed for start of ACD. Continue to develop management and control procedures for ACD. Define engineering studies to evaluate alternative facility configurations. Provide technical support to ESF construction. Maintain interfaces and update interface drawings, as needed, with SBT, ESF design, and Waste Package design. Continue analyses of potential repository loadings from faults and other geologic conditions using two- and three-dimensional analysis methods. Conduct laboratory tests using drill core from SBT.	Continue technical support to ESF construction and plan early construction phase ESF excavation investigation experiments. Initiate limited Repository ACD, including engineering studies to evaluate alternative facility configurations, design of subsurface facilities, including sealing components for repository block openings and EBS systems. Maintain interfaces and update interface drawings, as needed, with SBT, ESF design, and Waste Package design. Continue to develop draft configuration of site preparation and surface and underground facilities. Continue

III. First Repository (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Repository (Cont'd)	preferred ESF configuration and ESF/repository interface. Continued scoping activities to assess current technologies available to emplace sealing components in boreholes and in the underground facility, with emphasis on ESF design and testing support and site suitability. Updated the Repository Design Requirements (RDR) for the ESF Title II with input resulting from the ESF Alternatives Study. Technical support of international activities continued. Continue Phase 3 of the Stripa project agreement. Complete final documentation of the Pocos De Caldas natural analogue project. Cooperative work started for the DOE/AECL subsidiary Agreement No. 2. Activities focused on rock mechanics tests, fluid flow and sorption tests, and code verification. Cooperative work started for the DOE/NAGRA Project Agreement No. 3. Activities focused on fluid flow mechanisms, geophysical, tomography, and	support ESF design. Complete scientific investigations of tunnel boring equipment. Perform system assessments as needed to support repository aspects of ESF and SBT design. Perform calculations of potential performance impacts and interference considerations of the ESF. Prepare manuals for design codes and models and continue code validation. Initiate thermomechanical analyses. Publish sealing strategy document and prepare a draft report on available technology for underground testing and seal emplacement. Prepare study plans for laboratory and field testing of seals. Revise seal degradation model and publish report. Continue technical support of international cooperative work, such as in-situ rock mechanics tests, fluid flow and sorption tests, and total systems code verification with AECL. Complete Stripa Phase 3 activities and issue final reports. Participate in the development and start hydrological, geochemical tests in	simulated rock masses. Prepare design management and control procedures for ACD. Update repository design requirements for ACD. Provide interface design support to EBS concept development and evaluation. Continue thermomechanical analyses. Publish report on available technology for underground testing and seal emplacement. Initiate laboratory testing of the candidate sealing materials. Continue interface design support to EBS concept development and evaluation. Continue technical and management support for AECL Subsidiary No. 2, NAGRA Project Agreement No. 3, and SKB Hard Rock Laboratory Project Agreement No. 1. Complete natural analogue studies with the Alligator River Analogue Program. Initiate the natural analogue program to measure and analyze radionuclide migration, retention, and modeling at the OKLO mine site in Africa.	Continue code verification and validation activities focused on the pretest simulation of rock mechanics experiments. Initiate a series of laboratory tests on the seal materials recommended for use in License Application Design (LAD). Continue technical and management support for ongoing international activities. Participate in seismologic, tomographic, and hydrologic fracture flow development with NAGRA. Participate in radionuclide migration analyses and modeling for the OKLO project in Africa. Participate in international activities which benefit the early site suitability of the Yucca Mountain candidate site.	code verification and validation activities focused on the pretest simulation of rock mechanics experiments. Continue laboratory tests on seal materials recommended for use in LAD. Continue technical and management support for the international cooperative work. Continue to participate in radionuclide migration analyses and modelling for the OKLA project in Africa. Participate in international activities which benefit early site suitability of the Yucca Mountain candidate site.

III. First Repository (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Repository (Cont'd)	fracture flow code development. For the Alligator River Natural Analogue Project, DOE participation commenced and will continue for the next three years. These activities utilized $1,100K of prior-year unobligated funds.	Sweden's Hard Rock Laboratory. Participate in seismologic, tomographic, hydologic fracture flow code development, and geochemical sorption tests with NAGRA. Participate in radionuclide migration analyses on saturated media for the Alligator River Project.			
	$ 10,927	$ 9,729	$ 14,310	$ 14,310	$ 14,310
Regulatory/Institutional	Developed responses to NRC's Site Characterization Analysis (SCA) and implemented a change control system for site characterization activities. Completed two Site Characterization Plan (SCP) progress reports. Continued to respond to external comments on the SCP and completed the State of Nevada SCP comment response document. Developed materials and participated in meetings with the NRC, NWTRB, Advisory Committe on Nuclear Waste (ACNW), and others as requested. Reviewed and approved study plans for ongoing and high-priority	Continue to respond to, and track, commitments resulting from external comments on the SCP and related documents. Support interactions with the NRC, NWTRB, ACNW and similar organizations including planning, review, result analysis, summary development, and open item tracking and response. Continue support of study plan preparation, review, and approval. Increase support to regulatory issue resolution process in coordination with other program participants including development of issue resolution reports and working papers, support of NRC interactions necessary to reach	Continue to respond to, and track, commitments resulting from external comments on the SCP and related documents. Support interactions with NRC, NWTRB, ACNW, and similar organization, including planning, review, result analysis, summary development, and open-item tracking and response. Continue support study plan preparation, review, and approval. Increase support to regulatory issue resolution process emphasizing preparation of documentation based on availability of site characterization data and regulatory interactions necessary to reach closure. Continue	Continue to respond to, and track, commitments resulting from external comments on the SCP and related documents. Support interactions with NRC, NWTRB, ACNW, and similar organizations, including planning, review, result analysis, and summary response. Continue to support study plan preparation, review, and approval. Increase support to regulatory issue resolution based on data availability and concerns that may develop as a result of completion of Title II design, continue preparation of draft SAR sections as data becomes available and is analyzed. Track and	Continue to respond to, and track, commitments resulting from external comments on the SCP and related documents. Support interactions with NRC, NWTRB, ACNW, and similar organizations including planning, review, result analysis, and summary response. Continue to support study plan preparation, review, and approval. Increase support to regulatory issue resolution process. Continue increasing level of effort devoted to regulatory issue resolution based on data availability and concerns that may develop as a result of completion of Title II design. Continue

III. First Repository (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Regulatory/Institutional (Cont'd)	activities. Continued technical support document planning and development of Technical Regulatory Information Management System. Filed all applicable permit applications and completed environmental regulatory compliance requirements, as required by applicable agencies. The hazardous materials management and handling program was implemented. An annual Environmental Protection Implementation Plan, an annual Programmatic Agreement Report, and one Environmental Monitoring and Mitigation Plan (EMMP) Progress Report were prepared. The permit tracking system was maintained. Environmental monitoring continued in air quality, meteorology, radiological, water resources, archaeology, soils, and terrestrial ecosystems. A limited number of pre-activity surveys were conducted, and a limited archaeological data recovery program began. Desert tortoise monitoring studies continued. Limited	early closure and documentation of results, and support of rule-making activities as appropriate. Continue support for development of annotated SAR outline. Provide technical and regulatory reviews of DOE, NRC, EPA, and other documents relative to licensing and regulatory needs. Develop regulatory strategies and support their implementation. Provide, or support, regulatory training program. Support implementation of nuclear regulatory requirement flow-down within the YMP and evaluate compliance. Provide regulatory review support, as required to ESF design and testing program development and conduct. Continue preparation of semiannual progress reports and support change control for site investigation activities, including updates and revisions of regulatory baseline documents e.g. Site Characterization Plan Baseline (SCPB). Continue activities supporting permit application preparation and submittal. Conduct environmental regula-	preparation of draft SAR section based on annotated outline. Provide technical and regulatory review of DOE initiatives. Support rule-making activities, licensing and regulatory needs. Develop regulatory strategies and support their implementation. Provide, or support, regulatory training program. Support implementation of nuclear regulatory requirement flow-down within the YMP and evaluate compliance. Support ESF Title II design. Continue preparation of semi-annual progress reports and support change control for site characterization activities, including updates and revisions of regulatory baseline documents (SCPB). Activities supporting permit application preparation and submittal will continue. Environmental regulatory compliance activities will be conducted in accordance with the ERCP. The ERCP compliance tracking system and the HMMHP will continue to be implemented. A hazardous materials	document status of issue closure initiative. Continue preparation of draft SAR sections based on annotated outline. Provide technical and regulatory reviews of DOE, NRC, EPA, and other documents relative to licensing and regulatory needs. Develop regulatory strategies and support their implementation. Provide, or support, regulatory training program. Support implementation of nuclear regulatory requirement flow-down within the YMP and evaluate compliance. Provide regulatory review support, as required, to ESF design and testing program development and conduct. Continue preparation of semiannual progress reports and to support change control for site characterization activities, including updates and revisions of regulatory baseline documents (SCPB). Activities supporting permit application preparation and submittal will continue. Conduct environmental regulatory compliance	preparation of draft SAR sections as data becomes available and is analyzed. Track and document status of issue closure initiative. Continue preparation of draft SAR sections based on annotated outline. Provide technical and regulatory reviews of DOE, NRC, EPA, and other documents relative to licensing and regulatory needs. Develop regulatory strategies and support their implementation. Provide, or support, regulatory training program. Support implementation of nuclear regulatory requirement flow-down within the YMP and evaluate compliance. Provide regulatory review support, as required, to ESF design and testing program development and conduct. Continue preparation of semiannual progress reports and to support change control for site characterization activities, including updates and revisions of regulatory baseline documents (SCPB). Activities supporting permit application preparation and

III. First Repository (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Regulatory/Institutional (Cont'd)	support was provided to the NWTRB. A YMPO socioeconomic monitoring program was continued, such as development and testing of small-area demographic and economic modeling methods. Payments-Equal-to-Taxes (PETT) program support continued at the YMPO level only. Grant requests from the State of Nevada and local governments were reviewed, and equitable grant awards were made. Socioeconomic profiles were updated, and support to the radiological studies program was provided. Operation of information offices in Beatty and Las Vegas continued. Six YMP update meetings were supported, presentations and exhibit showings were given. Support was provided to other YMPO interactions with the State of Nevada and affected local governments. A speaker's bureau was continued. Feasibility analysis, conceptual design, and cost analysis were completed for first	tory compliance activities in accordance with the Environmental Regulatory Compliance Plan (ERCP). Continue implementation of the ERCP compliance tracking system and the Hazardous Materials Management and Handling Program (HMMHP). Review internal requests for site characterization activities for compliance with the Environmental Monitoring and Mitigation Plan (EMMP). Update EMMP as required. Prepare semiannual EMMP Progress Reports. Monitor compliance with reclamation requirements, and conduct on-site audits of reclamation compliance. Continue implementation of field activities in the following technical areas: air quality, meteorology, archeology, radiological studies, terrestrial ecosystems, reclamation, and water resources. Conduct archaeological, terrestrial ecosystem, and radiological preactivity survey commensurate with surface-disturbing and site preparation activities. Continue water level and spring	storage facility will be implemented. Requests for site characterization activities will be reviewed for compliance requirements. Compliance with reclamation requirements will be monitored, and on-site audits of reclamation compliance will be conducted. Oversight and surveillance activities will continue as site characterization activities progress. Implementation of the field activities in the following technical areas will continue: air quality, meteorology, archeology, radiological studies, soils, terrestrial ecosystems, reclamation, and water resources. Conduct archaeological, terrestrial ecosystem, and radiological preactivity surveys commensurate with surface-disturbing and site preparation activities. Water level and spring flow monitoring activities will continue, as well as preparation of data reports; implementation of water monitoring plans, and development of conceptual models.	activities in accordance with the ERCP. The ERCP compliance tracking system and the HMMHP will continue to be implemented. Continue management and operation of hazardous materials storage facility. Requests for site characterization activities will be reviewed for compliance requirements. Compliance with reclamation requirements will be monitored, and on-site audits of reclamation compliance will be conducted. Oversight and surveillance activities will continue as site characterization activities progress. Continue implementation of field activities in the following technical areas: air quality, meteorology, archaeology, radiological studies, soils, terrestrial ecosystems, reclamation, and water resources. Conduct archaeological and terrestrial ecosystem, and radiological preactivity surveys commensurate with surface-disturbing and site preparation	submittal will continue. Conduct environmental regulatory compliance activities in accordance with the ERCP. The ERCP compliance tracking system and the HMMHP will continue to be implemented. Continue management and operation of hazardous materials storage facility. Requests for site characterization activities will be reviewed for compliance requirements. Compliance with reclamation requirements will be monitored, and on-site audits of reclamation compliance will be conducted. Oversight and surveillance activities will continue as site characterization activities progress. Continue implementation of field activities in the following technical areas: air quality, meteorology, archaeology, radiological studies, soils, terrestrial ecosystems, reclamation, and water resources. Conduct archaeological, terrestrial ecosystem, and radiological

III. First Repository (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Regulatory/Institutional (Cont'd)	alternative rail spur access route. Participation by local governments was facilitated in rail access development through outreach programs. These activities utilized $5,813K of prior-year unobligated funds.	flow monitoring activities, as well as preparation of data reports; implementation of water monitoring plans, and development of conceptual models. Update planning documents relative to these activities as necessary, i.e.: Meteorological Monitoring Plan; Radiological Monitoring Plan; Environmental Field Activities Plans for Air Quality, Cultural Resources (Archaeology and Native American components), Soils, Terrestrial Ecosystems, and Water Resources; Reclamation Implementation Plan; and Reclamation Feasibility Plan. Implement monitoring requirements of the following documents: Research Design and Data Recovery Plan (addressing commitments in the area of desert tortoise study/ research, protection, and impact mitigation), National Park Service Water Monitoring Plan (addressing water quantity monitoring), and U.S. Fish and Wildlife biological opinion. Develop topical and data reports as required. Continue interactions with	Planning documents relative to these activities will be maintained and updated as necessary: Meteorological Monitoring Plan; Radiological Monitoring Plan; Environmental Field Activities Plans for Air Quality, Cultural Resources (Archaeology and Native American components), Soils, Terrestrial Ecosystems, and Water Resources; Reclamation Implementation Plan; and Reclamation Feasibility Plan. Continue monitoring requirements of the following documents: Research Design and Data Recovery Plan (addressing commitments in the area of desert tortoise study/research, protection, and impact mitigation), National Park Service Water Monitoring Plan (addressing water quantity monitoring), and U.S. Fish and Wildlife biological opinion. Topical and data reports will be generated as required. Interactions with Native American groups will be maintained through the Official Tribal Contact	activities. Continue water level and spring flow monitoring activities, as well as preparation of data reports; and implementation of water monitoring plans. Maintain and update planning documents relative to these activities as necessary, i.e. Meteorological Monitoring Plan; Radiological Monitoring Plan; Environmental Field Activities Plans for Air Quality, Cultural Resources (Archaeology and Native American components), Soils, Terrestrial Ecosystems, and Water Resources; Reclamation Implementation Plan; and Reclamation Feasibility Plan. Continue implementation of monitoring requirements of the following documents: Research Design and Data Recovery Plan (addressing commitments in area of desert tortoise study/ research, protection, and impact mitigation), National Park Service Water Monitoring Plan (addressing water quantity monitoring), and U.S. Fish and Wildlife biological opinion. Develop	preactivity surveys commensurate with surface-disturbing and site preparation activities. Continue water level and spring flow monitoring activities, as well as preparation of data reports; implementation of water monitoring plans. Maintain and update planning documents relative to these activities as necessary, i.e. Meteorological Monitoring Plan; Radiological Monitoring Plan; Environmental Field Activities Plans for Air Quality, Cultural Resources (Archaeology and Native American components), Soils, Terrestrial Ecosystems, and Water Resources; Reclamation Implementation Plan; and Reclamation Feasibility Plan. Continue implementation of monitoring requirements of the following documents: Research Design and Data Recovery Plan (addressing commitments in the area of desert tortoise study/ research, protection, and impact mitigation), National Park Service Water Monitoring Plan (addressing water

III. First Repository (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Regulatory/Institutional (Cont'd)		Native American groups through the Official Tribal Contact Representatives, including conduct of site visits. Continue coordination support of all environmental field activities. Provide support, as required, for presentations to the NWTRB, site tours, and other external interactions. Process and enter data collected into the RIB and other YMP data bases. Implement YMP socio-economic program. Develop, maintain, and implement a socio-economic plan which addresses the acquisition of data, identification of potential effects, and development of strategies to mitigate adverse impacts. Acquire, analyze, and report socioeconomic moniroring data concerning YMP-related effects on the region and the communities that may be affected by development of a repository. Prepare monitoring reports. Develop and maintain socioeconomic profiles that report data concerning the socioeconomic	Representatives, including conduct of site visits. Support will be provided as required for presentations to the NWTRB, site tours, and other external interactions. All monitoring programs will be expanded commensurate with expanding surface-disturbing and site characterization activities. Initiate monitoring programs for support to ESF site preparation, an additional LM-300 drill rig and electric power requirements. No funding for transportation related tasks this fiscal year. Implement the socioeconomic program for the YMP. Develop, maintain, and implement a socioeconomic plan for the acquisition of data, identification of potential effects, and development of mitigation strategies. Acquire, analyze, and report socioeconomic monitoring data concerning YMP-related effects on the region and the affected communities. Develop and maintain	topical and data reports as required. Continue interactions with Native American groups through the Official Tribal Contact Representatives, including conduct of site visits. Support will be provided as required for presentations to the NWTRB, site tours, and other external interactions. All monitoring programs will be expanded commensurate with expanding surface-disturbing and site characterization activities. Expand monitoring support to ESF site preparation activities, and additional LM-300 drill rig and electrical power requirements. Technical program will be initiated in the area of noise, including EFAP development. No funding for transportation related tasks this fiscal year. Implement socioeconomic program for the YMP. Develop, maintain, and implement a socio-economic plan for the acquisition of data, identification of	quantity monitoring), and U.S. Fish and Wildlife biological opinion. Develop topical and data reports as required. Continue interactions with Native American groups through the Official Tribal Contact Representatives, including conduct of site visits. Provide support as required for presentations to the NWTRB, site tours, and other external interactions. Expand all monitoring programs commensurate with scope of surface-disturbing and site characterization activities. Continue monitoring support to ESF site activities, drill rigs and electrical power requirements. Technical programs will be initiated in the areas of aesthetics and land use/resource lands. No funding for transportation related tasks this fiscal year. Implement the socioeconomic program for the YMP. Develop, maintain, and implement a socioeconomic plan for the acquisition of

III. First Repository (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Regulatory/Institutional (Cont'd)		characteristics of the Southern Nevada region and the communities surrounding Yucca Mountain. Support formal and informal interactions with all levels of government, external groups, and officials concerning the socioeconomic program. Support the radiological monitoring program by developing and implementing a plan to acquire and analyze detailed socioeconomic data on population density and distribution, agricultural characteristics, and cultural characteristics in the area surrounding Yucca Mountain. Continue operation of Information Offices in Beatty and Las Vegas. Support six YMP update meetings. Continue Speaker's Bureau activities, Yucca Mountain tours, and exhibit showings. Provide support to YMPO interactions with the State of Nevada, public interest groups, the Nevada business community, and government agencies. Further implement Rural Outreach Program to expand interactions with "affected" counties. Continue sup-	socioeconomic data profiles concerning the socioeconomic characteristics of the Southern Nevada region and the communities surrounding Yucca Mountain. Develop and maintain a program to acquire, analyze, and report information necessary to address PETT requirements. Support formal and informal interactions with all levels of government, external groups, and officials concerning the socioeconomic program. Support the radiological monitoring program implementing a plan to acquire and analyze the detailed socioeconomic data in the areas of population density and distribution, agricultural and cultural characteristics , in the area surrounding Yucca Mountain. Operation of Information Offices in Beatty, Las Vegas, and Pahrump will continue. Support six YMP update meetings. Continue speaker's bureau activities, Yucca Mountain tours, and exhibit showings. Support YMPO interactions with the State	potential effects, and development of mitigation strategies. Acquire, analyze, and report socioeconomic monitoring data concerning YMP-related effects on the region and the affected communities. Develop and maintain socioeconomic data profiles concerning the socioeconomic characteristics of the southern Nevada region and the communities surrounding Yucca Mountain. Develop and maintain a program to acquire, analyze, and report information necessary to address PETT requirements. Support formal and informal interactions with all levels of government, external groups, and officials concerning the socioeconomic program. Support the radiological monitoring program implementing a plan to acquire and analyze the detailed socioeconomic data on population density and distribution, agricultural and cultural characteristics, in the area surrounding Yucca Mountain. Continue operation of	data, identification of potential effects, and development of mitigation strategies. Acquire, analyze, and report socioeconomic monitoring data concerning YMP-related effects on the region and the affected communities. Develop and maintain socioeconomic data profiles concerning the socioeconomic characteristics of the southern Nevada region and the communities surrounding Yucca Mountain. Develop and maintain a program to acquire, analyze, and report information necessary to address PETT requirements. Support formal and informal interactions with all levels of government, external groups, and officials concerning the socioeconomic program. Support the radiological monitoring program implementing a plan to acquire and analyze detailed socioeconomic data on population density and distribution, agricultural and cultural characteristics in the area surrounding Yucca Mountain.

III. First Repository (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Regulatory/Institutional (Cont'd)		port to DOE/HQ interactions and develop educational materials and programs at a minimal level. Open a Pahrump Information Office and develop or upupdate various publications, models, and exhibits as needed.	of Nevada, public interest groups, the Nevada business community, and government agencies. The Rural Outreach Program will also continue on a limited basis to maintain interactions with "affected" counties. Support to DOE/HQ interactions will continue and various publications, models, and exhibits will be developed or updated as needed. Limited educational programming enhancements will be supported and emphasis will be placed on enhancing tour formats, materials, and frequency based upon start of ESF activities.	Information Offices in Beatty, Las Vegas, and Pahrump. Six YMP update meetings will be supported. Continue Speaker's Bureau activities, Yucca Mountain tours, the Educational Program, and exhibit showings. Support YMPO interactions with the State of Nevada, public interest groups, Nevada business community, and government agencies. The Rural Outreach Program will also continue on a limited basis to maintain interactions with "affected" counties. Continue support to DOE/HQ interactions and develop or update various publications, models, and exhibits as needed. Limited educational programming enhancements will be supported and emphasis will be placed on enhancing tour formats, materials, and frequency based upon start of ESF activities.	Continue operation of Information Offices in Beatty, Las Vegas, and Pahrump. Support six YMP update meetings. Continue speaker's Bureau activities, Yucca Mountain tours, Educational Program, and exhibit showings. Support YMPO interactions with the State of Nevada, public interest groups, Nevada business community, and government agencies. The Rural Outreach Program will also continue on a limited basis to maintain interactions with "affected" counties. Support to DOE/HQ interactions will continue and various publications, models, and exhibits will be developed as needed. When possible, additional emphasis will be given to all areas due to start of ESF activities resulting in greater media, political, and public interest and demand.
	$ 18,199	$ 21,775	$ 22,000	$ 22,000	$ 22,000

III. First Repository (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Exploratory Studies Facility	This activity budgeted under Exploratory Shaft for FY 1991.	This activity budgeted under Exploratory Shaft for FY 1992.	Complete Title II design for first access buildings and surface facilities. Initiate and complete Title II design for first and second access portals. Initiate Title II design for first access ramp. Initiate and complete Title II design for second access site preparation and buildings and surface facilities. Perform Title III design activities to support construction. Recommence IDS total systems design and initiate Title II design. Start site preparation and surface facilities construction at first access. Prepare RFP and procure an underground construction contractor. Initiate procurement activities for continuous mining equipment. Provide safety and health training for surface and underground construction activities.	Complete Title II design for first access portal and continue Title II design for first access ramp. Initiate Title II design for second access ramp. Initiate Title II design for subsurface excavations including exploratory drifts and core test area. Perform Title III design activities to support construction. Continue IDS Title II design. Continue procurement activities for continuous mining equipment. Complete site preparation and surface facilities construction, and start portal construction at first access. Start site preparation activities at second access. Provide safety and health training for surface and underground construction.	Continue Title II design for first access ramp. Continue Title II design for second access ramp. Continue Title II design for subsurface excavations including exploratory drifts and core test area. Initiate Title II design for optional access. Perform Title III design activities to support construction. Continue IDS Title II design and commence procurement activities for IDS equipment. Continue procurement activities for continuous mining equipment. Complete portal construction and start development of first 200 ft. of ramp for first access. Complete site preparation, start and complete surface facilities construction, and start portal construction of second access. Provide safety and health training for surface and underground construction. Provide construction support for underground testing.
	$ 0	$ 0	$ 35,000	$ 35,000	$ 35,000

III. First Repository (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Exploratory Shaft	Completed the ESF Alternatives Study (ESAS) and provided an early report on the "Findings of the ESF Alternatives Study." Completed the transition of the Nevada Test Site (NTS) selected A/E. Performed a design study, conducted tradeoff studies, prepared new general arrangement drawings, and modified the existing Title I Design Summary Report, utilizing information derived from the ESAS, in order to provide input to support a final decision on ESF configuration prior to resumption of Title II design. Issued the Office of Geologic Disposal (OGD) ESF Requirements Document (ESFRD) as a controlled document for use in the design study. Developed Integrated Data Systems (IDS) design schedules, design criteria, and fabrication data for early IDS procurements. Made a presentation to the Energy Systems Acquisition Advisory Board (ESAAB) for approval of cost and schedule baselines for resumption of Title II design, and long-lead procurements. Completed	Complete Title II design for site preparation activities for the north and south ramp portals including access roads, construction pads, topsoil pad, drainage systems, surface utilities, and communication systems. Commence Title II design for ramp portals, buildings, and surface facilities at the north and south ramps. Commence site preparation construction activities with earth and rock excavations, cut/fill, compact, and grade to provide access roads and construction pads for the north and south ramp portals. Perform a soil and rock study to verify design parameters. Initiate procurement of long-lead equipment for tunnel boring machines (TBMs). Complete IDS total system design and commence IDS Title II design.	For FY 1993 and beyond, this activity is bud-budgeted under Exploratory Studies Facility.		

III. First Repository (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Exploratory Shaft (Cont'd)	and published the final ESAS report. These activities utilized $2,681K of prior- year unobligated funds.				
	$ 9,944	$ 7,000	$ 0	$ 0	$ 0
Test Facilities	Initiated master planning for the test facilities infrastructure. Completed design for the construction of the fire protection upgrade in Building 4015, the electrical service in Building 4215, and the upgrade at the Area 25 waterline loop. Completed the design of the radio network. Conducted Power Availability Study at the NTS and developed a conceptual design of the NTS power distribution system that meets the site characterization infrastructure needs. Provided management, administrative, and logistic services support for the Field Operations Center and preparation for the resumption of Title II design and the expansion of services upon receipt of permits. Provided operations and maintenance services for Area 25's 85 sq. miles and 10	Continue master planning. Complete procurement of the communications network. Produce Conceptual Design Report of Power System Upgrades to support the Area 25 requirements and the ESF. Staff Yucca Mountain Field Operations Center for the ramp-up in surface-based testing. Provide administrative services, including General Employee Training, and Health and Safety Programs in preparation for site characterization activities. Provide operations and maintenance services for Area 25's 90 square miles and 10 buildings. Continue interface with NTS relative to shared facilities. Continue support of Yucca Mountain Public Outreach Tours.	Start and complete Title I and start Title II design of Power System Upgrades, and initiate procurement of long lead items for the power system. Start construction of on-site Power Upgrades. Start procurement of the aggregate plant and concrete batch plant to support ongoing Surface Based Testing and ESF construction activities. Support the Site Manager in administering the Site Characterization activities. Provide administrative services including General Employee Training, and Health and Safety Programs for Site Characterization activities. Provide operations and maintenance services for Area 25's 90 square miles and 10 buildings. Continue interface with NTS relative to shared	Complete design of on-site Power Upgrades and initiate design and land acquisition for new Off-site Power Line. Continue procurement for on-site Power Upgrades and initiate procurements for new Off-site Power Line. Continue construction of on-site Power Upgrades and start Off-site Power Line construction. Continue operation of the aggregate and concrete batch plants. Initiate design and construction of Area 25 General Support Facilities and Roads. Support the Site Manager administratively during Site Characterization activities, and continue administrative services and training. Continue operation and maintenance services and support of tours.	Complete design of Off-site Power Line, and procurement of off-site power construction materials, and continue construction of Off-site Power Line. Complete construction of on-site Power Upgrades. Continue design and construction of Area 25 General Support Facilities and roads, and operation at aggregate and batch plants. Continue supporting the Site Manager in administrative procedures for Site Characterization activities, continue administrative services, training and tour support.

III. First Repository (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Test Facilities (Cont'd)	buildings. These activities utilized $2,354K of prior-year unobligated funds.		facilities. Continue support of Yucca Mountain Public Outreach Tours.		
	$ 3,223	$ 6,000	$ 15,000	$ 15,000	$ 15,000
Project Management	Continued to perform project management and control functions, including project planning, budgeting, financial analysis, and cost and schedule control; developed and issued progress reports. Continued development of the Project-level Planning and Control System (PACS). Provided administrative support, including training, legal services, procurement, subcontract administration, security, publications, graphics, facilities, and equipment operations and maintenance. Conducted information resources management activities involving computer hardware and software systems, telecommunications, data management, and records management. Continued development and implementation of the QA program to satisfy DOE and NRC QA requirements. Developed, revised, and maintained QA plans and	Continue to perform project management and control functions, including project planning, budgeting, financial analysis, and cost and schedule control; prepare and issue progress reports. Conduct management assessments, attend meetings, and make presentations. Maintain operation of the Project-level PACS with participant data. Continue limited development and operation of the participants' internal cost/schedule control systems that provide data to the Project-level PACS. Provide for cost/schedule performance measurement analysis and reporting. Provide essential administrative support services, including training, legal services, procurement, subcontract administration, security, publications, graphics, facilities and equipment operations and maintenance.	Continue to maintain infrastructure work scope, such as facilities management, rent, telephones, security services, and office equipment rental and leases. Perform Technical Project Office (TPO) management, YMP management, and QA. YMP training coordination and control will continue, and will focus on training for field operations center quality related tasks. Administrative services, such as procurement, contract management, personnel, and legal services will be provided. Information Resources Management (IRM) will be enhanced to support field operations. Support services, such as printing, graphics, reproduction, publication services, word processing, editing, technical writing, photo services, mail distribution, and clerical support will continue	Continue to maintain infrastructure work scope, such as facilities management, rent, telephones, security services, and office equipment rental and leases. Perform Technical Project Office (TPO) management, YMP management, and QA. YMP training coordination and control will continue, and will focus on training for field operations center quality related tasks. Administrative services, such as procurement, contract management, personnel, and legal services will be provided. Information Resources Management (IRM) will be enhanced to support field operations. Support services, such as printing, graphics, reproduction, publication services, word processing, editing, technical writing, photo services, mail distribution, and clerical support will	Continue to maintain infrastructure work scope, such as facilities management, rent, telephones, security services, and office equipment rental and leases. Perform Technical Project Office (TPO) management, YMP management, and QA. YMP training coordination and control will continue, and will focus on training for field operations center quality related tasks. Administrative services, such as procurement, contract management, personnel, and legal services will be provided. Motorpool services will be streamlined and funded to support YMP activities. Information Resources Management (IRM) will be enhanced to support field operations. Support services, such as printing, graphics, reproduction, publication services, word processing, editing,

III. First Repository (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Project Management (Cont'd)	procedures. Performed QA audits and surveillances to ensure technical programs are being conducted in compliance with DOE requirements and Federal regulations. Continued review of plans, procedures, drawings, specifications, and other deliverables to ensure QA requirements were satisfied. Began development of the required quality concerns program. These activities utilized $12,684K of prior-year unobligated funds.	Continue to support QA-related training. Conduct information resources management activities involving computer hardware and software systems, telecommunications, data management, and records management. Continue software development, and the wide area network communication link between the YMPO and DOE/HQ. Expand records management functions to support new field activities. Initiate plans to implement a local records and document control center at the Yucca Mountain Site Office. Continue development and implementation of the QA program to satisfy DOE and NRC QA requirements. Develop, revise, and maintain QA plans and procedures as necessary. Perform QA audits and surveillances to ensure technical programs are being conducted in compliance with DOE requirements and Federal regulations. Continue review of plans, procedures, drawings, specifications, and other documents to ensure QA requirements are satisfied. Continue develop-	to be funded. Records management activities to support Local Records Center operations, microfilming, Document Control Center operations, Central Records Facility operations, and record management training activities will be consolidated. Computer system enhancements and software development will continue to support project requirements. Expansion of the wide area network communications link will continue. Operate, maintain, and enhance the Project-level Planning and Control Systems (PACS). Complete implementation of participant-level cost/schedule control systems that provide data to the Project-level PACS. Continue to perform project management and control functions, including project planning, budgeting, financial analysis, cost/schedule control, and progress reporting. Continue development and implementation of the QA program to satisfy DOE and NRC QA requirements. Develop, revise, and maintain QA plans and procedures. Perform QA audits and surveil-	continue to be funded. Records management activities to support Local Records Center operations, microfilming, Document Control Center operations, Central Records Facility operations, and record management training activities will be consolidated. Computer system enhancements and software development will continue to support project requirements. Expansion of the wide area network communications link will continue. Operate, maintain, and enhance the Project-level Planning and Control Systems (PACS). Complete implementation of participant-level cost/schedule control systems that provide data to the Project-level PACS. Continue to perform project management and control functions, including project planning, budgeting, financial analysis, cost/schedule control, and progress reporting. Continue development and implementation of the QA program to satisfy DOE and NRC QA requirements. Develop, revise, and maintain QA plans and procedures. Perform	technical writing, photo services, mail distribution, and clerical support will continue to be funded. Records management activities to support Local Records Center operations, microfilming, Document Control Center operations, Central Records Facility operations, and record management training activities will be consolidated. Computer system enhancements and software development will continue to support project requirements. Expansion of the wide area network communications link will continue. Operate, maintain, and enhance the Project-level Planning and Control Systems (PACS). Complete implementation of participant-level cost/schedule control systems that provide data to the Project-level PACS. Continue to perform project management and control functions, including project planning, budgeting, financial analysis, cost/schedule control, and progress reporting. Continue development and implementation of the QA program to satisfy

III. First Repository (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Project Management (Cont'd)		ment of the required quality concerns program.	lances to ensure technical programs such as ESF construction and surface drilling are being conducted in compliance with DOE requirements and Federal regulations. Continue review of plans, procedures, drawings, specifications, and other deliverables to ensure QA requirements are satisfied. The QA program will be maintained at its high level of activity with regards to audits and surveillances. Additional procedures will be prepared and implemented as required. The QA program should meet all NRC requirements and expectations.	QA audits and surveillances to ensure technical programs such as ESF construction and surface drilling are being conducted in compliance with DOE requirements and Federal regulations. Continue review of plans, procedures, drawings, specifications, and other deliverables to ensure QA requirements are satisfied. The QA program will be maintained at its high level of activity with regards to audits and surveillances. Additional procedures will be prepared and implemented as required. The QA program should meet all NRC requirements and expectations.	DOE and NRC QA requirements. Develop, revise, and maintain QA plans and procedures. Perform QA audits and surveillances to ensure technical programs such as ESF construction and surface drilling are being conducted in compliance with DOE requirements and Federal regulations. Continue review of plans, procedures, drawings, specifications, and other deliverables to ensure QA requirements are satisfied. The QA program will be maintained at its high level of activity with regards to audits and surveillances. Additional procedures will be prepared and implmented as required. The QA program should meet all NRC requirements and expectations.
	$ 40,980	$ 47,146	$ 54,000	$ 54,000	$ 54,000

III. First Repository (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Financial and Technical Assistance	Continued PETT in accordance with the NWPA, as amended. No funds were requested for the Benefits Agreements Program. Continued grants to the State of Nevada in accordance with the NWPA, as amended and the guidance provided by Congress in the FY 1991 Appropriations Act. Continued grants to local governments in accordance with the NWPA, as amended and the guidance provided by the Congress in the FY 1991 Appropriations Act. These activities utilized $4,994K of prior-year unobligated funds.	Provide direct payments to the State of Nevada and affected local governments in accordance with Nuclear Waste Policy Act of 1982 (NWPA), as amended, for document review/monitoring, information transfer, and commenting on statutory documents, impact mitigation assistance, and technical assistance as requested. Continue PETT in accordance with NWPA, as amended. Provide funding to the University of Nevada system for scientific studies in support of the YMP.	Provide direct payments to the State of Nevada and affected local governments in accordance with NWPA, as amended, for document review/monitoring, information transfer, and commenting on statutory documents, impact, mitigation assistance in accordance with NWPA, as amended, and technical assistance as requested in accordance with NWPA, as amended. Continue PETT in accordance with NWPA, as amended. Provide funding to the University of Nevada system for scientific studies in support of the YMP. Provide impact assistance to affected local governments and provide funding to allow for development of potential benefits agreement.	Provide direct payments to the State of Nevada and affected local governments in accordance with NWPA, as amended, for document review/monitoring, information transfer, and commenting on statutory documents, impact, mitigation assistance in accordance with NWPA, as amended, and technical assistance as requested in accordance with NWPA, as amended. Provisions of PETT in accordance with NWPA, as amended. Provide funding to the University of Nevada system for scientific studies in support of the YMP. Provide impact assistance to affected local governments and provide funding to allow for development of potential benefits agreement.	Provide direct payments to the State of Nevada and affected local governments in accordance with NWPA, as amended, for document review/monitoring, information transfer, and commenting on statutory documents, impact, mitigation assistance in accordance with NWPA, as amended, and technical assistance as requested in accordance with NWPA, as amended. Provisions of PETT in accordance with NWPA, as amended. Provide funding to the University of Nevada system for scientific studies in support of the YMP. Provide impact assistance to affected local governments and provide funding to allow for development of potential benefits agreement.
	$ 15,732	$ 12,500	$ 20,000	$ 20,000	$ 20,000
First Repository	$ 155,180	$ 165,550	$ 248,310	$ 248,310	$ 248,310

DEPARTMENT OF ENERGY
FY 1993 CONGRESSIONAL BUDGET REQUEST
OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT
NUCLEAR WASTE FUND
(dollars in thousands)

KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

First Repository

IV. A. Not applicable

IV. B. Construction Project Descriptive Summary

1. Project title and location:

Exploratory Studies Facility
at Yucca Mountain, Nye County,
Nevada

Project TEC: $441,429
Start Date: 1st QTR FY 1993
Completion Date: 2nd QTR FY 1998

2. Financial schedule:

Fiscal Year	Appropriation	Obligations	Costs
1989	$ 22,691	$ 27,584	$ 21,013
1990	10,696	5,599	12,507
1991	9,944	12,235	13,708
1992	7,000	7,000	7,228
1993	35,000	35,000	33,889

3. Narrative:

(a) The Nuclear Waste Policy Amendments Act of 1987, Title V Public Law 100-203, selected the tuff site at Yucca Mountain, Nevada for detailed characterization to evaluate site suitability for the construction of the nation's first high-level waste repository.

The Exploratory Studies Facility will consist of two 25-foot inside diameter sloping ramps to the Topopah Spring Level (TSL), with side ramps 18 feet inside diameter continuing down to the Calico Hills Level (CHL), constructed by tunnel boring machines (TBM). When completed, the ramps will be capable of transporting personnel and materials to the test and potential repository horizons. The underground lateral drifts will include service and core test areas and exploratory drifts which will allow for a wide range of in-situ geologic, geochemical, geomechanical, hydrologic, and thermal tests in the geologic horizon.

(b) The primary objective of this project is to collect and analyze data to be used in determining the suitability of the Yucca Mountain candidate site for the construction of a potential high-level radioactive waste repository. Construction, as defined in the Exploratory Studies Facility Design Requirements Document, will: (1) provide access to selected underground tuff horizons and surrounding strata in an unsaturated zone and perform in-situ testing in the selected horizons at the Yucca Mountain candidate site, and (2) provide the ability to safely and effectively acquire the necessary data for design of a potential repository, performance assessment, and license application.

The Exploratory Studies (ES) program will contribute to the scientific investigations through extensive in-situ testing. This testing will assess the geologic characteristics and characteristic variables; assess the hydrologic properties to aid in evaluation of the isolation capability of the candidate tuff horizon; and determine that the stability of openings can be maintained throughout the operational life of the potential repository without adversely affecting isolation capability or retrievability. At the conclusion of the ES program, and through the use of data obtained in other Yucca Mountain site investigation activities, data will be available to assess the suitability of the tuff on the site for use as a nuclear waste repository.

(c) The budget authority level requested for FY 1993 will provide for equipment procurements; start and completion of the north area site preparation activities and the construction of the north area portal; installation of the primary surface utilities and communications for the north area; completion of the north area Title II design for the buildings and surface facilities and start of south area Title II design for the buildings and surface facilities; and start of Title II design for the north and south area ramp excavations.

4. Total Project Funding (BA):

	Prior Years	FY 1991	FY 1992	FY 1993 Request	To Completion
Construction	0	0	0	0	0
Capital Equipment	8,221	0	400	300	133,080
Operating Expenses	89,953	9,944	6,600	34,700	451,522

DEPARTMENT OF ENERGY
FY 1993 CONGRESSIONAL BUDGET REQUEST
NUCLEAR WASTE FUND
(dollars in thousands)

KEY ACTIVITY SUMMARY

NUCLEAR WASTE FUND

I. Preface: Monitored Retrievable Storage

Monitored Retrievable Storage

This activity supports the siting, design, construction, licensing through the Nuclear Regulatory Commission (NRC), and operation of a facility to perform spent nuclear fuel receipt, handling and storage, as necessary, prior to emplacement in a geologic repository. In order to ensure that all aspects of the work are conducted effectively and efficiently and that NRC regulatory requirements for licensing are met, a comprehensive quality assurance program will be implemented and maintained. The MRS facility will provide the Federal Waste Management System with the capability to start spent fuel acceptance. In accordance with the National Energy Strategy (NES), the Office of Civilian Radioactive Waste Management (OCRWM) is seeking legislation to secure modification of the Nuclear Waste Policy Amendments Act (NWPAA) linkages between the MRS and the repository schedules. The MRS budget request is based on the assumption that the facility is de-linked from the repository schedule through enactment by the Congress of the legislative initiative or through a negotiated agreement with a host State or Indian Tribe that is subsequently approved by Congress.

Engineering Development

The Engineering Development portion of the MRS activity was grouped with the Transportation activity in FY 1991-92. This activity develops and demonstrates crosscutting technologies required by OCRWM. These technologies include: 1) a process to consolidate spent nuclear fuel assemblies on a production line basis; 2) development of alternative dry storage technologies; 3) development of technologies for automated remote handling of spent nuclear fuel; 4) development of technologies and processes to comply with international nuclear material safeguards requirements, and 5) development of processes and equipment to be used in the decontamination and decommissioning of OCRWM facilities. OCRWM believes that continued support of existing engineering development activities is beneficial; however, upon completion of these activities, the engineering development program is expected to be phased out. The removal of spent fuel from West Valley, NY, to the MRS and the immediate removal of the non-fuel components from the INEL TAN Hot Shop pool will significantly reduce long-term storage costs. The Engineering Development budget request is based on the assumption that the spent fuel will be removed from West Valley, however; options for long-term storage at West Valley will be studied. The non-fuel components from the INEL TAN Hot Shop pool will be removed to dry storage at INEL. Phase IV, a hot demonstration of the prototypical consolidation development program (PCDP), if approved, will be delayed until 1994.

II. A. Summary Table: Monitored Retrievable Storage

Program Activity	FY 1991 Enacted	FY 1992 Enacted	FY 1993 Request	% Change	FY 1994 Request	FY 1995 Request
Project Management	$ 1,850	$ 2,000	$ 0	-100	$ 0	$ 0
Licensing	1,000	700	0	-100	0	0
Systems Support	1,097	0	0	0	0	0
Environmental	200	1,700	0	-100	0	0
Design and Engineering Studies	3,300	10,525	0	-100	0	0
Siting	200	1,000	0	-100	0	0
Regulatory	300	300	0	-100	0	0
Monitored Retrievable Storage						
Project Management	0	0	3,190	>999	3,800	3,950
Licensing	0	0	2,252	>999	2,400	2,500
Systems Support	0	0	5,000	>999	5,000	5,000
Environmental	0	0	1,642	>999	2,100	2,300
Design and Engineering Studies	0	0	18,579	>999	21,230	21,230
Siting	0	0	6,857	>999	3,000	2,500
Regulatory	0	0	610	>999	600	650
Subtotal, Monitored Retrievable Storage	$ 0	$ 0	$ 38,130	>999	$ 38,130	$ 38,130
Engineering Development						
Prototypic Consolidation Development Program	$ 0	$ 0	$ 390	>999	$ 0	$ 0
Non-Fuel-Bearing Components	0	0	0	0	0	0
Concrete Cask Testing Project	0	0	0	0	0	0
Canister Welding	0	0	0	0	0	865
Dry Rod Consolidation Technology	0	0	880	>999	1,100	0
Spent Fuel Transportation and Storage	0	0	1,343	>999	1,513	1,748
Subtotal, Engineering Development	$ 0	$ 0	$ 2,613	>999	$ 2,613	$ 2,613
Total, Monitored Retrievable Storage	$ 7,947	$ 16,225	$ 40,743	+151	$ 40,743	$ 40,743

II. B. Major Laboratory and Facility Funding

Idaho National Engineering Laboratory - EG&G	$ 0	$ 0	$ 0	0	$ 0	$ 0
DOE Field Office, Idaho	$ 0	$ 0	$ 0	0	$ 0	$ 0
Pacific Northwest Laboratory	$ 340	$ 0	$ 0	0	$ 0	$ 0

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Monitored Retrievable Storage					
Project Management	Initiated project management activities and coordinated the planning of functional areas and disciplines. Prepared Project Plan and Project Management Plan. Managed quality assurance program, developed MRS-specific plans and procedures. Developed Cost and Schedule Baseline for project management control. Developed life-cycle and long-term planning for cost and schedule. Prepared initial information for ESAAB KD-1 approval.	Conduct project management/integration activities including critical path networking, and monthly Major Systems Acquisition reporting. Conduct administrative, contractual, and personnel activities to maintain project development. Maintain quality assurance program, plans and procedures including personnel training and qualification audits. Implement information management systems to support licensing, regulatory and technical information needs. These activities will utilize $1,400 of prior-year funds.			
	$ 1,850	$ 2,000	$ 0	$ 0	$ 0

III. Monitored Retrievable Storage (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Licensing	Updated QARD and QAPD appendices for amplification of QA requirements for MRS. Coordinated review of licensing-related statutes and regulations. Negotiated procedural agreement with NRC for pre-licensing interactions. Conducted pre-licensing interactions with the NRC.	Begin preparation of License Application. Continue NRC pre-licensing interactions. Identify and initiate development of sections of the Safety Analysis Report (SAR). These activities will utilize $2,200 of prior-year funds.			
	$ 1,000	$ 700	$ 0	$ 0	$ 0
Systems Support	Funds were requested to administer grants to State/Tribes and local governments. No grants were awarded during FY 1991.	Fund and administer feasibility assessment grants to the State/Tribes and local governments. This activity will utilize $1,097 prior-year funds.			
	$ 1,097	$ 0	$ 0	$ 0	$ 0
Environmental	Developed background information for EA. Prepared annotated outline for MRS EA management and data collection plan. These activities utilized $350K of prior-year funds.	Continue development of EA annotated outline. This activity will utilize $1,000 prior-year funds.			
	$ 200	$ 1,700	$ 0	$ 0	$ 0

III. Monitored Retrievable Storage (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Design and Engineering Studies	Updated systems engineering documents. Initiated development of conceptual design criteria, and design performance requirements. Initiated conceptual designs for selected technologies which will be carried into Title I design. Updated systems engineering documents to support commencement of Title I design. These activities utilized $2,536 of prior-year funds.	Maintain the technical baseline. Complete the conceptual design. Initiate design features tests and planning for prototypic system tests. These activities will utilize $1,184 of prior-year funds.			
	$ 3,300	$ 10,525	$ 0	$ 0	$ 0
Siting	Provided support to the Negotiator through preparation of reports and analysis of siting concerns. As requested, provided information materials. Provided support for public/institutional involvement and external review. Initiated siting contingency planning. These activities utilized $450 of prior-year funds.	Continue to provide requested support to the Negotiator, including performance of a technical assessment of a single site. Provide public information materials; oversee grants; support public involvement and support external review. These activities will utilize $3,400 of prior-year funds.			
	$ 200	$ 1,000	$ 0	$ 0	$ 0

III. Monitored Retrievable Storage (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Regulatory	Prepared and reviewed regulatory planning documents.	Update the MRS Regulatory Compliance Plan. Prepare necessary permit applications. These activities will utilize $300 of prior-year funds.			
	$ 300	$ 300	$ 0	$ 0	$ 0
Monitored Retrievable Storage					
Project Management			Establish Project Office in vicinity of selected site. Continue project management/ integration activities including critical path networking, and Major Systems Acquisition (MSA) reporting. Continue to conduct administrative, contractual, and personnel activities to maintain project development. Continue to maintain quality assurance procedures and conduct personnel training, audits and surveillance. Continue to maintain information management systems to support licensing, regulatory, and technical information needs.	Continue to maintain project office in vicinity of selected site. Continue to conduct project management/integration activities including critical path networking, and quarterly MSA reporting. Continue to conduct administrative, contractual, and personnel activities to maintain project development. Continue to maintain quality assurance procedures and conduct personnel training, audits and surveillances. Continue to maintain information management systems to support licensing, regulatory, and technical information needs.	Continue to maintain project office in vicinity of selected site. Continue to conduct project management/integration activities including critical path networking, and quarterly MSA reporting. Continue to conduct administrative, contractual, and personnel activities to maintain project development. Continue to maintain quality assurance procedures and conduct personnel training, audits and surveillances. Continue to maintain information management systems to support licensing, regulatory, and technical information needs.
	$ 0	$ 0	$ 3,190	$ 3,800	$ 3,950

III. Monitored Retrievable Storage (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Licensing			Continue NRC pre-licensing interactions. Continue preparation of the SAR. Initiate personnel training program and the licensing conditions document. Continue pre-licensing interactions with the NRC.	Continue preparation of SAR. Complete SAR sections on Decommissioning Plan, personnel training program, emergency plan, physical protection plan, the facility design, and the Licensing Conditions document.	Continue preparation of license application. Submit LA to NRC, along with EIS.
	$ 0	$ 0	$ 2,252	$ 2,400	$ 2,500
Systems Support			Fund and administer financial assistance at a minimum level of $5 million per year.	Fund and administer financial assistance as specified in negotiated agreement.	Fund and administer financial assistance as specified in negotiated agreement.
	$ 0	$ 0	$ 5,000	$ 5,000	$ 5,000
Environmental			Review, prepare, and issue final Environmental Assessment (EA) for a single proposed site. Initiate planning for Environmental Impact Statement (EIS).	Prepare and issue EIS implementation plan. Issue notice of intent for EIS. Conduct technical portion of EIS scoping hearings. Collect data for EIS and prepare draft EIS.	Complete development of, and issue draft EIS. Provide technical input to hearings on draft EIS. Respond to comments on draft EIS. Complete the final EIS.
	$ 0	$ 0	$ 1,642	$ 2,100	$ 2,300
Design and Engineering Studies			Initiate and complete Title I design. Initiate Title II design. Perform design reviews and technical support studies. Continue to maintain technical baseline.	Complete Title II design. Perform design reviews and technical support studies. Provide design input to EIS.	Continue Title II design incorporating appropriate NRC comments. Identify long-lead procurement items. Perform design review and technical support activities.

III. Monitored Retrievable Storage (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Design and Engineering Studies (Cont'd)	$ 0	$ 0	$ 18,579	$ 21,230	$ 21,230
Siting			Acquire beneficial use of subject land. Collect, analyze, and integrate site data in preparation of Draft Environmental Impact Statement (DEIS). Perform communication and liaison activities, including planning, and conducting institutional portion of EIS scoping hearings. Establish two information centers, conduct planned interactions and conduct semi-annual public update meetings. Implement socioeconomic program.	Continue data collection, analyses, integration and assessment in support of License Application (LA). Implement socioeconomic program and provide support for LA. Continue to provide communication and liaison support, including planning for and conducting public hearings on DEIS. Maintain information centers and conduct semi-annual meetings and other interactions.	Continue to provide communication and liaison support, maintain information centers, and conduct semi-annual meetings. Continue implementation of socioeconomic program, and provide support for LA.
	$ 0	$ 0	$ 6,857	$ 3,000	$ 2,500
Regulatory			Continue permitting requirements and obtain necessary permits. Support acquisition of land.	Obtain permits from appropriate state and local governments.	Obtain permits from appropriate state and local governments.
	$ 0	$ 0	$ 610	$ 600	$ 650
Subtotal, Monitored Retrievable Storage	$ 0	$ 0	$ 38,130	$ 38,130	$ 38,130
Engineering Development					

III. Monitored Retrievable Storage (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Prototypic Consolidation Development Program	This activity budgeted under Transportation for FY 1991.	This activity budgeted under Transportation for FY 1992.	Complete evaluation and approval of NUS Phase III final technical report. Release all but one member of Prototypic Consolidation Development Program (PCDP) project team, who oversees receipt of stored rod consolidation equipment and complete all Phase III tasks. DOE decision on whether to proceed with Phase IV hot test.	No Activity	No Activity
	$ 0	$ 0	$ 390	$ 0	$ 0
Non-Fuel-Bearing Components	No Activity	No Activity	No Activity	No Activity	No Activity
	$ 0	$ 0	$ 0	$ 0	$ 0
Concrete Cask Testing Project	This activity budgeted under Transportation for FY 1991.	No Activity	No Activity	No Activity	No Activity
	$ 0	$ 0	$ 0	$ 0	$ 0
Canister Welding	No Activity	No Activity	No Activity	No Activity	Issue Project Management and QA plans. Review requirements and issue requirements report. Prepare and issue Request for Proposals for Canister Welding (CW) equipment and non-destructive examination equipment. Review proposals and award contract.

III. Monitored Retrievable Storage (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Canister Welding (Cont'd)	$ 0	$ 0	$ 0	$ 0	$ 865
Dry Rod Consolidation Technology	No Activity	No Activity	Remove 48 non-fuel-bearing components (spent fuel skeletons) placed in INEL TAN Hot Shop Pool in 1987 as a result of OCRWM consolidation technology project. Storage costs, currently $150,000 annually, will increase to $1,675,000 annually in mid-1990s when OCRWM will be the only remaining customer of pool. Develop Project Management Plan, QA Plan, and environmental documentation. Complete study of methods for disposition and select option to proceed. Begin procurement of High- Integrity Containers (HIC) for storing spent fuel skeletons. Complete design planning and procurement of equipment and support hardware. Prepare operating procedures for Hot Shop operations and begin on-site fabrication.	Complete on-site fabrication and HIC procurement. Perform dry run and readiness review. Complete processing of dry rod consolidation technology skeletons. Load HICs and transfer to storage area. Decontaminate and decommission facility and issue final report.	No Activity.
	$ 0	$ 0	$ 880	$ 1,100	$ 0

III. Monitored Retrievable Storage (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Spent Fuel Transportation and Storage	This activity budgeted under Transportation for FY 1991.	This activity budgeted under Transportation for FY 1992.	Continue fuel storage and monitoring in pool. Prepare revised SAR and NEPA documentation to support long-term storage at West Valley.	Continue monitoring fuel in pools.	Continue monitoring fuel in pools. In addition to regular storage costs, after December 31, 1994, DOE will also begin to pay the State of New York a storage penalty of $105,000 per quarter.
	$ 0	$ 0	$ 1,343	$ 1,513	$ 1,748
Subtotal, Engineering Development	$ 0	$ 0	$ 2,613	$ 2,613	$ 2,613
Monitored Retrievable Storage	$ 7,947	$ 16,225	$ 40,743	$ 40,743	$ 40,743

DEPARTMENT OF ENERGY
FY 1993 CONGRESSIONAL BUDGET REQUEST
NUCLEAR WASTE FUND
(dollars in thousands)

KEY ACTIVITY SUMMARY

NUCLEAR WASTE FUND

1. Preface: Transportation, Systems Integration, and Engineering Development

Transportation

The purpose of this activity is to develop a safe, environmentally acceptable, and cost-effective system for the transport of spent nuclear fuel in time to support the start of operation at an MRS facility, utilizing the private sector to the fullest extent possible; provide for the design, development, certification, and testing of necessary transportation equipment and services required for operation; identify and resolve institutional issues; develop analytical processes and transportation information data bases to support overall program requirements (e.g., Environmental Assessment and Environmental Impact Statement support, risk assessment, interface information, cost information, etc.); and provide for the operational aspects of the shipment of spent fuel and high-level wastes to storage and/or final disposal facilities.

Waste Acceptance

This activity consists of: 1) primary technical interface with nuclear utilities to ensure communication with the owners and generators of spent nuclear fuel and high-level radioactive waste; 2) necessary support to manage the Standard Disposal Contract, including fees and terms of payment; 3) verification of on-going and one-time fees paid into the Nuclear Waste Fund (NWF); 4) management of the NWF fee adequacy analysis, 5) development and management of the contract/MOU fee structures and methodologies for West Valley and Defense Waste; 6) management of spent fuel data collection, validation and dissemination, management of the spent fuel acceptance process with owners and generators of spent fuel; and 7) preparation of the Annual Capacity Report and the Annual Acceptance Priority Ranking Report.

Systems Integration

This activity is part of the Systems and Compliance key activity summary in the FY 1993 budget. It is shown here only for continuity with the FY 1991 and FY 1992 budget structure. The objective of the Systems Integration activity is to ensure that the various components of the waste management system are integrated into a single system that is safe, efficient, reliable, cost-effective, and on schedule. The approach to accomplishing this objective is to: identify and baseline technical requirements of the total system; maintain current descriptions of the system, its components, and interfaces that meet requirements; enhance communication among parties responsible for individual system components and functions; develop and maintain a capability to fully assess alternative concepts; conduct system studies and recommend improvements; and support development of equipment and processes having the potential to improve the system.

Engineering Development

This activity is part of the MRS key activity summary in the FY 1993 budget. It is shown here only for continuity with the FY 1991 and FY 1992 budget structure. The Engineering Development activity develops and demonstrates crosscutting technologies required by the Office of Civilian Radioactive Waste Management (OCRWM), such as a process to consolidate spent nuclear fuel assemblies on a production line basis, adequate to meet the annual throughput requirements and facility development schedules of a MRS facility or a geologic repository and the development of alternative dry storage technologies for spent nuclear fuel. This includes demonstration of the equipment through the consolidation of actual spent fuel assemblies. Technologies to implement automated remote handling techniques in the OCRWM Program, technologies and processes required to allow OCRWM to comply with international nuclear material safeguards requirements, and processes and equipment to be used in the decontamination and decommissioning of OCRWM facilities and equipment will be developed as part of this activity.

II. A. Summary Table: Transportation, Systems Integration, and Engineering Development

Program Activity	FY 1991 Enacted	FY 1992 Enacted	FY 1993 Request	% Change	FY 1994 Request	FY 1995 Request
Transportation						
Cask Systems Development	$ 9,510	$ 13,000	$ 14,500	+ 12	$ 14,500	$ 14,500
Institutional Program	1,881	1,750	3,000	+ 71	3,000	3,000
Systems Analysis	2,171	1,600	3,000	+ 88	3,000	3,000
Project Management	0	0	1,000	>999	1,000	1,000
Program Management	2,276	400	0	-100	0	0
Operations	0	0	0	0	0	0
Support Systems Development	2,125	1,605	3,805	+137	3,805	3,805
Subtotal, Transportation	$ 17,963	$ 18,355	$ 25,305	+ 38	$ 25,305	$ 25,305
Waste Acceptance						
Acceptance Criteria	$ 0	$ 0	$ 1,100	>999	$ 1,100	$ 1,100
Fee Adequacy	0	0	650	>999	650	650
Data Analysis	0	0	1,660	>999	1,660	1,660
Technical Support	0	0	250	>999	250	250
Subtotal, Waste Acceptance	$ 0	$ 0	$ 3,660	>999	$ 3,660	$ 3,660
Systems Integration						
Systems Requirements & Description	$ 3,047	$ 2,670	$ 0	-100	$ 0	$ 0
Systems Analysis Capabilities	1,069	1,860	0	-100	0	0
Systems Engineering Studies	1,705	2,445	0	-100	0	0
Special Studies	446	2,160	0	-100	0	0
Program Management	703	3,925	0	-100	0	0
Subtotal, Systems Integration	$ 6,970	$ 13,060	$ 0	-100	$ 0	$ 0
Engineering Development						
Prototypic Consolidation Development Program	$ 3,400	$ 320	$ 0	-100	$ 0	$ 0
Nuclear Fuel Services (NFS)	0	1,948	0	-100	0	0
Subtotal, Engineering Development	$ 3,400	$ 2,268	$ 0	-100	$ 0	$ 0
Total, Transportation, Systems Integration, and Engineering Development	$ 28,333	$ 33,683	$ 28,965	- 14	$ 28,965	$ 28,965

II. B. Major Laboratory and Facility Funding

	FY 1991 Enacted	FY 1992 Enacted	FY 1993 Request	% Change	FY 1994 Request	FY 1995 Request
DOE Field Office, Chicago (Argonne)	$ 435	$ 0	$ 0	0	$ 0	$ 0
DOE Field Office, Chicago (Chicago)	$ 1,487	$ 0	$ 0	0	$ 0	$ 0
Idaho National Engineering Laboratory - EG&G	$ 518	$ 1,000	$ 800	- 20	$ 800	$ 800
DOE Field Office, Idaho	$ 0	$ 6,240	$ 5,800	- 7	$ 5,800	$ 5,800
Oak Ridge National Laboratory	$ 8,564	$ 2,428	$ 0	-100	$ 0	$ 0
Sandia National Laboratories	$ 3,000	$ 2,600	$ 2,900	+ 12	$ 2,900	$ 2,900

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Transportation, Systems Integration, and Engineering Development					
Transportation					
Cask Systems Development	Continued to draft final design reports on Legal- Weight Truck Cask Design and Rail/Barge Cask Design. Continued to conduct engineering, drop and design verification tests, as appropriate. Continued to provide QA support to include QA plans, document review, source inspections and contractor surveillance. Continued to resolve technical issues. Continued to develop material and component technology to support cask designs. Continued to develop automated handling and new transport equipment technology. Continued test planning support.	Issue RFP for acquisition of complementary casks from private industry for early shipping capability. Issue final design reports on Legal-Weight Truck Cask, and Rail/Barge Cask, and continue to conduct engineering, drop, and design verification tests as appropriate. Submit Safety Analysis Report for Packaging (SARP) to NRC for certification of Legal-Weight Truck Cask Design and Rail/Barge Cask Design. Support NRC certification process on Legal-Weight Truck Cask Design and Rail/Barge Cask Design.	Award contract(s) for acquisition of complementary casks from private industry for early shipment capability. Support NRC certification process on Legal-Weight Truck Cask Design and Rail/ Barge Cask Design. Continue to provide QA support to include QA plans, document review, source inspections and contractor surveillances. Continue to address technical issues requiring resolution. Continue to develop material and component technology to support cask design and certification activities. Continue	Continue support for acquisition of complementary casks from private industry for early shipping capability. Continue support for NRC certification of Legal-Weight Truck Casks. Continue to support NRC certification process of Rail/ Barge Casks. Following NRC certification, initiate cask prototype fabrication activities for the Legal-Weight Truck Cask and the Rail/Barge Cask. Continue to address technical issues requiring resolution. Continue to develop material and component technology to support cask designs.	Continue support for acquisition of complementary casks from private industry for early shipping capability. Continue to support prototype fabrication for the Legal-Weight Truck Cask and the Rail/Barge Cask. Prepare detailed plans for performance evaluation testing of the prototype casks. Conduct a study to update design specifications for an Overweight Truck Cask. Continue to address technical issues requiring resolution. Continue monitoring verification activities. Continue to provide QA support to

III. Transportation, Systems Integration, and Engineering Development (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Cask Systems Development (Cont'd)	Continued to provide instrumentation equipment, monitor testing and review data for cask design verification testing. Supported design reviews.	Continue to provide QA support to include QA plans, document review, source inspections and contractor surveillances. Continue to address technical issues requiring resolution. Continue to develop material and component technology to support cask designs. Continue test planning support. Continue monitoring verification activities. Support design reviews.	test planning support. Continue to monitor design verification activities. Support design reviews.	Continue monitoring verification activities. Continue to provide QA support to include QA plans, document review, source inspections and contractor surveillances.	include QA plans, document review, source inspections and contractor surveillances.
	$ 9,510	$ 13,000	$ 14,500	$ 14,500	$ 14,500
Institutional Program	Issued draft Section 180(c), NWPA, strategy plan for public comment. Continued cooperative agreements with various national and regional groups. Identified Northeast Regional Group. Continued institutional planning and issue resolution activities with State, Tribal and industry transportation representatives. Supported Transportation Coordinating Group (TCG) meetings and technical workshops. Continued vehicle inspection pilot study.	Initiate implementation of Section 180(c), NWPA, strategy. Coordinate with DOT (Hazardous Materials Transportation Uniform Act of 1990, Section 117A) to develop inspection and emergency response technical assistance programs for States & Indian Tribes. Continue cooperative agreements with national, regional, & technical groups. Add Northeastern Regional Group to Cooperative Agreement Program. Continue institutional planning and issue resolution activities with State, Tribal and industry	Develop Section 180(c) policy options for program implementation. Continue cooperative agreements with various national, regional and technical groups. Initiate procurement with north eastern regional group. Continue tracking of legal & institutional policies regarding radioactive shipments. Initiate determination of rail routing criteria. Continue vehicle inspection pilot study. Continue to support TCG meetings and technical workshops. Continue to provide public information for transportation	Initiate policy development of the implementation plan for assistance and funding to States and Indian Tribes as required by Section 180(c), NWPA. Continue to track resolution of institutional issues with State, Tribal, and industry transportation representatives. Continue activities assessing barge, rail, legal-weight and overweight-truck transport institutional issues. Continue vehicle inspection pilot study and efforts for State adoption of uniform inspection	Continue development of the implementation plan for the assistance and funding to States and Indian Tribes as required by Section 180(c), NWPA. Continue cooperative agreements with various national and regional groups. Continue institutional planning and tracking of issue resolution activities with State, Tribal and industry transportation representatives. Initiate develop potential barge and overweight-truck transport routing policies. Continue vehicle inspection pilot study. Continue

III. Transportation, Systems Integration, and Engineering Development (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Institutional Program (Cont'd)		transportation representatives. Continue vehicle inspection pilot study. Support TCG meetings. Continue to develop public information materials and display transportation exhibits at major public meetings.	activities.	procedures. Continue to establish routing criteria. Continue to support TCG meetings and technical workshops. Continue public information activities.	to support TCG meetings and technical workshops.
	$ 1,881	$ 1,750	$ 3,000	$ 3,000	$ 3,000
Systems Analysis	Continued updating codes and supported data bases necessary for purposes of performing cost/risk analyses, system tradeoff study, transportation logistics constraint analyses. Conducted external peer review of the RADTRAN computer code. Maintained reference transportation system to provide baseline tradeoff assumptions. Continued specified transportation systems support analyses to support identified program decisions, MRS and other OCRWM systems studies. Continued to conduct analyses and planning applicable to program environmental requirements. Completed Near Site Transportation Infrastruture (NSTI) study. Completed	Continue updating codes necessary for purposes of performing cost/risk analyses. Maintain reference transportation system to provide baseline tradeoff assumptions. Continue specified transportation system support analyses to support identified program decisions, and MRS and other OCRWM systems studies. Continue to conduct analyses and planning applicable to project environmental requirements. Support MRS Environmental Assessment transportation analyses. Perform studies to support the disposal contract waste acceptance process and the Annual Capacity Report issue resolution process with utilities.	Continue updating codes necessary for purposes of performing cost/risk analyses. Continue to maintain reference transportation system to provide baseline tradeoff assumptions. Continue specified transportation system support analyses to support identified program decisions, and MRS and other OCRWM systems studies. Continue to conduct analyses and planning applicable to project environmental requirements. Continue to perform studies to support the disposal contract waste acceptance process and the Annual Capacity Report issue resolution process with utilities. Initiate transportation system risk assessment. Conduct accident study	Continue accident study and other transportation risk analyses. Assess, review (peer review) and enhance key transportation models/codes. Complete transportation system risk assessment. Respond to comments per the draft environmental impact statement. Participate in National Environmental Policy Act hearings. Continue to maintain reference transportation system to provide baseline tradeoff assumptions. Continue specified transportation system analyses to support identified program decisions, and MRS and other OCRWM systems studies. Continue to conduct analyses and planning applicable to project environmental requirements. Continue	Continue updating computer codes and support data bases necessary for purposes of performing cost/risk analyses, system tradeoff studies, transportation logistics constraint analyses. Continue to maintain reference transportation system to provide baseline tradeoff assumptions. Continue specified transportation system analyses to support identified program decisions, and MRS and other OCRWM systems studies. Continue to conduct analyses and planning applicable to project environmental requirements. Continue to perform logistics and waste acceptance criteria studies to support the Disposal Contract waste accept-

III. Transportation, Systems Integration, and Engineering Development (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Systems Analysis (Cont'd)	Phase II report on the Facility Interface Capability Assessment (FICA) and performed waste acceptance criteria studies/draft positions to support Annual Capacity Report issue resolution process.		and other transportation risk analyses. Assess, review (peer review) and enhance key transportation models/codes.	to perform logistics and waste acceptance criteria studies to support the Disposal Contract waste acceptance process and the Annual Capacity Report issue resolution process with utilities.	tance process and the Annual Capacity Report issue resolution process with utilities.
	$ 2,171	$ 1,600	$ 3,000	$ 3,000	$ 3,000
Project Management	This activity budgeted under Program Management for FY 1991.	This activity budgeted under Program Management for FY 1992.	Continue development of QA program documents and planning activities for existing and new activities. Continue to update project-level requirements and management documents. Continue QA audits. Continue to maintain cost and schedule reports and project-level network schedules.	Continue development of QA program documents. Update transportation QA program description and procedures. Conduct audits, surveillances and monitoring of QA program requirements, Continue human factors engineering (HFE) assessments.	Continue development of QA program documents. Update transportation QA program description and procedures. Conduct audits, surveillances and monitoring of QA program requirements. Continue HFE assessments.
	$ 0	$ 0	$ 1,000	$ 1,000	$ 1,000
Program Management	Continued development of QA program documents and planning activities. Updated program-level requirements and management documents. Initiated QA audits. Maintained cost and schedule reports and program-level network schedules. These activities utilized	Continue development of QA program documents and planning activities for existing and new activities. Update project-level requirements and management documents. Continue QA audits. Maintain cost and schedule reports and project-level network schedules.	Funding requirements for FY 93 and beyond appears in the Project Management Activity.		

III. Transportation, Systems Integration, and Engineering Development (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Program Management (Cont'd)	$316K of prior-year funds.				
	$ 2,276	$ 400	$ 0	$ 0	$ 0
Operations	No Activity	No Activity	No Activity	No Activity	No Activity
	$ 0	$ 0	$ 0	$ 0	$ 0
Support Systems Development	Continued transportation operational review of Standard Contract issues and supported issue resolution process. Continued operational legal-weight tractor evaluations. Published Cask Maintenance Facility (CMF) feasibility study. Conducted operational assessments, including auxiliary equipment needs for 20 reactor sites. Continued operational input to cask final designs. Developed Tractor Test Plan to be integrated with Trailer Test Plan. Continued monitoring and reporting of ongoing shipments. Developed draft transportation operations systems description. Completed non-fuel associated hardware analysis.	Continue site-specific analyses. Continue operational assessments for reactor sites. Continue monitoring and reporting of ongoing shipments and foreign technology. Continue monitoring of existing casks, maintenance, and tractor issues.	Maintain completed initial utility site evaluation assessments. Continue highway and rail service studies. Continue startup, interim maintenance and existing cask fleet assessments. Continue requirements analyses and establish service and maintenance and field operations requirements. Continue to provide operations input to cask design. Continue to monitor ongoing spent fuel shipments and related activities. Initiate development of criteria to establish total system software, personnel and equipment requirements. Continue and complete CMF preconceptual design studies. Formulate ancillary equipment acquisition policy Develop interim maintenance strategy.	Provide technical baseline management. Maintain completed initial site evaluation assessments. Complete rail configuration planning. Assess equipment and support requirement to handle rail and barge shipments. Begin site-specific transportation plans. Continue highway and rail service studies. Continue startup, interim maintenance and existing cask fleet assessments. Continue total system equipment, personnel, software and cask requirements studies. Continue functional analysis and issue resolution process. Initiate carriage subsystem requirements and establish planning and control subsystem requirements document. Continue to provide operations input to	Provide technical baseline management. Maintain completed initial site evaluation assessments. Continue to assess equipment and support requirement to handle rail and barge shipments. Continue preparation of site-specific transportation plans. Complete identification of special equipment requirements. Complete highway and rail service studies. Continue startup, interim maintenance and existing cask fleet assessments. Continue total system equipment, personnel, software and cask requirements studies. Continue to provide operations input to cask design. Continue to monitor ongoing spent fuel shipment and related activities.

III. Transportation, Systems Integration, and Engineering Development (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Support Systems Development (Cont'd)				cask design. Continue to monitor ongoing spent fuel shipment activities.	
	$ 2,125	$ 1,605	$ 3,805	$ 3,805	$ 3,805
Subtotal, Transportation	$ 17,963	$ 18,355	$ 25,305	$ 25,305	$ 25,305
Waste Acceptance					
Acceptance Criteria	This activity budgeted under Program Management/Technical Support for FY 1991.	This activity budgeted under Program Management/Technical Support for FY 1992.	Continue to meet contractual deadlines for the Annual Capacity Report (ACR) issue resolution process and Acceptance Priority Ranking (APR) publication. Continue Delivery Commitment Schedule Exchange (DCSE) processing.	Update ACR and APR reports. Continue ACR issue resolution process. Continue DCSE process. Review Standard Contract for possible revision.	Update ACR and APR reports. Continue ACR issue resolution process. Continue DCSE process. Review Standard Contract for possible revision.
	$ 0	$ 0	$ 1,100	$ 1,100	$ 1,100
Fee Adequacy	This activity budgeted under Program Management/Technical Support for FY 1991.	This activity budgeted under Program Management/Technical Support for FY 1992.	Continue quarterly fee verification. Continue annual review of fee adequacy. Continue fee estimation and electricity generation estimates and verification.	Continue quarterly fee verification. Continue annual review of fee adequacy. Continue fee estimation and electricity generation estimates and verification.	Continue quarterly fee verification. Continue annual review of fee adequacy. Continue fee estimation and electricity generation estimates and verification.
	$ 0	$ 0	$ 650	$ 650	$ 650

III. Transportation, Systems Integration, and Engineering Development (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Data Analysis	This activity budgeted under Program Management/Technical Support for FY 1991.	This activity budgeted under Program Management/Technical Support for FY 1992.	Review annual spent fuel data and disseminate to users.	Review annual spent fuel data and disseminate to users.	Review annual spent fuel data and disseminate to users.
	$ 0	$ 0	$ 1,660	$ 1,660	$ 1,660
Technical Support	This activity budgeted under Program Management/Technical Support for FY 1991.	This activity budgeted under Program Management/Technical Support for FY 1992.	Maintain essential support for fee and acceptance criteria activities.	Maintain essential support fee and acceptance criteria activities.	Maintain essential fee and acceptance criteria activities.
	$ 0	$ 0	$ 250	$ 250	$ 250
Subtotal, Waste Acceptance	$ 0	$ 0	$ 3,660	$ 3,660	$ 3,660
Systems Integration					
Systems Requirements & Description	Updated baseline documents including systems requirements, description and interface. Continued to maintain and support the configuration management system. Refined system criteria for waste acceptance. Continued updating reference data base on waste inventories, reactor capabilities and waste characteristics. Continued to participate in the waste acceptance issue resolution process. Continued QA efforts including QA plan implementation review, assessments,	Maintain and update requirements documents and continue development of system description documents. Update program baseline documents according to results of systems studies or special studies. Continue to maintain and support the configuration management system. Maintain and update program management plan and systems engineering documentation. Continue to update system data base to include waste inventories, reactor capabilities, and waste characteristics. Continue to participate in the waste acceptance	Funding requirements for FY 93 and beyond appear in the Systems and Compliance Activity section.		

III. Transportation, Systems Integration, and Engineering Development (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Systems Requirements & Description (Cont'd)	surveillance and audit activities. Provided program-wide configuration management and change control board secretariat functions. Evaluated current state of technology and estimated technology risk. These activities utilized $3,235K of prior-year funds.	issue resolution process. Support utility contract modification and strategy development. Continue QA efforts, including QA plan review, assessments, surveillance and audit activities. Provide program-wide configuration management and change control board secretariat functions. Evaluate current state of technology and estimate technology risk.			
	$ 3,047	$ 2,670	$ 0	$ 0	$ 0
Systems Analysis Capabilities	As new information became available, continued updating of capabilities for analysis including waste stream, operations/logistics, cost, reliability/availability/maintainability (RAM) and dose. Continued to modify capabilities, as needed, to support specific applications to systems studies or special studies. Continued QA efforts including QA plan implementation review, assessments, surveillance and audit activities. These activities	Continue updating analysis capabilities for waste stream, operations/logistics, cost, RAM and dose. Continue to update waste inventory prediction capabilities for use in all system elements. Continue to modify capabilities, as needed, to support specific applications to systems studies or special studies. Continue QA efforts, including QA plan review, assessments, surveillance and audit activities and documentation and	Funding requirements for FY 93 and beyond appear in the Systems and Compliance Activity section.		

III. Transportation, Systems Integration, and Engineering Development (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Systems Analysis Capabilities (Cont'd)	utilized $1,811 of prior-year funds.	verification of computer codes.			
	$ 1,069	$ 1,860	$ 0	$ 0	$ 0
Systems Engineering Studies	Continued detailed and refined systems engineering studies in support of system design, modifications to systems operation, and optimization of various subsystem options that will impact system costs, reliability tradeoffs, waste acceptance procedures, storage options, and process costs. Conducted analyses to assess hot fuels handling, dose rates, refinements, and cost/reliability adjustments. Continued QA efforts such as QA plan implementation review, audit and surveillance activities and assessements. These activities utilized $3,200 of prior year funds.	Continue detailed and refined systems engineering studies and system trade-offs in support of system design, modifications in systems operation and optimization of various subsystem options that will impact system costs, reliability tradeoffs, waste acceptance procedures, storage options, and process costs. Conduct analyses according to priorities established by the systems study planning process in order to support program decisions about configuration and function allocation. Continue QA efforts including QA plan implementation review, assessments, audit and surveillance activities.	Funding requirements for FY 93 and beyond appear in the Systems and Compliance Activity section.		
	$ 1,705	$ 2,445	$ 0	$ 0	$ 0

III. Transportation, Systems Integration, and Engineering Development (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Special Studies	Continued expansion of system planning and program development activities. Continued interface with other program elements and utility industry regarding overall system planning. Conducted special analyses and participated in technical reviews and workshops. Continued QA efforts including QA plan implementation review, assessments, surveillance and audit activities.	Perform special studies affecting all waste management system participants, including the utilities, the Nuclear Waste Technical Review Board, and the States and Tribes. Conduct special studies that are appropriate to the development of the waste management system. Participate in technical reviews and workshops, as required. Continue QA efforts including QA plan implementation review, assessments, surveillance and audit activities.	Funding requirements for FY 93 and beyond appear in the Systems and Compliance Activity section.		
	$ 446	$ 2,160	$ 0	$ 0	$ 0
Program Management	Continued to provide Program management support, based on responsibility for the overall performance of the Systems Integration Program. Continued to provide periodic reports and management of and direct participation in appropriate activities within the Systems Integration Program. Maintained QA procedures and provided contractor QA compliance. This activity utilized $225K of prior-year funds.	Continue to provide Program management support, based on responsibility for the overall performance of the Systems Integration Program. Continue to provide periodic reports and management of and direct participation in appropriate activities within the Systems Integration Program. Maintain QA procedures and provide contractor QA compliances.	Funding requirements for FY 93 and beyond appear in the Systems and Compliance Activity section.		

III. Transportation, Systems Integration, and Engineering Development (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Program Management (Cont'd)	$ 703	$ 3,925	$ 0	$ 0	$ 0
Subtotal, Systems Integration	$ 6,970	$ 13,060	$ 0	$ 0	$ 0
Engineering Development					
Prototypic Consolidation Development Program	Completed delivery of mock-up fuels and fuel canisters to equipment contractor. Completed construction of test facility. Began installation of consolidation equipment in test facility. Completed all prerequisite test acceptance criteria and began preparation of test procedures. Began performance of System Operation Tests. Provided extensive QA support to ensure compliance with Nuclear Quality Assurance (NQA-1) requirements, including performing periodic contractor audits, equipment fabrication inspections, and witnessing of test activities.	Initiate and complete shipments of equipment to INEL. Issue final report for Phase III. Continue QA oversight. These activities will utilize $300K of prior-year funds.	Funding requirements for FY 93 and beyond appear in the Monitored Retrievable Storage Activity section.		
	$ 3,400	$ 320	$ 0	$ 0	$ 0

III. Transportation, Systems Integration, and Engineering Development (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Nuclear Fuel Services (NFS)	Completed cask modifications required to meet NRC certification requirements. Purchased new impact limiters and shipping cradles for second cask. Stored fuel at West Valley, N.Y., including revising SAR. Completed design, safety, and environmental documentation to upgrade fuel pool water treatment system. Purchased long-lead-time equipment needed to replace water treatment system of spent fuel storage pool in West Valley. These activities utilized $2,195K of prior-year funds.	Complete hardware procurements. Complete storage pool filtration modifications. Study options for long-term storage at West Valley. These activities will utilize $345K of prior year funds.	Funding requirements for FY 93 and beyond appear in the Monitored Retrievable Storage Activity section.		
	$ 0	$ 1,948	$ 0	$ 0	$ 0
Subtotal, Engineering Development	$ 3,400	$ 2,268	$ 0	$ 0	$ 0
Transportation, Systems Integration, and Engineering Development	$ 28,333	$ 33,683	$ 28,965	$ 28,965	$ 28,965

DEPARTMENT OF ENERGY
FY 1993 CONGRESSIONAL BUDGET REQUEST
NUCLEAR WASTE FUND
(dollars in thousands)

KEY ACTIVITY SUMMARY

NUCLEAR WASTE FUND

I. Preface: Systems and Compliance

This Key Activity Summary encompasses the former Systems Integration activity with the addition of regulatory compliance activities. Its objectives are to ensure that: 1) the various components of the waste management system are integrated into a single system that is safe, efficient, reliable, cost-effective, and in compliance with all applicable regulatory guidelines; and, 2) the activities leading to the final waste management system are conducted in accordance with the regulatory guidance provided by the governing authorities. The approach to accomplishing these objectives is to: identify and baseline technical requirements of the total system; maintain current descriptions of the system, its components, and interfaces that meet requirements; enhance communication among parties responsible for individual system components and functions; develop and maintain a capability to fully assess alternative concepts; conduct systems studies and recommend improvements; support development of equipment and processes having the potential to improve the system; conduct regulatory compliance reviews; support the Nuclear Waste Technical Review Board; and continue interactions with NRC concerning licensing issues. These activities are critical to the success of the overall program schedule as they directly impact the NRC licensing process for both the repository and the MRS.

In FY 1993, Systems and Compliance activities will focus on the repository and MRS program elements, with emphasis on work necessary to support Yucca Mountain surface-based testing, early issue resolution, and development of the requisite performance assessment tools, as well as MRS design and MRS/repository integration into the overall waste management system.

II. A. Summary Table: Systems and Compliance

Program Activity	FY 1991 Enacted	FY 1992 Enacted	FY 1993 Request	% Change	FY 1994 Request	FY 1995 Request
Systems Engineering	$ 0	$ 0	$ 7,382	>999	$ 7,382	$ 7,382
Systems Planning and Integration	0	0	4,864	>999	4,864	4,864
Configuration Management	0	0	2,025	>999	2,025	2,025
Regulatory Policy and Requirements	0	0	2,664	>999	2,664	2,664
Regulatory Integration	0	0	2,664	>999	2,664	2,664
Total, Systems and Compliance	$ 0	$ 0	$ 19,599	>999	$ 19,599	$ 19,599

II. B. Major Laboratory and Facility Funding

	FY 1991 Enacted	FY 1992 Enacted	FY 1993 Request	% Change	FY 1994 Request	FY 1995 Request
DOE Field Office, Chicago (Argonne)	$ 0	$ 0	$ 0	0	$ 0	$ 0
DOE Field Office, Chicago (Chicago)	$ 0	$ 0	$ 0	0	$ 0	$ 0
Idaho National Engineering Laboratory - EG&G	$ 0	$ 0	$ 0	0	$ 0	$ 0
DOE Field Office, Idaho	$ 0	$ 0	$ 0	0	$ 0	$ 0
DOE Field Office, Nevada	$ 586	$ 0	$ 0	0	$ 0	$ 0
Oak Ridge National Laboratory	$ 7,564	$ 0	$ 750	>999	$ 0	$ 0
Pacific Northwest Laboratory	$ 3,300	$ 0	$ 0	0	$ 0	$ 0
DOE Field Office, Richland	$ 1,213	$ 0	$ 0	0	$ 0	$ 0
Sandia National Laboratories	$ 0	$ 0	$ 0	0	$ 0	$ 0

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Systems and Compliance					
Systems Engineering	Initiated updating of technical baseline documents including systems requirements to reflect current program policies and revisions to regulations. Continued the implementation of the Management System Improvement Strategy (MSIS) effort which involves the functional analysis on the Physical System. Functional analysis included the identification of the primary functions, subfunctions, interfaces and their corresponding requirements of the Nuclear Waste Management System.	Complete the physical functional analysis effort which includes further development of systems and subsystem requirements. Continue to identify interfaces, requirements, and architecture for each subsystem of the waste management system. Continue to develop performance requirements for subsystems and technical baseline documents. Continue to monitor and assess the QA activities associated with the functional analysis effort. Update program baseline documents as a result of system studies. Maintain the data base management,	Update technical baseline documents to reflect revisions to regulations and statutes and additional performance requirements resulting from ongoing systems studies. Maintain data base management requirements/research process. Update waste reference system data base. Modify and evaluate systems capabilities to support specific applications to systems studies. Conduct detailed systems engineering studies in support of MRS and Exploratory Studies Facility (ESF) design efforts, identification of alternatives to systems	Continue to update technical baseline documents to reflect completed system studies and revisions of source documents. Maintain data base management requirements/research process. Continue to update the waste reference system data base. Modify and evaluate systems capabilities to support specific applications to systems studies. Continue detailed systems engineering studies in support of MRS and ESF design efforts, identification of alternatives to systems operation, and optimization of various subsystems options that	Continue to update technical baseline documents to reflect revisions of source documents. Maintain data base management requirements/research process. Continue to update the waste reference system data base. Modify and evaluate systems capabilities to support specific applications to systems studies. Continue detailed systems engineering studies in support of ongoing repository and MRS design efforts, identification of alternatives to systems operation, and optimization of various subsystems options that will impact system

III. Systems and Compliance (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Systems Engineering (Cont'd)	Initiated development of a data base for requirements. Generated and revised functional flow diagrams resulting from the functional analysis effort. Initiated functional analysis of the Exploratory Studies Facility (ESF) to support design effort. Initiated development of systems engineering studies plan in support of design effort, in accordance with Quality Assurance (QA) plan, including modifications to systems operation, and optimization of various subsystems options. Conduct analyses on fuels handling, and cost/reliability adjustments. Continued expansion of system planning and program development activities. Continued QA efforts including QA plan implementation review, assessments, surveillance and audit activities. Evaluated, recommended, selected and implemented three computer models for evaluation of system and subsystem performance measures. Initiated the development of a revised plan and detailed methodology to	requirements research process. Update the data base to reflect current statutes and regulations. Update the waste reference data base. Complete the functional analysis and documentation for all major system elements. Continue to evaluate and modify systems capabilities, as needed, to support specific applications to systems studies. Continue QA efforts including QA plan review, assessments, surveillance and audit activities and documentation and verification of computer codes. Continue detailed systems engineering studies and computer modelling in support of design effort, modifications to systems operation, and optimization of various subsystems options that will impact system costs, reliability, tradeoffs, waste acceptance procedures, storage options, and process costs. Evaluate alternative design and operational scenarios. Continue the development of the revised plan and detailed methodology to sequentially identify	operation, and optimization of various subsystems options that will impact system costs, reliability, tradeoffs, waste acceptance procedures, storage options, and process costs. Conduct analysis to assess fuels handling, and cost/reliability adjustments. Conduct system planning and program development activities. Provide interface with other program elements and utility industry regarding overall system planning. Evaluate the implementation and operation of selected computer models for evaluation of system and subsystem performance measures. Conduct review of ongoing systems models. Evaluate alternative design and operational scenarios and the effects of changes in flow of waste materials through the system. Develop the revised plan and detailed methodology to sequentially identify and accomplish necessary tradeoff studies that will further clarify requirements and facility design issues,	will impact system costs, reliability, tradeoffs, waste acceptance procedures, storage options, and process costs. Continue analysis to assess fuels handling, and cost/reliability adjustments. Continue system planning and program development activities. Interface with other program elements and utility industry regarding overall system planning. Evaluate the implementation and operation of selected computer models for evaluation of system and subsystem performance measures. Continue review of ongoing systems models. Evaluate alternative design and operational scenarios and the effects of changes in flow of waste materials through the system. Continue to develop the revised plan and detailed methodology to sequentially identify and accomplish necessary tradeoff studies that will further clarify requirements and facility design issues, approaches, and program and subsystem performance requirements for	costs, reliability, tradeoffs, waste acceptance procedures, storage options, and process costs. Continue analysis to assess fuels handling, and cost/reliability adjustments. Continue system planning and program development activities. Interface with other program elements and utility industry regarding overall system planning. Evaluate the implementation and operation of selected computer models for evaluation of system and subsystem performance measures. Continue review of ongoing systems models. Evaluate alternative design and operational scenarios and the effects of changes in flow of waste materials through the system. Continue to develop the revised plan and detailed methodology to sequentially identify and accomplish necessary tradeoff studies that will further clarify requirements and facility design issues, approaches, and program and subsystem performance requirements for baseline requirements

III. Systems and Compliance (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Systems Engineering (Cont'd)	sequentially identify and accomplish necessary trade studies that will further decompose facility design issues, approaches, and program and subsystem performance requirements for baseline requirements documents.	and accomplish necessary trade studies that will further decompose facility design issues, approaches, and program and subsystem performance requirements for baseline requirements documents to meet program management milestones.	approaches, and program and subsystem performance requirements for baseline requirements documents to meet program milestones. Conduct QA efforts, including QA plan review, assessments, and documentation and verification of computer codes.	baseline requirements documents to meet program milestones. Continue QA efforts, including QA plan review, assessments, and documentation and verification of computer codes.	documents to meet program milestones. Continue QA efforts, including QA plan review, assessments, and documentation and verification of computer codes.
	$ 0	$ 0	$ 7,382	$ 7,382	$ 7,382
Systems Planning and Integration	Conduct programmatic functional analyses of 8 key OCRWM technical functions to support the Management Systems Improvement Strategy. Identify and document technical function definitions, hierarchies, and interfaces. Develop interim program management systems including a systems engineering management plan, document hierarchy, and work breakdown structure. Incorporate interim results into program-controlled documents. Provide integration support for DOE interactions with the Nuclear Waste Technical Review Board (NWTRB) in conducting	Continue conduct of programmatic functional analyses for 8 key OCRWM external interaction and program management functions. Prepare final program management system manual and systems engineering management plan. Provide communications packages describing programmatic process flow descriptions and programmatic requirements for each key OCRWM technical function. Begin to integrate all OCRWM program functions using computer analysis techniques. Describe management system changes and responsibilities in document hierarchy,	Implement functional analysis results and assign organizational responsibilities through baselined documents. Update Program Management System Manual, Systems Engineering Management Plan, and full program document hierarchy. Integrate technical, cost and schedule baselines with technical and programmatic requirements. Support design and systems engineering of repository, Monitored Retrievable Storage (MRS) and transportation systems. Maintain program requirements database. Identify and define programmatic functional	Continue to implement functional analysis results and assign organizational responsibilities through baselined documents. Update Program Management System Manual, Systems Engineering Management Plan, and full program document hierarchy. Integrate technical, cost and schedule baselines with technical and programmatic requirements. Continue to support design and systems engineering of repository, Monitored Retrievable Storage (MRS) and transportation systems. Maintain program requirements database. Continue to identify	Continue to implement functional analysis results and assign organizational responsibilities through baselined documents. Update Program Management System Manual, Systems Engineering Management Plan, and full program document hierarchy. Integrate technical, cost and schedule baselines with technical and programmatic requirements. Continue to support design and systems engineering of repository, Monitored Retrievable Storage (MRS) and transportation systems. Maintain program requirements database. Continue to identify

III. Systems and Compliance (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Systems Planning and Integration (Cont'd)	information exchanges, responding to technical requests, and preparing for presentations. Initiated development of a computerized system requirements database to maintain all technical and program requirements. Comply with all applicable QA procedures.	work breakdown structure dictionary, and program-controlled baseline documents. Continue providing integration support for DOE interactions with the NWTRB. Prepare interim Interface Controls Document. Begin operation of fully qualified system requirements database. Continue implementation of applicable QA procedures.	interfaces. Incorporate functional interfaces into the computerized database. Support the Nuclear Waste Technical Review Board (NWTRB), including interactions on MRS siting and design issues and Yucca Mountain site studies. Implement applicable QA procedures.	and define programmatic functional interfaces. Incorporate functional interfaces into the computerized database. Continue support for the Nuclear Waste Technical Review Board (NWTRB), including interactions on MRS siting and design issues and Yucca Mountain site studies. Continue to implement applicable QA procedures.	and define programmatic functional interfaces. Incorporate functional interfaces into the computerized database. Continue support for the Nuclear Waste Technical Review Board (NWTRB), including interactions on MRS siting and design issues and Yucca Mountain site studies. Continue to implement applicable QA procedures.
	$ 0	$ 0	$ 4,864	$ 4,864	$ 4,864
Configuration Management	Established and maintained Program Change Control Procedures (PCCP). Provided administrative support for the change control process. Issued status reports. Executed Secretariat function for the OCRWM Change Control Boards (CCBs). Coordinate and conduct program-level CCB to assure full support to the DOE Acquisition Executive. Reviewed document change proposals. Supported controlled document distribution. Prepared record packages. Prepared for audits and verification of usage of up-to-date	Continue to establish and maintain Program Change Control Procedures (PCCP). Provide administrative support for the change control process. Issue status reports. Execute Secretariat function for the OCRWM Change Control Boards (CCBs). Coordinate and conduct program-level CCB to assure full support to the DOE Acquisition Executive. Review document change proposals. Support controlled document distribution. Prepare record packages. Prepare for audits and verification of usage of up-to-date	Maintain the Program Change Control Procedure (PCCP). Provide administrative support for the change control process. Issue status reports. Execute Secretariat function for the OCRWM Change Control Boards (CCBs). Coordinate and conduct program-level CCB to assure full support to the DOE Acquisition Executive. Review document change proposals. Support controlled document distribution. Prepare record packages. Prepare for audits and verification of usage of up-to-date controlled documents.	Continue to maintain the Program Change Control Procedure (PCCP). Continue administrative support for the change control process. Issue status reports. Execute Secretariat function for the OCRWM Change Control Boards (CCBs). Coordinate and conduct program-level CCB to assure full support to the DOE Acquisition Executive. Review document change proposals. Support controlled document distribution. Prepare record packages. Prepare for audits and verification of usage of up-to-date	Continue to maintain the Program Change Control Procedure (PCCP). Continue administrative support for the change control process. Issue status reports. Execute Secretariat function for the OCRWM Change Control Boards (CCBs). Coordinate and conduct program-level CCB to assure full support to the DOE Acquisition Executive. Review document change proposals. Support controlled document distribution. Prepare record packages. Prepare for audits and verification of usage of up-to-date

III. Systems and Compliance (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Configuration Management (Cont'd)	controlled documents. Implemented all applicable QA requirements for all configuration management activities. Developed OCRWM configuration management policy. Prepared OCRWM configuration management plans and procedures. Established functional requirements of a requirements database.	controlled documents. Implement all applicable QA requirements for all configuration management activities. Maintain configuration management documents. Review and provide guidance to program elements to develop configuration management implementation plans and procedures. Develop and maintain requirements database.	Maintain program configuration management plans and procedures. Implement all applicable QA requirements for configuration management activities. Maintain requirements database. Input all requirements from OCRWM documents into the database. Generate updated master list of input sources.	controlled documents. Maintain program configuration management plans and procedures. Continue to implement all applicable QA requirements for configuration management activities. Maintain requirements database. Input all requirements from OCRWM documents into the database. Generate updated master list of input sources.	controlled documents. Maintain program configuration management plans and procedures. Continue to implement all applicable QA requirements for configuration management activities. Maintain requirements database. Input all requirements from OCRWM documents into the database. Generate updated master list of input sources.
	$ 0	$ 0	$ 2,025	$ 2,025	$ 2,025
Regulatory Policy and Requirements	Continue to review project activities to ensure regulatory requirements are met. Prepare documentation for the biannual report prepared to confirm compliance with permit and/or regulatory requirements. Prepare two Environmental Monitoring and Mitigation Progress Reports.	Prepare regulatory guidance documents for MRS, repository, and transportation projects. Develop OCRWM input to proposed regulatory initiatives from NRC, EPA, DOT, and DOE to ensure implementation by MRS, repository, and transportation projects. Conduct Environment, Safety and Health (ES&H) coordination for OCRWM regulatory documents and manage issue resolution activities. Coordinate NEPA compliance activities for all OCRWM projects. Review/ approve all Operations Office NEPA-level de-	Issue regulatory guidance documents for MRS, repository, and transportation projects. Update the documents to facilitate meeting repository and MRS milestones. Develop OCRWM input to proposed regulatory initiatives from NRC, EPA, DOT, and DOE to ensure implementation by MRS, repository, and transportation projects. Conduct Environment, Safety and Health (ES&H) coordination for OCRWM regulatory documents and manage issue resolution activities. Coordinate NEPA compliance activities for all OCRWM	Continue to issue regulatory guidance documents for MRS, repository, and transportation projects. Update the documents to facilitate meeting repository and MRS milestones. Develop OCRWM input to proposed regulatory initiatives from NRC, EPA, DOT, and DOE to ensure implementation by MRS, repository, and transportation projects. Continue Environment, Safety and Health (ES&H) coordination for OCRWM regulatory documents and manage issue resolution activities.	Continue to issue regulatory guidance documents for MRS, repository, and transportation projects. Update the documents to facilitate meeting repository and MRS milestones. Develop OCRWM input to proposed regulatory initiatives from NRC, EPA, DOT, and DOE to ensure implementation by MRS, repository, and transportation projects. Continue Environment, Safety and Health (ES&H) coordination for OCRWM regulatory documents and manage issue resolution activities.

III. Systems and Compliance (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Regulatory Policy and Requirements (Cont'd)		terminations and OCRWM Environmental Assessments (EA's) and Environmental Impact Statements (EIS's). Provide regulatory compliance reviews of MRS and transportation projects. Track Yucca Mountain regulatory compliance. Conduct OCRWM self-assessment program regarding environmental protection, radiological and non-radiological public safety, and occupational safety and health.	projects. Review/approve all Operations Office NEPA-level determinations and OCRWM Environmental Assessments (EA's) and Environmental Impact Statements (EIS's). Provide regulatory compliance reviews of MRS and transportation projects. Track Yucca Mountain regulatory compliance. Conduct OCRWM self-assessment program regarding environmental protection, radiological and non-radiological public safety, and occupational safety and health.	Coordinate NEPA compliance activities for all OCRWM projects. Review/approve all Operations Office NEPA-level determinations and OCRWM EA's and EIS's. Continue to provide regulatory compliance reviews of MRS and transportation projects, and track Yucca Mountain regulatory compliance. Continue OCRWM self-assessment program regarding environmental protection, radiological and non-radiological public safety, and occupational safety and health.	Coordinate NEPA compliance activities for all OCRWM projects. Review/approve all Operations Office NEPA-level determinations and OCRWM EA's and EIS's. Continue to provide regulatory compliance reviews of MRS and transportation projects, and track Yucca Mountain regulatory compliance. Continue OCRWM self-assessment program regarding environmental protection, radiological and non-radiological public safety, and occupational safety and health.
	$ 0	$ 0	$ 2,664	$ 2,664	$ 2,664
Regulatory Integration	Develop materials and participate in meetings with the Nuclear Regulatory Commission (NRC), Advisory Council on Nuclear Waste (ACNW), and others as required. Refine OCRWM licensing strategy. Review and coordinate resolution of licensing issues, including those related to quality assurance, Yucca Mountain site characterization, design and MRS siting.	Maintain liaison with NRC and other DOE components to facilitate resolution of regulatory and licensing issues. Develop materials and participate in meetings with NRC, ACNW, EPA, and others. Prepare protocols, coordinate interactions, and assure the accuracy of meeting minutes. Provide technical and regulatory reviews of documents affecting the	Review NRC licensing process documents as they relate to MRS volunteer siting, Environmental Impact Statement (EIS)/License Application (LA), and Yucca Mountain surface-based testing. Maintain interaction with NRC for resolution of issues concerning MRS and repository licensing. Develop and coordinate DOE petitions for licensing-related	Continue review of NRC licensing process documents as they relate to MRS volunteer siting, Environmental Impact Statement (EIS)/License Application (LA), and Yucca Mountain surface-based testing. Continue interaction with NRC for resolution of issues concerning MRS and repository licensing. Continue development and coordination of DOE	Continue review of NRC licensing process documents as they relate to MRS volunteer siting, Environmental Impact Statement (EIS)/License Application (LA), and Yucca Mountain surface-based testing. Continue interaction with NRC for resolution of issues concerning MRS and repository licensing. Continue development and coordination of DOE

III. Systems and Compliance (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Regulatory Integration (Cont'd)		licensing process. Begin developing policy guidance for alternative licensing strategies. Develop and coordinate petitions for rulemaking. Coordinate the development and negotiation of Memoranda of Understanding (MOU) concerning regulatory compliance. Develop guidance for program safeguards/security and provide oversight of implementation and activities concerning safeguards/security.	rulemaking, and manage development and negotiation of MOU's and Procedural Agreements to support repository and MRS milestones. Begin preparation of annotated outlines for license application under 10CFR60 (repository) and 10CFR72 (MRS). Develop nuclear safeguards/security program under 10CFR75.	petitions for licensing-related rulemaking, and manage development and negotiation of MOU's and Procedural Agreements to support repository and MRS milestones. Continue preparation of annotated outlines for repository license application under 10CFR60. Coordinate preparation of MRS license application under 10CFR72. Conduct oversight of nuclear safeguards/security program.	petitions for licensing-related rulemaking, and manage development and negotiation of MOU's and Procedural Agreements to support repository and MRS milestones. Continue preparation of annotated outlines for repository license application under 10CFR60. Coordinate update of MRS license application under 10CFR72. Conduct oversight of nuclear safeguards/security program.
	$ 0	$ 0	$ 2,664	$ 2,664	$ 2,664
Systems and Compliance	$ 0	$ 0	$ 19,599	$ 19,599	$ 19,599

DEPARTMENT OF ENERGY
FY 1993 CONGRESSIONAL BUDGET REQUEST
NUCLEAR WASTE FUND
(dollars in thousands)

KEY ACTIVITY SUMMARY

NUCLEAR WASTE FUND

I. Preface: Program Management and Technical Support

This activity includes: 1) Program Management (Federal salaries, benefits, and travel), 2) Contractual Services (administrative support costs, including office space, printing, telecommunications, and computer-related services), and, 3) Technical Support (Nuclear Waste Fund audit services, external relations activites, strategic planning, international program oversight, quality assurance (QA), radioactive waste management graduate fellowship and Historically Black College and University (HBCU) programs, and other support services).

The FY 1993 request for PMTS supports the direction of the overall program, which includes: 1) focus on the surface-based testing (SBT) program at the Yucca Mountain candidate site; 2) waste acceptance at an MRS facility; and, 3) development of the transportation system in time to support the start of MRS operation.

II. A. Summary Table: Program Management and Technical Support

Program Activity	FY 1991 Enacted	FY 1992 Enacted	FY 1993 Request	% Change	FY 1994 Request	FY 1995 Request
Program Management	$ 17,236	$ 17,556	$ 18,276	+ 4	$ 18,276	$ 18,276
Technical Support	27,490	35,259	29,311	- 17	29,311	29,311
Contractual Services and Supplies	6,644	6,798	6,772	0	6,772	6,772
Total, Program Management and Technical Support	$ 51,370	$ 59,613	$ 54,359	- 9	$ 54,359	$ 54,359

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Program Management and Technical Support					
Program Management	Oversaw first repository site characterization work, including management of site suitability, surface-based testing, exploratory shaft design, and review of geologic and hydrologic data. Continued liaison with the State of Nevada, and local governments. Continued extensive, in-depth interactions with NRC on licensing matters. Provided geoscience support to the in-situ testing program. Continued near-field environment testing and modeling in support of site investigation. Continued limited barrier material testing and modeling in support of performance assessment. Began repository-related support of performance assessment.	Oversee first repository site investigation work, including management of new surface-based testing (SBT) to optimize early site suitability evaluation and hydrologic considerations, ESF evaluation and design, and review of geologic and hydrologic data. Provide geoscience support to the in-situ testing program. Continue liaison with the State of Nevada, and local governments. Continue extensive, in-depth interactions with NRC on licensing matters to facilitate early issue closure. Continue near-field environment testing and modeling in support of site investigation. Continue limited barrier material testing and modeling in support of performance assessment (PA), focus on putting in place the necessary PA tools.	Oversee first repository full-scale SBT and ESF site preparation at Yucca Mountain, and supporting activities to ensure early determination of site suitability. Continue repository-related support and complete Title II design for first access buildings and surface structures. Manage site preparation and surface facilities construction at first access. Continue liaison with the State of Nevada and local governments. Continue interactions with the NRC on licensing matters. Oversee resource management program administrative activities at the Yucca Mountain Site Characterization Project Office (YMPO).	Oversee first repository site characterization work, including management of full-scale SBT and ESF construction at Yucca Mountain, and geological and hydrological investigations. Provide geoscience support to the in-situ testing program. Continue liaison with the State of Nevada and local governments. Continue interactions with the NRC on licensing matters. Oversee resource management program administrative activities at YMPO.	Oversee first repository site characterization work, including management of full-scale SBT and ESF construction at Yucca mountain, and geological and hydrological investigations. Provide geoscience support to the in-situ testing program. Continue liaison with the State of Nevada and local governments. Continue interactions with the NRC on licensing matters. Oversee resource management program administration activities at YMPO.

III. Program Management and Technical Support (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Program Management (Cont'd)	Continued to oversee, manage, and report on progress made in the implementation of a quality assurance program. This program provides assurances to OCRWM management that the technical activities are conducted in such a way as to appropriately address those issues relating to public health and safety and the protection of the environment and meet the licensing requirements established by the NRC. Initiated procedures to develop a Quality Concerns Program. Established and monitored the implementation of the QA administrative procedures and implementing line procedures throughout OCRWM, and took corrective action where needed.	Fully implement a quality assurance program. This program provides assurances to OCRWM management that the technical activities are conducted in such a way as to appropriately address those issues relating to public health and safety and the protection of the environment and meet the licensing requirements established by the NRC. Implement a Quality Concerns Program. Implement QA administrative procedures and implementing line procedures throughout OCRWM, including YMPO, and take corrective action where needed. Conduct audits and surveillances and prepare corrective action reports.	Continue to implement an NRC-approved quality assurance program to ensure that technical activities are being conducted to address public health, safety and environmental issues. Continue the Quality Concerns Program, implementation of the QA administrative procedures, and implementing line procedures. Conduct audits and surveillances and prepare corrective action reports.	Continue to implement an NRC-approved quality assurance program to ensure that technical activities are being conducted to address public health, safety and environmental issues. Continue the Quality Concerns Program, implementation of the QA administrative procedures, and implementing line procedures. Conduct audits and surveillances and prepare corrective action reports.	Continue to implement an NRC-approved quality assurance program to ensure that technical activities are being conducted to address public health, safety and environmental issues. Continue the Quality Concerns Program, implementation of the QA administrative procedures, and implementing line procedures. Conduct audits and surveillances and prepare corrective action reports.

III. Program Management and Technical Support (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Program Management (Cont'd)	Continued MRS development activities. Provided, as requested, siting support to the Nuclear Waste Negotiator. Oversaw from-reactor cask development project, and maintained ongoing transportation program institutional and governmental liaison. Continued transportation operational planning. Managed baseline documents and interfaced with each OCRWM manager. Continued interactions with review boards. Conducted fee adequacy analyses, and prepared the first Annual Acceptance Priority Ranking Report (AAPR). Continued with ACR issue resolution process. Completed developmental work on a Delivery Commitment Schedule.	Manage baseline documents and interface with OCRWM managers. Support MRS siting and design activities. Respond to requests from the Nuclear Waste Negotiator. Obtain information on technology and initiate integration into operational planning. Maintain ongoing transportation program institutional and governmental liaison. Efforts will be focused on developing a shipping capability to support start of MRS operation. Conduct fee adequacy analyses, prepare the second AAPR, and approve/disapprove Delivery Commitment Schedules for spent nuclear fuel and high level waste acceptance from contract holders.	Continue NRC pre-licensing interactions. Oversee the administration of MRS financial assistance. Oversee establishment of a Project Office in the vicinity of the selected MRS site. Prepare and issue final Envirnomental Assessment (EA) for the MRS site. Oversee MRS Title I and Title II design activities. Oversee the annual fee adequacy analysis and the third AAPR, and approve/disapprove Delivery Commitment Schedules for spent nuclear fuel and high-level radioactive waste acceptance from contract holders. Efforts will be focused on developing a shipping capability to support start of MRS operation.	Manage baseline documents and interfaces between each element of the Civilian Radioactive Waste Management System. Continue preparation of MRS License Application (LA). Administer MRS financial assistance. Complete MRS Title II design. Prepare and issue MRS Environmental Impact Statement (EIS) implementation plan. Oversee fee adequacy analysis. Prepare the fourth AAPR and approve/dissapprove Delivery Commitment Schedules for spent nuclear fuel and high-level waste acceptance from contract holders.	Manage baseline documents and interfaces between each element of the Civilian Radioactive Waste Management System. Continue to oversee preparation of MRS License Application (LA), and submit LA to NRC. Administer MRS financial assistance. Complete and issue draft MRS Environmental Impact Statement (EIS). Continue MRS Title II design, incorporating appropriate NRC comments. Oversee fee adequacy analysis. Prepare the fifth AAPR analysis and approve/disapprove Delivery Commitment Schedules for spent nuclear fuel and high level waste acceptance from contract holders.

III. Program Management and Technical Support (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Program Management (Cont'd)	Managed NWF resources. Maintained program cost and schedule baselines, including preparation of budgets, financial documents, and NWF management report. Received matrix support for legal, administrative, financial, environmental, safety, health, and Congressional liaison activities. Oversaw PMS and change control process, provided Executive Secretariat services to the OCRWM Change Control Board. Completed and published revised Project Decision Schedule (PDS). Developed PDS changes and prepared reports to Congress as necessary. Provided full management support services. Managed interactions with GAO and the DOE IG and developed Departmental responses to audit recommendations. Developed and maintained internal control procedures for resource management activities (procurement, personnel, records management, etc.). Completed integration of OCRWM and YMPO management and	Manage NWF resources. Maintain program cost and schedule baselines, including preparation of budgets, financial documents and NWF management report. Receive matrix support for legal, administrative, financial, environmental, safety, and health. Oversee Program Management System (PMS) and change control process, provide Executive Secretariat services to OCRWM Change Control Board. Develop PDS changes and prepare reports to Congress as necessary. Provide management and administrative support services. Oversee resource management program. Manage interactions with GAO and the DOE IG and develop Departmental responses to audit recommendations. Develop and maintain internal control procedures for resource management activities (procurement, personnel, records management, etc.). Manage the activities of the M&O Contractor.	Manage NWF resources and investment portfolio. Prepare annual OCRWM assurance letter to the Secretary. Maintain program cost and schedule baseline, including milestone schedule and tracking systems, preparation of OCRWM budgets, financial documents, and NWF management reports. Develop PDS changes and reports to the Congress as required. Provide management and administrative support services. Oversee resource management program administrative activities. Manage interactions with GAO and DOE IG, and develop Departmental responses to audit recommendations. Maintain internal control procedures for resource management activities. Receive matrix support for legal, administrative, financial, environmental, safety, and health, and Congressional liaison activities. Manage the activities of the M&O Contractor.	Manage NWF resources. Manage NWF investment portfolio. Prepare annual assurance letter to the Secretary. Manage NWF resources and maintain program cost and schedule baselines, including preparation of budgets, financial documents and NWF management reports. Receive matrix support for legal, administrative, financial, environmental, safety, and health, and Congressional liaison activities. Develop PDS changes and reports to Congress as required. Provide management and administrative support services. Manage interactions with GAO and the DOE IG and develop Departmental responses to audit recommendations. Maintain internal control procedures for resource management activities. Manage the activities of the M&O Contractor.	Manage NWF resources. Manage NWF investment portfolio. Prepare annual assurance letter to the Secretary. Maintain program cost and schedule baselines, including preparation of budgets, financial documents and NWF management reports. Receive matrix support for legal, administrative, financial, environmental, safety, and health, and Congressional liaison activities. Develop PDS changes and reports to Congress as required. Provide management and administrative support services. Manage interactions with GAO and the DOE IG and develop Departmental responses to audit recommendations. Maintain internal control procedures for resource management activities. Manage the activities of the M&O Contractor.

III. Program Management and Technical Support (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Program Management (Cont'd)	administrative processes. Managed the activities of the M&O Contractor.				
	Developed and managed external communications policies and plans. Implemented program-wide public education, information and outreach programs. Directed full implementation of university support program. Responded to external inquiries and comments about the OCRWM program-wide. Managed official records. Prepared and submitted the Annual Report to Congress.	Implement program-wide public education, information and outreach programs. Direct full implementation of university support program. Develop and manage external communications policies and plans. Respond to external inquiries and comments about the OCRWM program-wide. Manage high volume of official records. Prepare and submit the Annual Report to Congress.	Continue implementation of public education, information, and outreach programs. Continue implementation of the university support program. Manage external communications. Respond to external inquiries and comments about OCRWM. Prepare and submit the Annual Report to Congress.	Continue implementation of public education, information, and outreach programs. Continue implementation of the university support program. Manage external communications. Respond to external inquiries and comments about OCRWM. Prepare and submit the Annual Report to Congress.	Continue implementation of public education, information, and outreach programs. Continue implementation of the university support program. Manage external communications. Respond to external inquiries and comments about OCRWM. Prepare and submit the Annual Report to Congress.
	Managed program-wide strategic and contingency planning activities. Conducted workshops with affected and interested parties to obtain predecisional input for preparation of a draft Mission Plan Amendment. Developed draft Mission Plan Amendment and issued the document for public comment. Continued interactions with the Office of the Nuclear Waste Negotiator and the National Academy of Sciences. Completed	Manage program-wide strategic and contingency planning activities. Prepare and issue final Mission Plan Amendment, incorporating comments received on the draft. Continue interactions with the Office of the Nuclear Waste Negotiator and the National Academy of Sciences. Implement risk management program. Manage cooperative agreements with foreign waste management programs and	Manage program-wide strategic and contingency planning activities. Revise OCRWM Mission Plan as necessary. Continue interactions with the National Academy of Sciences. Oversee the risk management program. Manage cooperative agreements with foreign waste management programs and conduct interactions with multi-national organizations.	Manage program-wide strategic and contingency planning activities. Revise OCRWM Mission Plan as necessary. Continue interactions with the National Academy of Sciences. Oversee the risk management program. Manage cooperative agreements with foreign waste management programs and conduct interactions with multi-national organizations.	Manage program-wide strategic and contingency planning activities. Revise OCRWM Mission Plan as necessary. Continue interactions with the National Academy of Sciences. Oversee the risk management program. Manage cooperative agreements with foreign waste management programs and conduct interactions with multi-national organizations.

III. Program Management and Technical Support (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Program Management (Cont'd)	planning for risk management program and conducted training for personnel. Managed cooperative agreements with foreign waste management programs and conducted interactions with multi-national organizations.	conduct interactions with multi-national organizations.			
	225.0 FTE $ 17,236	258.0 FTE $ 17,556	258.0 FTE $ 18,276	258.0 FTE $ 18,276	258.0 FTE $ 18,276
Technical Support	Continued support of independent financial audit activities and fund management activities. Conduct fee adequacy analyses and prepare the Annual Acceptance Priority Ranking Report (AAPR). Approve/disapprove delivery commitment schedules for spent nuclear fuel and high level nuclear waste from contract holders.	Continue support of independent financial audit activities and fund management activities. Conduct fee adequacy analyses and prepare the Annual Acceptance Priority Ranking Report (AAPR). Approve/disapprove delivery commitment schedules for spent nuclear fuel and high level waste from contract holders.	Manage independent financial and compliance audit of the Nuclear Waste Fund. $ 300 Note: Beginning in FY 1993, fee verification activities have been moved to the Transportation and Waste Acceptance decision unit.	Continue to manage independent financial and compliance audit of the Nuclear Waste Fund. $ 300	Continue to manage independent financial and compliance audit of the Nuclear Waste Fund. $ 300
	$2,625	$2,739			

III. Program Management and Technical Support (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Technical Support (Cont'd)	Provided technical support and coordination of program interactions with the Nuclear Waste Technical Review Board and Onsite Representative. Continued cooperative activities with national organizations. Supported development and implementation of program-wide public education, information and outreach programs. Continued support of the Fellowship and HBCU programs. Developed materials for presentations to NRC, NWTRB, American Committee on Rad Waste Disposal (ACORD), technical societies and international conferences. Managed program-wide participation in technical conferences and symposia; interfaced with technical and industry groups to coordinate OCRWM participation in and planning of symposia. Managed program-wide scientific and technical information inventory and dissemination policies and procedures and publications procedures. Planned and participated in national and	Begin development of a long-term education strategy. Initiate an active education program, including teacher training and curriculum development activities. Continue support of Fellowship and HBCU programs. Plan and participate in national teacher/educator workshops. Develop materials for presentations to Congress, NARUC, ACORD, technical societies and international conferences. Continue to manage program-wide scientific and technical information inventory and dissemination policies and publication procedures. Continue to manage program-wide national exhibits. Participate in international exchange of information on outreach and education programs. Continue to provide funds for the National Conference of State Legislatures (NCSL), and National Congress of American Indians (NCAI) and provide new funding for the League of Women Voters. Continue outreach with new groups. Continue to	Continue development of long-term education strategy. Continue support for education programs, including expansion of Nevada programs, as well as teacher training and curriculum development activities. Continue support of Fellowship and HBCU programs and initiate junior faculty support program. Plan and participate in national and international teacher/educator workshops. Develop materials for presentations to Congress, NARUC, ACORD, technical societies and international conferences. Continue to manage program-wide scientific and technical information inventory and dissemination policies and publication procedures. Continue to manage program-wide national exhibits. Participate in international exchange of information on outreach and education programs. Continue to provide funds for the National Conference of State Legislatures (NCSL), and National Congress of American Indians (NCAI), and the	Continue development of long-term education strategy. Continue support for education programs, including expansion of Nevada programs and inclusion of education in the MRS area, as well as teacher training/ education activities. Continue support of Fellowship and HBCU programs and junior faculty support program. Plan and participate in national and international teacher/educator workshops. Develop materials for presentations to Congress, NARUC, ACORD, technical societies and international conferences. Continue to manage program-wide scientific and technical information inventory and dissemination policies and publication procedures. Continue to manage program-wide national exhibits programs. Continue to participate in international exchange of information on outreach and education programs. Continue to provide funds for the National Conference of State Legislatures (NCSL), and National	Continue development of long-term education strategy. Continue support for education programs, including expansion of Nevada programs and inclusion of education in the MRS area, as well as teacher training and curriculum development activities. Continue support of Fellowship and HBCU programs and junior faculty support program. Continue to plan and participate in national and international teacher/educator workshops. Continue to develop materials for presentations to Congress, NARUC, ACCORD, technical societies and international conferences. Continue to manage program-wide scientific and technical information inventory and dissemination policies and publication procedures. Continue to manage program-wide national exhibits programs. Continue to participate in international exchange of information on outreach and education programs. Continue to provide funds for the National Conference of

III. Program Management and Technical Support (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Technical Support (Cont'd)	international teacher/educator workshops. Managed a program-wide national exhibits program. Participated in international exchange of information on outreach and education programs. These activities utilized $1,920K of prior-year unobligated funds. $2,545	integrate technical/institutional programs. Continue to coordinate socioeconomic research. Manage program-wide participation in International High-level Radioactive Waste Conference and other technical conferences and symposia. Continue policy coordination of PETT and other financial grant programs. Interface with technical and working groups to coordinate OCRWM participation in planning of symposia. Initiate Director's forum. Administers OCRWM-wide Headquarters security program for classified documents and information. $3,851	League of Women Voters. Continue outreach with new groups. Continue to integrate technical/institutional programs. Continue to coordinate socioeconomic research. Continue to manage program-wide participation in International High-level Radioactive Waste Conference and other technical conferences and symposia. Continue policy coordination of PETT, including PETT appeals, and other financial grant programs. Interface with technical and industry groups to coordinate OCRWM participation in planning of symposia. Continue Director's forum. Administers OCRWM-wide Headquarters security program for classified documents and information. $4,673	Congress of American Indians (NCAI), the League of Women Voters, and initiate funding for regional groups. Continue outreach with new groups. Continue to manage technical and institutional programs. Continue to coordinate socioeconomic research. Continue to manage program-wide participation in International High-level Radioactive Waste Conference and other technical conferences and symposia. Continue policy coordination of PETT and other financial grant programs. Interface with technical and industry groups to coordinate OCRWM participation in planning of symposia. Continue Director's forum. Administers OCRWM-wide Headquarters security program for classified documents and information. $4,673	State Legislatures (NCSL), and National Congress of American Indians (NCAI), the League of Women Voters, and regional groups. Continue outreach with new groups. Continue to manage and integrate technical and institutional programs. Continue to coordinate socioeconomic research. Continue to manage program-wide participation in International High-level Radioactive Waste Conference and other technical conferences and symposia. Continue policy coordination of PETT and other financial grant programs. Interface with technical and industry groups to coordinate OCRWM participation in planning of symposia. Continue Director's forum. Administers OCRWM-wide Headquarters security program for classified documents and information. $4,673

III. Program Management and Technical Support (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Technical Support (Cont'd)	Consistent with increasing program pace for MRS, continued to provide program technical support and integration efforts to assist OCRWM in planning and reviewing activities associated with the waste management/disposal system. These activities utilized $4,677K of prior-year unobligated funds. $12,930	Continue to provide program technical support and integration efforts to assist OCRWM in planning and reviewing activities associated with the waste management/disposal system. $15,123	Continue to provide program technical support and integration efforts to assist OCRWM in planning and reviewing activities associated with the waste management/disposal system. $9,544	Continue to provide program technical support and integration efforts to assist OCRWM in planning and reviewing activities associated with the waste management/disposal system. $9,544	Continue to provide program technical support and integration efforts to assist OCRWM in planning and reviewing activities associated with the waste management/disposal system. $9,544
	As a result of schedule delay in LSS, procurement funds were provided for closeout of original contract. $340	LSS activities deferred. $0	LSS activities deferred. $0	LSS activities deferred. $0	LSS activities deferred. $0
	Continued funding support for development, implementation, management and operation of the program-wide Information Resource Management Program. These activities utilized $3,960K of prior-year unobligated funds. $5,700	Continue funding support for development, implementation, management, and operation of the program-wide Information Resource Management (IRM) Program, including backlog processing and technical data management. $9,512	Continue funding support for development, implementation, management, and operation of the program-wide Information Resource Management (IRM) Program. Develop screening criteria for all program information and backlog. Complete redesign of information streams to process all program information and records.	Continue funding support for development, implementation, and operation of the program-wide IRM Program. Procure, install, and operate equipment for information streams system that includes optical stage juke boxes and upgrade of wide area and local area networks. Continue processing backlog. Implement new local records as required. $9,881	Continue funding support for development, implementation, and operation of the program-wide Information Resource Management (IRM) Program. Continue enhancements and upgrades to information stream equipment, telecommunications, and operations to accommodate processing information flows through the OCRWM program.

III. Program Management and Technical Support (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Technical Support (Cont'd)			$9,881		$9,881
	Provided funding to support the centralized oversight and management of enhanced program-wide QA activities. This activity utilized $1,000K of prior-year unobligated funds. $2,000	Continue to provide centralized oversight management of program-wide QA implementation activities. $2,739	Continue support and implementation of the QA program, which is required by the NRC for licensing of a repository and MRS, to ensure that OCRWM activities are executed in a manner which protects public health, safety, and the environment. Successful QA implementation includes assurance that all personnel are qualified and adequately trained at the locations where the work is performed. Continue development and maintenance of QA documents. Continue internal and external verification, the QA concerns program, and the corrective action program. $ 2,739	Continue support and implementation of the QA program, which is required by the NRC for licensing of a repository and MRS, to ensure that OCRWM activities are executed in a manner which protects public health, safety, and the environment. Successful QA implementation includes assurance that all personnel are qualified and adequately trained at the locations where the work is performed. Continue development and maintenance of QA documents. Increase internal and external verification, consistent with increase in technical support activities. Continue the QA concerns program and the corrective action program. $ 2,739	Continue support and implementation of the QA program, which is required by the NRC for licensing of a repository and MRS, to ensure that OCRWM activities are executed in a manner which protects public health, safety, and the environment. Successful QA implementation includes assurance that all personnel are qualified and adequately trained at the locations where the work is performed. Continue development and maintenance of QA documents. Increase internal and external verification, consistent with increase in technical support activities. Continue the QA concerns program and the corrective action program. $ 2,739

III. Program Management and Technical Support (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Technical Support (Cont'd)	Continued technical and management support for cooperative multi-national activities applicable to OCRWM. Continued review of foreign waste management activities. Supported review and refinement of program-wide strategic and contingency planning, including development of a draft Mission Plan Amendment. Supported development of risk management program. Supported interactions with the Office of the Nuclear Waste Negotiator. Provided funds to support National Academy of Sciences (NAS) reviews. $1,350	Continue technical and management support for cooperative multi-national activities applicable to OCRWM. Continue review of foreign waste management activities. Support review and refinement of program-wide strategic and contingency planning, including development of a final Mission Plan Amendment. Support implementation of risk management program. Support interactions with Office of the Negotiator. Provide funds to support NAS reviews. $1,255	Continue strategic and contingency planning to meet ad-hoc requirements. Meet Departmental requirements for strategic planning. Oversee the international programs to maintain current knowledge of developments in foreign high-level nuclear waste management programs and to disseminate this knowledge within the U.S. program. Provide funds to the National Academy of Sciences for special studies at OCRWM's request. Continue support interactions with multi-national organizations. $ 2,174	Continue technical and management support for cooperative multi-national activities applicable to OCRWM. Continue review of foreign waste management activities. Support review and refinement of program-wide strategic and contingency planning, including development of needed further revisions to the Mission Plan. Support implementation of risk management program. Provide funds to support NAS reviews. $ 2,174	Continue technical and management support for cooperative multi-national activities applicable to OCRWM. Continue review of foreign waste management activities. Support review and refinement of program-wide strategic and contingency planning, including development of needed further revisions to the Mission Plan. Support implementation of risk management program. Provide funds to support NAS reviews. $ 2,174
	$ 27,490	$ 35,259	$ 29,311	$ 29,311	$ 29,311
Contractual Services and Supplies	Continued administrative support services, including employee development, printing, reproduction, office space, equipment rental, postage, telecommunications, materials, supplies, and ADP/MIS technical support. Continued mainframe use, time-sharing data	Continue administrative support services, including employee development, printing, reproduction, office space, equipment rental, postage, telecommunications, materials, supplies, and ADP/MIS technical support. Continue additional mainframe use, timesharing data	Continue administrative support services, including employee development, printing, reproduction, office space, equipment rental, postage, telecommunications, materials, supplies, and ADP/MIS technical support. Continue additional mainframe use, time-sharing data prepara-	Continue administrative support services including employee development, printing, reproduction, office space, equipment rental, postage, telecommunications, materials, supplies, and ADP/MIS technical support. Continue additional mainframe use, timesharing data	Continue administrative support services including employee development, printing, reproduction, office space, equipment rental, postage, telecommunications, materials, supplies, and ADP/MIS technical support. Continue additional mainframe use, timesharing data

III. Program Management and Technical Support (Cont'd):

Program Activity	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Contractual Services and Supplies (Cont'd)	preparation support, and continued upgrade of workstation and MIS software.	preparation support, and continue upgrade of workstation and MIS software.	tion support, and continued upgrade of workstation and MIS software. NOTE: In an effort to manage administrative costs more closely, the OCRWM Director's share of FTE-dependent costs for space, supplies, and telecommunications are included in this budget and will be transferred during the execution year.	preparation support, and continue upgrade of workstation and MIS software.	preparation support, and continue upgrade of workstation and MIS software.
	$ 6,644	$ 6,798	$ 6,772	$ 6,772	$ 6,772
Program Management and Technical Support	225.0 FTE $ 51,370	258.0 FTE $ 59,613	258.0 FTE $ 54,359	258.0 FTE $ 54,359	258.0 FTE $ 54,359