

DEPARTMENT OF ENERGY
FY 1990 CONGRESSIONAL BUDGET REQUEST
OFFICE OF ENERGY RESEARCH
OVERVIEW

MULTIPROGRAM ENERGY LABORATORIES-FACILITIES SUPPORT

Attainment of the energy R&D goals articulated in the National Energy Policy Plan (NEPP) involves significant use of the five DOE national laboratories supported by Energy Research. These are: Argonne National Laboratory (ANL), Brookhaven National Laboratory (BNL), Lawrence Berkeley Laboratory (LBL), Oak Ridge National Laboratory (ORNL), and Pacific Northwest Laboratory (PNL). DOE has a statutory responsibility to maintain the well-being of the national resource which these five laboratories represent. The replacement value of the facilities at these laboratories is \$2.8 billion and they perform over \$1 billion per year of mission R&D for the Department.

The MEL-FS program objective is to maintain the capabilities of these laboratories. This is accomplished by supporting activities and projects which counter the problems of (1) aging and obsolescence of facilities, (2) environmental noncompliance, and (3) safety and health inadequacies. The program is fully integrated with the Department's institutional planning process which overviews the overall management and utilization of the multiprogram laboratories.

The strategy of the program is to select and support projects necessary: (1) to maintain operations of the laboratories in a safe, cost effective, and productive manner; and (2) to reduce the backlog of facility deficiencies. Budgetary constraints, being experienced throughout the entire Federal government, have necessitated the selection and support of projects critical to safe operation and necessary to ensure continued laboratory viability, e.g., utility replacements and upgrades.

The benefits to be gained by supporting the levels in this budget request are: uninterrupted operation of the laboratories; decreased operating costs; improved safety, security, health and environmental compliance levels; and improved productivity.

The program consists of two subprograms. The General Purpose Facilities subprogram originated in FY 1981 as a broad program for rehabilitation, upgrade or replacement of deficient buildings, utilities, roads, railroads and other facilities at the laboratories. The Environmental Compliance-ORNL subprogram originated in FY 1985 to address Energy Research environmental deficiencies at ORNL.

DEPARTMENT OF ENERGY
 FY 1990 CONGRESSIONAL BUDGET REQUEST
 OFFICE OF ENERGY RESEARCH
 (dollars in thousands)

LEAD TABLE

Multiprogram Energy Laboratories - Facilities Support

Activity	FY 1988 Actual	FY 1989 Estimate	FY 1990 Base	FY 1990 Request	Program Change Request vs Base	
					Dollar	Percent
General Purpose Facilities						
Construction.....	\$28,500	\$31,255	\$31,255	\$32,497	+ 1,242	+ 4%
Environmental Compliance-ORNL						
Operating.....	12,900	8,770	8,770	9,000	+ 230	+ 3%
Capital Equipment.....	400	305	305	0	- 305	- 100%
Construction.....	11,800	15,400	15,400	11,500	- 3,900	- 25%
Subtotal.....	25,100	24,475	24,475	20,500	- 3,975	- 16%
Total.....	\$53,600	\$55,730	\$55,730	\$52,997	- 2,733	- 5%
Operating.....	(\$12,900)	(\$8,770)	(\$8,770)	(\$9,000)	+ 230	+ 3%
Capital Equipment.....	(400)	(305)	(305)	0	- 305	- 100%
Construction.....	(40,300)	(46,655)	(46,655)	(43,997)	- 2,658	- 6%

Authorization: Section 647, P.L. 95-91.

DEPARTMENT OF ENERGY
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 ENERGY SUPPLY RESEARCH AND DEVELOPMENT
 (dollars in thousands)

SUMMARY OF CHANGES

Multiprogram Energy Laboratories - Facilities Support

FY 1989 Appropriation.....	\$ 55,730
- Continue with environmental safety and health projects at various locations for the General Purpose Facilities subprogram.....	+ 3,000
- Continue and/or complete ongoing projects, including those postponed from FY 1989.....	- 3,176
- Maintain Environmental Compliance operating expenses.....	+ 230
- Reduce general plant projects for ORNL Environmental Compliance subprogram	- 1,500
- Continue project 88-R-830 for liquid low level waste collection and transfer system upgrade.....	- 1,287
FY 1990 Congressional Budget Request.....	<u>\$ 52,997</u>

DEPARTMENT OF ENERGY
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ENERGY SUPPLY RESEARCH AND DEVELOPMENT
OFFICE OF ENERGY RESEARCH
(dollars in thousands)

KEY ACTIVITY SUMMARY

MULTIPROGRAM ENERGY LABORATORIES - FACILITIES SUPPORT

I. Preface: General Purpose Facilities

This subprogram originated in FY 1981 as a broad program for rehabilitation, upgrade or replacement of deficient buildings, utilities, roads, railroads and other facilities at the laboratories. The backlog of deficiencies is currently estimated at \$700 million at the five multiprogram energy laboratories. These Government-owned sites are complete research reservations with advanced major scientific instrumentation and exceptional, often unique, research facilities with all necessary support facilities. These laboratories have performed national research programs for the Department and its predecessor agencies for nearly 40 years. They received over \$1,000,000,000 in FY 1986 to perform national research and development programs. Over 17,000 scientists, engineers and other support staff are engaged in these activities. The productivity of the work force is greatly affected by the adequacy of the laboratories facilities.

The replacement costs of the existing government owned support facilities at the multiprogram energy laboratories exceed \$2,800,000,000. Through continuous use and aging, as well as changing technology, these facilities deteriorate (both physically and in performance) to a point where they are no longer appropriate for their intended functions, economically justifiable to maintain, or adequate to meet security, environmental, safety, and health requirements. This program addresses the backlog of facility needs in a prioritized and systematic manner. Highest priority is assigned to those projects that address urgent environmental, safety, health and security deficiencies and those that can hamper or interrupt operations. The latter is primarily concerned with utilities - electrical, heating and cooling, water supply, waste disposal, etc. Next highest priority are those projects that concern efficiency and productivity of operations, such as providing adequate laboratory space, warehouse and shop facilities. Facility upgrade plans and all proposed projects and subprojects are consistent with the Institutional Plans and Site Development Plans for these laboratories.

This program will help ensure the continued effective accomplishment of the Department's R&D missions today and in the future. The Multiprogram Energy Laboratories-Facilities Support program is an appropriate Federal role reflecting the responsible management of the Government's real property.

II. A. Summary Table

Program Activity	FY 1988	FY 1989	FY 1990	% Change
General Purpose Facilities...	\$ 28,500	\$ 31,255	\$ 32,497	+ 4

II. B. Major Laboratory and Facility Funding

Argonne National Laboratory....	\$ 9,598	\$ 9,010	\$ 9,028	--
Brookhaven National Laboratory.	1,663	6,000	9,600	+ 60
Hanford Engineering Development Laboratory*.....	575	375	0	- 100
Idaho National Engineering Lab*.	380	490	399	- 19
Lawrence Berkeley Laboratory....	6,190	7,848	7,137	- 9
Lawrence Livermore Nat. Lab*....	150	312	0	- 100
Oak Ridge National Laboratory..	9,004	4,560	4,165	- 9
Pacific Northwest Laboratory...	940	2,660	2,168	- 19
Total.....	\$ 28,500	\$ 31,255	\$ 32,497	+ 4

* This program is no longer responsible for these laboratories, but is committed to completing any projects it started at these laboratories under its previous responsibility. These labs are now the responsibility of DOE Defense Programs and Nuclear Energy.

III. Activity Descriptions

Program Activity	FY 1988	FY 1989	FY 1990
Construction	Continues fourteen previously started projects consistent with planned schedules (\$22,730). Allows for nine	Will provide for continuation of 19 ongoing projects (\$25,860) consistent with planned schedules and initiation	Will provide for continuation of 12 ongoing projects and 11 postponed projects (\$29,497) consistent with

III. General Purpose Facilities (Cont'd)

Program Activity

Construction (Cont'd)	new starts, including five environmental related projects, one fire safety project, two utility upgrade projects, and one building rehabilitation project. Project summaries are provided in Section III below.(\$5,770)	of 5 new projects: 2 environmental related projects, 1 road safety project, 1 fire protection project, and 1 utility project. (\$5,395)	planned schedules and initiation of 5 environmental safety and health projects. (\$3,000)
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Total General Purpose Facilities	\$ 28,500	\$31,255	\$32,497
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I. Preface: Environmental Compliance-ORNL

The Environmental Compliance subprogram originated in FY 1985 to address environmental deficiencies at ORNL. These deficiencies relate to: (1) the systems for collecting, processing and disposing of currently generated liquid, gaseous and solid hazardous wastes, and (2) the past disposal of previously generated wastes which are not in compliance with current environmental regulations. The program will upgrade all operational systems except those specific portions assigned to other DOE programs to meet required environmental standards and will perform required remedial actions necessary to clean up environmentally contaminated areas that are related to past Energy Research program activities.

The total estimated cost to ensure environmental compliance of current operating systems is estimated to be \$200,000,000 with most of this being capital funds. A large percentage of these costs (\$125,000,000) relate to liquid waste systems. These include the low-level radioactive waste systems, the process waste systems, the sewer systems, and the storm sewer systems. All operational systems are 40 or more years old and in need of extensive rehabilitation and partial replacement. This FY 1990 budget will provide funds to continue the high priority construction project related to the liquid waste system at ORNL. This is the Low-Level Waste Collection and Transfer System Upgrade (88-R-830, TEC \$35,000,000).

II. A. Summary Table

Program Activity	FY 1988	FY 1989	FY 1990	% Change
Operating				
Upgrade Operational Systems...	\$ 4,600	\$ 4,470	\$ 4,800	+ 7
Remedial Actions.....	8,300	4,300	4,200	- 2
Total Operating.....	12,900	8,770	9,000	+ 3
Capital Equipment.....	400	305	0	- 100
Construction.....	11,800	15,400	11,500	- 25
Total Environmental Compliance-ORNL.....	\$ 25,100	\$ 24,475	\$ 20,500	- 16

II. B. Major Laboratory and Facility Funding

Oak Ridge National Laboratory..	\$ 25,100	\$ 24,475	\$ 20,500	- 16
Total.....	\$ 25,100	\$ 24,475	\$ 20,500	- 16

III. Activity Descriptions

Program Activity	FY 1988	FY 1989	FY 1990
Operating			
Upgrade Operational Systems	Continue characterization and investigation of current waste handling and environmental control systems, and identification of additional capabilities to meet new or changing regulations or minimum acceptable practices. (\$4,600)	Continue FY 1988 activities and implementation of planning and prioritization of identified upgrade activities. (\$4,470)	Continue FY 1989 program at approximately same level of effort. (\$4,800)

II. Environmental Compliance (Cont'd)

Program Activity	FY 1988	FY 1989	FY 1990
Remedial Actions	Continue remedial investigations and feasibility studies on previously contaminated sites, and continue development of a groundwater monitoring system. (\$8,300)	Continue remedial investigations and feasibility studies on previously contaminated sites that are the responsibility of Energy Research, and continue development of groundwater monitoring systems, as needed and perform surveillance, maintenance and repair of Energy Research contaminated facilities. (\$4,300)	Continue remedial investigations and feasibility studies on previously contaminated sites that are the responsibility of Energy Research, and continue development of groundwater monitoring systems, as needed and perform surveillance, maintenance and repair of Energy Research contaminated facilities. (\$4,200)
Subtotal, Operating Expenses	\$ 12,900	\$ 8,770	\$ 9,000
Capital Equipment	Provides equipment needed to support cleanup activities. (\$400)	Provides equipment needed to support cleanup activities. (\$305)	No activity.
Subtotal, Capital Equipment	\$400	\$305	\$0
Construction	Continue the Non-Radiological Process Waste Treatment Facilities Project (86-R-801). (\$7,000)	Complete the ORNL Non-Radiological Process Waste Treatment Facilities Project (86-R-801). (\$1,113)	No activity.
	Start the Low-Level Waste Collection and Transfer Systems Upgrade (88-R-830). (\$4,800)	Continue the ORNL Low-Level Waste Collection and Transfer Systems Upgrade (88-R-830). (\$11,787)	Continue the ORNL Low-Level Waste Collection and Transfer Systems Upgrade (88-R-830). (\$10,500)

II. Environmental Compliance (Cont'd)

Program Activity -----	FY 1988 -----	FY 1989 -----	FY 1990 -----
No Activity.		GPP undertaken to correct current deficiencies in operating systems. (\$2,500)	GPP undertaken to correct current deficiencies in operating systems. (\$1,000)
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Subtotal Construction	\$11,800	\$15,400	\$11,500
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Total Environmental Compliance	\$25,100	\$24,475	\$20,500
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Total Multiprogram Energy Laboratories - Facilities Support	\$53,600	\$55,730	\$52,997
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DEPARTMENT OF ENERGY
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 ENERGY SUPPLY RESEARCH AND DEVELOPMENT
 (dollars in thousands)

KEY ACTIVITY SUMMARY

CONSTRUCTION PROJECTS

Multiprogram Energy Laboratories - Facilities Support

IV. Construction Project Summary

<u>Project No.</u>	<u>Project Title</u>	<u>Total Prior Year Obligations</u>	<u>FY 1989 Appropriated</u>	<u>FY 1990 Request</u>	<u>Unappropriated Balance</u>	<u>TEC</u>
Multiprogram Energy Laboratories - General Purpose Facilities (MEL-GPF)						
90-R-119	Laboratory Wastewater Treatment Plant Improvements (ANL)	0	0	500	6,140	6,640
90-R-118	Fire Protection Upgrade (ORNL)	0	0	1,340	1,960	3,300
90-R-117	Slope/Seismic Stabilization (LBL)	0	0	500	3,200	3,700
90-R-116	Hazardous Waste Management Project (BNL)	0	0	160	2,240	2,400
90-R-115	Laboratory and Sanitary Sewer Collection System Rehabilitation (ANL)	0	0	500	1,720	2,220
90-R-113	Electrical Systems Upgrade (ORNL) ^{a/}	0	0	855	1,445	2,300
90-R-112	Measurements and Controls Support Facility (ORNL) ^{a/}	0	0	1,100	3,330	4,430

<u>Project No.</u>	<u>Project Title</u>	<u>Total Prior Year Obligations</u>	<u>FY 1989 Appropriated</u>	<u>FY 1990 Request</u>	<u>Unappropriated Balance</u>	<u>TEC</u>
90-R-111	Original Labsite Substation (LBL) ^{a/}	0	0	250	2,700	2,950
90-R-110	Instrumentation Support Laboratory Rehabilitation (LBL) ^{a/}	0	0	200	1,800	2,000
90-R-109	Building Addition (BNL) ^{a/}	0	0	1,700	0	1,700
90-R-108	Central Shops Alteration and Addition (BNL) ^{a/}	0	0	310	1,370	1,680
90-R-107	Boiler Replacement (BNL) ^{a/}	0	0	324	3,196	3,520
90-R-106	Rehabilitation of Domestic and Firewater, Pumping and Storage Systems (ANL) ^{a/}	0	0	150	1,525	1,675
90-R-100	Transportation Facility Replacement (ANL) ^{a/}	0	0	350	3,750	4,100
89-R-113	Environmental Upgrades (BNL) ^{a/}	0	1,500	3,262	4,838	9,600
89-R-112	Replace PCB Transformers (ANL)	0	1,000	1,380	0	2,380
89-R-111	Building Utilities (PNL)	0	600	2,168	232	3,000
89-R-108	Roads and Parking Safety Improvements (ORNL) ^{a/}	0	1,650	870	0	2,520
89-R-102	Fire Protection Improvements Phase III (BNL) ^{a/}	0	645	2,355	0	3,000
88-R-817	Upgrade Fire Protection (ORNL)	770	980	0	0	1,750
88-R-814	Sanitary Sewage Treatment Facility (PNL)	940	2,060	0	0	3,000
88-R-812	Hazardous Waste Handling Facility (LBL) ^{a/}	500	2,800	1,350	0	4,650

<u>Project No.</u>	<u>Project Title</u>	Total Prior Year <u>Obligations</u>	FY 1989 <u>Appropriated</u>	FY 1990 <u>Request</u>	Unappropriated <u>Balance</u>	<u>TEC</u>
88-R-809	Plant Modifications to Comply with EPA Requirements (ANL)	820	1,000	0	0	1,820
88-R-807	Electrical System Rehabilitation Phase I (ANL) ^{a/}	350	1,150	3,000	560	5,060
88-R-806	Environmental Health and Safety Project (LBL) ^{a/}	850	3,003	4,837	1,635	10,325
88-R-805	Environmental Improvements (BNL)	565	1,946	1,489	0	4,000
88-R-804	Building Piping Systems Upgrade (ORNL)	520	1,330	0	0	1,850
88-R-802	Multiprogram Laboratory Building Rehabilitation (BNL)	455	1,445	0	0	1,900
87-R-758	Rehabilitate Mechanical Utilities (LBL)	3,915	1,585	0	0	5,500
87-R-757	Electrical Systems Rehabilitation (LBL)	2,140	460	0	0	2,600
87-R-756	Water Line Replacement (ANL) ^{a/}	2,103	2,560	537	0	5,200
87-R-755	Mechanical Systems Rehabilitation (ANL)	2,700	500	0	0	3,200
87-R-753	Rehabilitate Laboratory Space (ANL) ^{a/}	5,124	2,800	2,611	1,500	12,035
87-R-752	Piping System Restoration (ORNL)	3,200	600	0	0	3,800

<u>Project No.</u>	<u>Project Title</u>	<u>Total Prior Year Obligations</u>	<u>FY 1989 Appropriated</u>	<u>FY 1990 Request</u>	<u>Unappropriated Balance</u>	<u>TEC</u>
86-R-726	Fire Protection Improvements, Phase II (BNL)	2,536	464	0	0	3,000
85-R-707	Hanford Site Fire Alarm System Upgrade (RL)	4,475	375	0	0	4,850
85-R-706	Medical Facilities (LLNL)	6,988	312	0	0	7,300
84-ER-103	Road Repairs (INEL, LBL, RL, ANL) ^{b/}	<u>16,862</u>	<u>490</u>	<u>399</u>	<u>0</u>	<u>17,751</u>
Subtotal, General Purpose Facilities		55,813	31,255	32,497	43,141	XXX
<u>Environmental Compliance (ORNL)</u>						
90-R-770	General Plant Projects	0	0	1,000	0	1,000
89-R-770	General Plant Projects	0	2,500	0	0	2,500
88-R-830	Liquid Low-Level Collection and Transfer System Upgrade (ORNL)	4,800	11,787	10,500	7,913	35,000
86-R-801	Non-Radiological Process Waste Treatment Project (ORNL)	<u>16,887</u>	<u>1,113</u>	<u>0</u>	<u>0</u>	<u>18,000</u>
Subtotal, Environmental Compliance		<u>21,687</u>	<u>15,400</u>	<u>11,500</u>	<u>7,913</u>	<u>XXX</u>
Total, MEL-FS		<u>\$ 77,500</u>	<u>\$ 46,655</u>	<u>\$ 43,997</u>	<u>\$51,054</u>	<u>XXX</u>

^{a/} A reprogramming for FY 1989 is in process for these projects. This FY 1990 budget has been prepared assuming that the reprogramming will be approved.

^{b/} This program is no longer responsible for INEL, but is committed to completing any projects it started at this laboratory under its previous responsibility. This lab is the responsibility of Defense Programs.

FY 1990 CONGRESSIONAL BUDGET REQUEST
ENERGY SUPPLY RESEARCH AND DEVELOPMENT
(dollars in thousands)

KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

Multiprogram Energy Laboratories - Facilities Support
General Purpose Facilities

1. Project title and location: 90-R-119 Laboratory Wastewater Treatment Plant Improvements
Argonne National Laboratory
Argonne, Illinois
- Project TEC: \$ 6,640
Start Date: FY 1990
Completion Date: FY 1992

2. Financial schedule:

<u>Fiscal Year</u>	<u>Appropriated</u>	<u>Obligations</u>	<u>Costs</u>
1990	\$ 500	\$ 500	\$ 500
1991	2,000	\$2,000	\$1,600
1992	4,140	\$4,140	\$4,540

3. Narrative:

- (a) Rehabilitation of the existing treatment facilities and additional work will be provided including independent physical, biological, chemical and radioactive waste treatment to obtain removals of organic compounds and heavy metals, and radioactivity.
- (b) Inadequate facilities exist for treatment of radioactivity, biological and chemical deoxygenating wastes, organic compounds and metals. The emergency overflow pond for peak flow discharges is unlined and continued discharge to it could cause harm to the aquatic environment.
- (c) First year funding will provide for completion of architectural/engineering efforts.

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KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

Multiprogram Energy Laboratories - Facilities Support
General Purpose Facilities

1. Project title and location: 90-R-118 Fire protection upgrade
Oak Ridge National Laboratory
Oak Ridge, Tennessee

Project TEC: \$ 3,300
Start Date: FY 1990
Completion Date: FY 1993

2. Financial schedule:

<u>Fiscal Year</u>	<u>Appropriated</u>	<u>Obligations</u>	<u>Costs</u>
1990	\$1,340	\$1,340	\$ 500
1991	1,960	1,960	1,100
1992	0	0	1,500
1993	0	0	200

3. Narrative:

- (a) This project upgrades fire protection and life safety installations in key facilities at the Oak Ridge National Laboratory.
- (b) The lack of automatic fire suppression sprinkler systems in occupied office areas and service areas in the main building wings of the ORNL Central Research and Administration Building presents a serious risk of a multi-million dollar fire loss and major interruption of program activities.
- (c) The first year funding for the project will provide for engineering of the project and preliminary construction activities.

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KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

Multiprogram Energy Laboratories - Facilities Support
 General Purpose Facilities

1. Project title and location: 90-R-117 Slope and Seismic Stabilization Above
 the Bevatron, Building 51, and
 Mechanical Shops, Building 77
 Lawrence Berkeley National Laboratory
 Berkeley, California

Project TEC: \$ 3,700
 Start Date: FY 1990
 Completion Date: FY 1993

2. Financial schedule:

<u>Fiscal Year</u>	<u>Appropriated</u>	<u>Obligations</u>	<u>Costs</u>
1990	\$ 500	\$ 500	\$ 220
1991	2,200	2,200	1,510
1992	1,000	1,000	1,600
1993	0	0	370

3. Narrative:

- (a) This project consists of planning, design and construction of two lateral support systems to stabilize two known landslide areas.
- (b) This project will complete a long-term program at LBL which has succeeded in stabilizing other known landslide areas that could cause significant property damage in the event of a strong earthquake or static movement due to excessive soil moisture.
- (c) First year funding will provide for completion of architectural/engineering efforts.

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KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

Multiprogram Energy Laboratories - Facilities Support
General Purpose Facilities

1. Project title and location: 90-R-116 Hazardous waste management project
Brookhaven National Laboratory
Upton, New York
- Project TEC: \$ 2,400
Start Date: FY 1990
Completion Date: FY 1992

2. Financial schedule:

<u>Fiscal Year</u>	<u>Appropriated</u>	<u>Obligations</u>	<u>Costs</u>
1990	\$ 160	\$ 160	\$ 130
1991	2,240	\$2,240	\$1,250
1992	0	\$ 0	\$1,020

3. Narrative:

- (a) This project is part of a continuing effort to modify existing Hazardous Waste Management Facilities and provide additional facility support in the areas of both radioactive and non-radioactive hazardous waste material processing and storage.
- (b) Modifications and upgrades which will be accomplished under the scope of this project will eliminate several areas of non-conformance with the Environmental Protection Agency (EPA), New York State Department of Environmental Conservation (NYSDEC), and Suffolk County Department of Health Services (SCDHS) regulations.
- (c) First year funding will provide for completion of architectural/engineering efforts.

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(dollars in thousands)

KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

Multiprogram Energy Laboratories - Facilities Support
General Purpose Facilities

1. Project title and location: 90-R-115 Laboratory and Sanitary Sewer
Collection System Rehabilitation
Argonne National Laboratory
Argonne, Illinois

Project TEC: \$ 2,220
Start Date: FY 1990
Completion Date: FY 1992

2. Financial schedule:

<u>Fiscal Year</u>	<u>Appropriated</u>	<u>Obligations</u>	<u>Costs</u>
1990	\$ 500	\$ 500	\$ 450
1991	1,000	\$1,000	\$ 750
1992	720	\$ 720	\$1,020

3. Narrative:

- (a) A program for rehabilitation of all broken and leaking laboratory and sanitary sewers which serve permanent buildings and areas at ANL will be provided. Also, construction of new relief sewers where the capacity is insufficient is proposed.
- (b) Many of the sewers have either collapsed due to bearing load capacity being exceeded, infiltration/inflow from leaky joints or direct storm water tie-in connections, or exhibited hydraulic-limiting flow characteristics from root intrusion and are undersized for future conditions.
- (c) First year funding will provide for completion of architectural/engineering efforts.

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KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

Multiprogram Energy Laboratories - Facilities Support
 General Purpose Facilities

IV. B. Plant Funded Construction Project

1. Project title and location: 90-R-113 Electrical systems upgrade, Oak Ridge National Laboratory (ORNL), Oak Ridge, Tennessee
- Project TEC: \$ 2,300
 Start Date: FY 1989
 Completion Date: FY 1991

2. Financial schedule:

<u>Fiscal Year</u>	<u>Appropriated</u>	<u>Obligations</u>	<u>Costs</u>
1990	\$ 855	\$ 855	\$ 200
1991	\$1,445	\$1,445	\$2,100

3. Narrative:

- (a) This project will replace aged, obsolete, and unreliable equipment and hardware in the ORNL electrical system.
- (b) The purpose of this project is the restoration of deteriorated distribution lines and the replacement of old and obsolete equipment needed to ensure a reliable source of electrical power as well as to meet the demands of the continuing research programs at ORNL.
- (c) \$855,000 is requested for FY 1990 funding. The Architect/Engineering contract will be negotiated and detailed design will be completed. Construction will start late in FY 1990.

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KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

Multiprogram Energy Laboratories - Facilities Support
 General Purpose Facilities

IV. B. Plant Funded Construction Project

1. Project title and location: 90-R-112 Measurements and controls support facility, Oak Ridge National Laboratory (ORNL), Oak Ridge, Tennessee
- Project TEC: \$4,430
 Start Date: FY 1990
 Completion Date: FY 1992

2. Financial schedule:

<u>Fiscal Year</u>	<u>Appropriated</u>	<u>Obligations</u>	<u>Costs</u>
1990	\$1,100	\$1,100	\$ 965
1991	\$3,100	\$3,100	\$1,630
1992	\$ 230	\$ 230	\$1,835

3. Narrative:

- (a) This project will construct a two-story building providing approximately 20,000 sq. ft. in the Instruments and Controls complex.
- (b) The purpose of this project is to provide adequate space and facilities for essential support personnel and functions presently located in a deteriorated wooden building and in converted laboratories and storage rooms in the ORNL complex.
- (c) \$1,100,000 is requested for FY 1990 funding. The Architect/Engineering contract will be negotiated and detailed design will be completed. Construction will start early in FY 1991.

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KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

Multiprogram Energy Laboratories - Facilities Support
 General Purpose Facilities

IV. B. Plant Funded Construction Project

1. Project title and location: 90-R-109 Building addition, Project TEC: \$ 1,700
 Brookhaven National Start Date: FY 1990
 Laboratory (BNL), Completion Date: FY 1991
 Upton, New York

2. Financial schedule:

<u>Fiscal Year</u>	<u>Appropriated</u>	<u>Obligations</u>	<u>Costs</u>
1990	\$1,700	\$1,700	\$800
1991	\$0	\$0	\$900

3. Narrative:

- (a) This project provides for a new two-story building and basement of approximately 12,500 gross sq. ft., a net area of about 9,000 sq. ft. The building will house the Networking, Engineering, and Telecommunication Division of the Applied Mathematics Department.
- (b) The proposed building is to provide appropriate laboratory, operating, office, conference, library, training, and storage space in order to alleviate some of the severe overcrowding and constraint of activities which exist in the existing building due to lack of sufficient space. There are no other suitable alternatives for housing these essential functions.
- (c) Full project funding of \$1,625,000 is requested in FY 1990 to cover detailed design and to contract for construction.

DEPARTMENT OF ENERGY
 FY 1990 CONGRESSIONAL BUDGET REQUEST
 ENERGY SUPPLY RESEARCH AND DEVELOPMENT
 (dollars in thousands)

KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

Multiprogram Energy Laboratories - Facilities Support
 General Purpose Facilities

IV. B. Plant Funded Construction Project

1. Project title and location: 90-R-108 Central shops alteration and addition, Brookhaven National Laboratory (BNL), Upton, New York
- Project TEC: \$ 1,680
 Start Date: FY 1990
 Completion Date: FY 1991

2. Financial schedule:

<u>Fiscal Year</u>	<u>Appropriated</u>	<u>Obligations</u>	<u>Costs</u>
1990	\$310	\$310	\$300
1991	\$1,370	\$1,370	\$1,380

3. Narrative:

- (a) This project provides for the construction of a new building having a gross area of about 11,400 sq. ft. and an approximate volume of 185,000 cubic feet. It will provide for the construction of a new addition to the existing Heavy Machine Shop.
- (b) The Central Shops Division currently has its welding operations contained in various World War II wooden buildings, most of which were not designed for their current use. This project will consolidate these operations into appropriately designed noncombustible facilities which will result in much safer and efficient operations. The existing building will be demolished.
- (c) \$310,000 is requested for FY 1990 funding. During FY 1990 detailed design (by a negotiated Architect/Engineering contractor) will be completed.

DEPARTMENT OF ENERGY
 FY 1990 CONGRESSIONAL BUDGET REQUEST
 ENERGY SUPPLY RESEARCH AND DEVELOPMENT
 (dollars in thousands)

KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

Multiprogram Energy Laboratories - Facilities Support
 General Purpose Facilities

IV. B. Plant Funded Construction Project

1. Project title and location: 90-R-107 Boiler replacement, Project TEC: \$ 3,520
 Brookhaven National Start Date: FY 1990
 Laboratory (BNL), Upton, Completion Date: FY 1992
 New York

2. Financial schedule:

<u>Fiscal Year</u>	<u>Appropriated</u>	<u>Obligations</u>	<u>Costs</u>
1990	\$324	\$324	\$200
1991	\$3,196	\$3,196	\$770
1992	\$0	\$0	\$2,550

3. Narrative:

- (a) This project provides for the installation of a new boiler, of about 125,000 lbs. per hour, at the Central Steam Facility.
- (b) The boiler replacement is required to assure adequate firm capacity to meet the laboratory's 1991 steam demands.
- (c) \$324,000 is requested for FY 1990 funding. During FY 1990 detailed design (by a negotiated Architect/Engineering contractor) will be completed.

DEPARTMENT OF ENERGY
 FY 1990 CONGRESSIONAL BUDGET REQUEST
 ENERGY SUPPLY RESEARCH AND DEVELOPMENT
 (dollars in thousands)

KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

Multiprogram Energy Laboratories - Facilities Support
 General Purpose Facilities

IV. B. Plant Funded Construction Project

1. Project title and location: 90-R-106 Rehabilitation of domestic and firewater, pumping and storage system, Argonne National Laboratory (ANL) Argonne, Illinois
- Project TEC: \$ 1,675
 Start Date: FY 1989
 Completion Date: FY 1992

2. Financial schedule:

<u>Fiscal Year</u>	<u>Appropriated</u>	<u>Obligations</u>	<u>Costs</u>
1990	\$150	\$150	\$150
1991	\$1,000	\$1,000	\$1,000
1992	\$525	\$525	\$525

3. Narrative:

- (a) This project provides for the rehabilitation of eleven surface and elevated water storage tanks and eight pressure filter tanks located throughout the ANL site. This project also provides for rehabilitation of three well water pumps through overhaul of the motors, pump assemblies and line shafts and well castings.
- (b) Present conditions are causing increased maintenance costs and system downtime and having a potential of impairing the laboratory's ability to respond properly to a fire emergency during these downtimes. The well water pumps have operated for 20-35 years. Two of these pumps provide over 50% of the water supply for the laboratory's drinking, fire protection, heating and research process operations. The fire water pump has operated for more than 30 years. Most of the parts are worn out and the housing indicated heavy corrosion.
- (c) \$150,000 is requested for FY 1990 funding. During FY 1990 detailed design (by a negotiated Architect/Engineering contractor) will be completed.

DEPARTMENT OF ENERGY
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 ENERGY SUPPLY RESEARCH AND DEVELOPMENT
 (dollars in thousands)

KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

Multiprogram Energy Laboratories - Facilities Support
 General Purpose Facilities

IV. B. Plant Funded Construction Project

1. Project title and location: 90-R-100 Transportation facility replacement, Argonne National Laboratory (ANL), Argonne, Illinois
- Project TEC: \$ 4,100
 Start Date: FY 1990
 Completion Date: FY 1992

2. Financial schedule:

<u>Fiscal Year</u>	<u>Appropriated</u>	<u>Obligations</u>	<u>Costs</u>
1990	\$350	\$350	\$150
1991	\$1,400	\$1,400	\$1,470
1992	\$2,350	\$2,350	\$2,480

3. Narrative:

- (a) This project will provide a new building to house the activities of the Transportation and Grounds Service groups at ANL's Illinois site. The facility will centralize the Vehicle Maintenance and Repair, Driving and Rigging, and Grounds Maintenance activities into one facility.
- (b) The purpose of this project is to relocate and consolidate the site's Transportation and Grounds Maintenance operations to correct existing facility deficiencies and provide an efficient centralized operational base. All existing facilities which are quonset buildings constructed to serve as temporary quarters during construction of Argonne in 1948 will be demolished.
- (c) \$350,000 is requested for FY 1990 funding. During FY 1990 detailed design (by a negotiated Architect/Engineering contractor) will be completed.

DEPARTMENT OF ENERGY
 FY 1990 CONGRESSIONAL BUDGET REQUEST
 ENERGY SUPPLY RESEARCH AND DEVELOPMENT
 (dollars in thousands)

KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

Multiprogram Energy Laboratories - Facilities Support
 General Purpose Facilities

IV. B. Plant Funded Construction Project

1. Project title and location: 89-R-113 Environmental upgrades, Brookhaven National Laboratory (BNL) Upton, New York
- Project TEC: \$ 9,600
 Start Date: FY 1989
 Completion Date: FY 1992

2. Financial schedule:

<u>Fiscal Year</u>	<u>Appropriated</u>	<u>Obligations</u>	<u>Costs</u>
1989	\$1,500	\$1,500	\$1,000
1990	\$3,262	\$3,262	\$2,500
1991	\$3,000	\$3,000	\$3,062
1992	\$1,838	\$1,838	\$3,038

3. Narrative:

- (a) This project will close a landfill site and stabilize the potential leachate from the area and will remove radioactive sludge as well as holding tanks at a waste processing facility. Decontamination and disposal will be conducted on three 100,000 gallon above ground tanks located at the radioactive liquid waste concentration facility. Environmental monitoring improvement phase of the project is designed to meet changing operational and regulatory needs.
- (b) The purpose of this project is to take action to prevent, control, and abate environmental pollution.
- (c) \$3,262,000 is requested for FY 1990 funding. Construction will start in early FY 1990.

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 ENERGY SUPPLY RESEARCH AND DEVELOPMENT
 (dollars in thousands)

KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

Multiprogram Energy Laboratories - Facilities Support
 General Purpose Facilities

IV. B. Plant Funded Construction Project

1. Project title and location: 89-R-112 Replace PCB Transformers, Argonne National Laboratory (ANL), Argonne, Illinois
- Project TEC: \$ 2,380
 Start Date: FY 1989
 Completion Date: FY 1990

2. Financial schedule:

<u>Fiscal Year</u>	<u>Appropriated</u>	<u>Obligations</u>	<u>Costs</u>
1989	\$1,000	\$1,000	\$600
1990	\$1,380	\$1,380	\$1,780

3. Narrative:

- (a) This project will provide for the replacement of 26 PCB transformers in accordance with an EPA ruling and the low-voltage switchgear associated with one of the transformers.
- (b) The EPA has taken an uncompromising position to PCBs. PCBs are extremely stable compounds which are soluble in the human body and accumulate in human tissue. They are highly suspect in the cause of human cancer.
- (c) \$1,380,000 is requested for FY 1990 funding. Construction will be ongoing and completed in FY 1990.

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 ENERGY SUPPLY RESEARCH AND DEVELOPMENT
 (dollars in thousands)

KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

Multiprogram Energy Laboratories - Facilities Support
 General Purpose Facilities

IV. B. Plant Funded Construction Project

1. Project title and location: 89-R-111 Building utilities,
 Phase I, Pacific Northwest
 Laboratory (PNL),
 Richland, Washington
- Project TEC: \$ 3,000
 Start Date: FY 1989
 Completion Date: FY 1991

2. Financial schedule:

<u>Fiscal Year</u>	<u>Appropriated</u>	<u>Obligations</u>	<u>Costs</u>
1989	\$ 600	\$ 600	\$ 600
1990	\$2,168	\$2,168	\$2,168
1991	\$ 232	\$ 232	\$ 232

3. Narrative:

- (a) This project provides for renovations to existing multiprogram laboratory facilities to correct deficiencies of miscellaneous multiprogram facilities systems, while meeting current standards of health, safety, security, and energy conservation and, at the same time, extending the useful life of the buildings.
- (b) The primary reason for this project is to renovate and extend the useful life of major DOE multiprogrammatic facilities which are critical to the DOE mission at Hanford, and promote safe and efficient operations. This project is necessary to reverse the accelerating damage being inflicted on existing facilities and their building systems and to keep these structures and building service systems from deteriorating further.
- (c) \$2,168,000 is requested for FY 1990 funding. The Architect/Engineering contract will be negotiated, detailed design will be completed, and construction will begin.

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 ENERGY SUPPLY RESEARCH AND DEVELOPMENT
 (dollars in thousands)

KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

Multiprogram Energy Laboratories - Facilities Support
 General Purpose Facilities

IV. B. Plant Funded Construction Project

1. Project title and location: 89-R-108 Roads and parking safety improvements,
 Oak Ridge National Laboratory
 (ORNL), Oak Ridge, Tennessee
- Project TEC: \$ 2,520
 Start Date: FY 1989
 Completion Date: FY 1991

2. Financial schedule:

<u>Fiscal Year</u>	<u>Appropriated</u>	<u>Obligations</u>	<u>Costs</u>
1989	\$1,650	\$1,650	\$400
1990	\$870	\$870	\$1,400
1991	\$0	\$0	\$720

3. Narrative:

- (a) This project will involve a partial reconstruction of Bethel Valley Road which is the primary access road to ORNL.
- (b) This project will mitigate significant deficiencies in safety, function, and capacity by rebuilding, replacing, and adding to selected roads, traffic controls systems, and parking areas.
- (c) Funding of \$870,000 is requested in FY 1990. Construction will be ongoing in FY 1990.

DEPARTMENT OF ENERGY
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 ENERGY SUPPLY RESEARCH AND DEVELOPMENT
 (dollars in thousands)

KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

Multiprogram Energy Laboratories - Facilities Support
 General Purpose Facilities

IV. B. Plant Funded Construction Project

1. Project title and location: 89-R-102 Fire protection improvements (Phase III), Brookhaven National Laboratory (BNL), Upton, New York
- Project TEC: \$ 3,000
 Start Date: FY 1989
 Completion Date: FY 1992

2. Financial schedule:

<u>Fiscal Year</u>	<u>Appropriated</u>	<u>Obligations</u>	<u>Costs</u>
1989	\$645	\$645	\$150
1990	\$2,355	\$2,355	\$800
1991	\$0	\$0	\$1,500
1992	\$0	\$0	\$550

3. Narrative:

- (a) This project provides for the design, fabrication and installation of various fire protection improvements consisting of providing automatic sprinkler protection in facilities designated as high loss potential.
- (b) The purpose of this project is to reduce the risk of loss due to fire at BNL. For this project, only key facilities have been included, such as buildings directly involved in DOE program activities and vital support buildings.
- (c) \$2,335,000 is requested for FY 1990 funding. Construction will start in early FY 1990.

DEPARTMENT OF ENERGY
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 ENERGY SUPPLY RESEARCH AND DEVELOPMENT
 (dollars in thousands)

KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

Multiprogram Energy Laboratories - Facilities Support
 General Purpose Facilities

IV. B. Plant Funded Construction Project

1. Project title and location: 88-R-812 Hazardous Waste Handling Facility Project TEC: \$ 4,650
 Lawrence Berkeley Laboratory (LBL) Start Date: FY 1988
 Berkeley, California Completion Date: FY 1991

2. Financial schedule:

<u>Fiscal Year</u>	<u>Appropriated</u>	<u>Obligations</u>	<u>Costs</u>
1988	\$ 500	\$ 500	\$ 62
1989	2,800	2,800	1,610
1990	1,350	1,350	2,065
1991	0	0	913

3. Narrative:

- (a) This project will provide a remote site for hazardous waste (i.e. radioactive transuranic elements, toxic liquid chemicals and toxic gases) handling. Construction will include a 12,300 gross sq. ft. building and an adjacent handling area.
- (b) The existing facility was constructed as a temporary handling area with the expectation that a permanent facility would be constructed at a later date. In its current location, the facility is in close proximity to large laboratory and off-site personnel as well as main traffic routes. Relocating the facility to a remote site would minimize health and safety effects from a potential release.
- (c) \$1,350,000 is requested for FY 1990 funding. Construction will be ongoing this year.

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 ENERGY SUPPLY RESEARCH AND DEVELOPMENT
 (dollars in thousands)

KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

Multiprogram Energy Laboratories - Facilities Support
 General Purpose Facilities

IV. B. Plant Funded Construction Project

1. Project title and location: 88-R-806 Environmental Health & Safety Project Project TEC: \$10,325
 Lawrence Berkeley Laboratory Start Date: FY 1988
 Berkeley, California Completion Date: FY 1991

2. Financial schedule:

<u>Fiscal Year</u>	<u>Appropriated</u>	<u>Obligations</u>	<u>Costs</u>
1988	\$ 850	\$ 850	\$ 59
1989	3,003	3,003	3,284
1990	4,837	4,837	3,038
1991	1,635	1,635	3,944

3. Narrative:

- (a) This project will consist of several subprojects in the following areas: 1) upgrading and/or installing environmental monitoring equipment (air sampling/monitoring and underground fuel tank monitoring); 2) replacing existing deteriorated safety and health equipment (ventilation improvements and replacing drum storage racks); and 3) installing additional health and safety equipment, facilities and systems (area lighting and chemical storage facility).
- (b) Ensuring healthy, safe and environmentally sound operations is a major goal at LBL. This project is needed to comply with state and national environmental requirements and safety and health standards.
- (c) \$4,837,000 is requested for FY 1990 funding. Construction will be ongoing this year.

DEPARTMENT OF ENERGY
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 ENERGY SUPPLY RESEARCH AND DEVELOPMENT
 (dollars in thousands)

KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

Multiprogram Energy Laboratories - Facilities Support
 General Purpose Facilities

IV. B. Plant Funded Construction Project

1. Project title and location: 88-R-805 Environmental Improvements
 Brookhaven National Laboratory (BNL)
 Upton, New York
- Project TEC: \$ 4,000
 Start Date: FY 1988
 Completion Date: FY 1991

2. Financial schedule:

<u>Fiscal Year</u>	<u>Appropriated</u>	<u>Obligations</u>	<u>Costs</u>
1988	\$ 565	\$ 565	\$ 10
1989	1,946	1,946	1,800
1990	1,489	1,489	1,000
1991	0	0	1,190

3. Narrative:

- (a) Twelve buildings will be connected to the central sanitary sewage system. Construction will include new piping and lift stations. Four buildings will have asbestos insulation removed from duct, piping and equipment and then disposed in a safe and environmentally approved manner. All exposed areas will be re-insulated.
- (b) This project is needed to comply with existing and expected Environmental Protection Agency, Occupational, Safety and Health Act and State Agency regulations and requirements.
- (c) \$1,489,000 is requested for FY 1990 funding. Construction will be ongoing this year.

DEPARTMENT OF ENERGY
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 ENERGY SUPPLY RESEARCH AND DEVELOPMENT
 (dollars in thousands)

KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

Multiprogram Energy Laboratories - Facilities Support
 General Purpose Facilities

IV. B. Plant Funded Construction Project

1. Project title and location: 87-R-756 Water Line Replacement Project TEC: \$ 5,200
 Argonne National Laboratory (ANL) Start Date: FY 1987
 Argonne, Illinois Completion Date: FY 1990

2. Financial schedule:

<u>Fiscal Year</u>	<u>Appropriated</u>	<u>Obligations</u>	<u>Costs</u>
1987	\$ 566	\$ 566	\$ 138
1988	1,537 ^{a/}	1,537 ^{a/}	674
1989	2,560	2,560	2,000
1990	537	537	2,388

3. Narrative:

- (a) This project will rehabilitate deteriorated water lines in three water distribution systems which serve permanent building areas at ANL. The three systems are: 1) domestic/fire water, 2) laboratory water, and 3) canal water. Approximately 18 miles of cast iron water lines will be replaced with polyvinyl chloride (PVC) pipe and reinforced concrete pipe (RCP).
- (b) Existing domestic/fire water system lines are becoming unreliable for fire protection purposes due to soil-side corrossions of the pipes. Pipe breaks are becoming more frequent and are very disruptive to operations. Canal water and laboratory water system lines are co-located with domestic/fire water lines and are heavily scaled reducing their rated flow significantly.
- (c) \$537,000 is requested for FY 1990 funding. Construction will be completed in FY 1990.

^{a/} \$37,000 reprogrammed from prior year closed out projects.

DEPARTMENT OF ENERGY
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 (dollars in thousands)

KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

Multiprogram Energy Laboratories - Facilities Support
 General Purpose Facilities

IV. B. Plant Funded Construction Project

1. Project title and location: 87-R-753 Rehabilitate Laboratory Space
 Argonne National Laboratory (ANL)
 Argonne, Illinois
- Project TEC: \$12,035
 Start Date: FY 1987
 Completion Date: FY 1991

2. Financial schedule:

<u>Fiscal Year</u>	<u>Appropriated</u>	<u>Obligations</u>	<u>Costs</u>
1987	\$ 1,235	\$ 1,235	\$ 521
1988	3,889 ^{a/}	3,889 ^{a/}	1,354
1989	2,800	2,800	4,100
1990	2,611	2,611	4,100
1991	1,500	1,500	1,960

3. Narrative:

- (a) This project will renovate six laboratory/office wings (166,000 gross square feet) of Building 200, a multipurpose laboratory and office building in the central part of the ANL site. The project will: 1) replace or upgrade the electrical distribution and lighting systems, the heating, ventilation and air conditioning systems and the plumbing and piping systems; and 2) repair and upgrade the building envelope (especially windows) and building interiors (ceiling, walls and doors).
- (b) Building 200 has been in continuous use since its construction in 1951. There has been no renovating or reconditioning of this space since its construction so building systems have deteriorated and are not fully reliable or effective. The facility does not meet current construction codes and safety standards.
- (c) \$2,611,000 is requested for FY 1990 funding. Construction will be ongoing.

^{a/} \$289,000 reprogrammed from prior year closed out projects.

DEPARTMENT OF ENERGY
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 ENERGY SUPPLY RESEARCH AND DEVELOPMENT
 (dollars in thousands)

KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

Multiprogram Energy Laboratories - Facilities Support
 General Purpose Facilities

IV. B. Plant Funded Construction Project

1. Project title and location: 84-ER-103 Road Repairs Project TEC: \$17,751
 Various locations Start Date: FY 1984
 (ANL, INEL, LBL, RL) Completion Date: FY 1990

2. Financial schedule:

<u>Fiscal Year</u>	<u>Appropriated</u>	<u>Obligations</u>	<u>Costs</u>
1984	\$ 6,500	\$ 6,500	\$ 737
1985	3,750	3,746	7,098
1986	2,973	2,977	3,999
1987	3,122 ^{a/}	3,122 ^{a/}	3,960
1988	517 ^{b/}	517 ^{b/}	831
1989	490	490	812
1990	399	399	314

3. Narrative:

(a) This project is for restoration, widening and improvement of portions of the roads at four sites - - Richland, INEL, ANL and LBL. Repair methods will vary from solely applying new asphalt covering to demolishing and reconstructing the road base and then resurfacing. In some cases, roads will also be widened, straightened or leveled to meet accepted standards for highway safety.

(b) This project is needed to bring site roads into conformance with current standards and practices in construction and traffic safety. Accident rates and severity due to poor pavement condition and geometries will decrease. Expensive annual road repairs due to deteriorated road base will be greatly reduced.

(c) \$399,000 is requested for FY 1990 funding. Construction will be completed this year.

^{a/} \$1,315,000 reprogrammed from prior year closed out projects.

^{b/} \$47,000 reprogrammed from prior year closed out projects.

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ENERGY SUPPLY RESEARCH AND DEVELOPMENT
(dollars in thousands)

KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

Multiprogram Energy Laboratories - Facilities Support
Environmental Compliance

IV. B. Plant Funded Construction Project

1. Project title and location: 90-R-770 General plant projects, Oak Ridge National Laboratory (ORNL), Oak Ridge, Tennessee
- Project TEC: \$ 1,000
Start Date: FY 1990
Completion Date: FY 1991

2. Financial schedule:

<u>Fiscal Year</u>	<u>Appropriated</u>	<u>Obligations</u>	<u>Costs</u>
1990	\$1,000	\$1,000	\$250
1991	\$0	\$0	\$750

3. Narrative:

- (a) This project provides for the many miscellaneous alterations, additions, modifications, replacements, and non-major new construction items.
- (b) These projects are required to reduce or eliminate environmentally harmful discharges from ORNL.

DEPARTMENT OF ENERGY
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 (dollars in thousands)

KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

Multiprogram Energy Laboratories - Facilities Support
 Environmental Compliance

IV. B. Plant Funded Construction Project

1. Project title and location: 88-R-830 Liquid Low-Level Waste Collection and Transfer System Upgrade
 Oak Ridge National Laboratory
 Oak Ridge, Tennessee
- Project TEC: \$35,000
 Start Date: FY 1988
 Completion Date: FY 1991

2. Financial schedule:

<u>Fiscal Year</u>	<u>Appropriated</u>	<u>Obligations</u>	<u>Costs</u>
1988	\$ 4,800	\$ 4,800	\$ 572
1989	11,787	11,787	8,100
1990	10,500	10,500	17,600
1991	7,913	7,913	8,728

3. Narrative:

- (a) This project will upgrade a portion of the existing Bethel Valley liquid low-level waste collection and transfer system. The project includes approximately one mile of doubly contained stainless steel piping and five stainless steel tanks (to be underground in stainless-steel lined concrete vaults). The pipelines will be equipped with an active leak detection and monitoring system and will be tied in with an overall operational central control system. The project will also include a new (4000 sq. ft.) central facility for receiving and discharging to the pipeline system liquid low-level waste which will be transported by truck in tanks and small bottles (in lieu of piping). Appropriately equipped new trucks will be provided to transport waste.

- (b) The purpose of this project is to upgrade a significant portion of liquid low-level waste collection and transfer system to protect personnel and public safety and health and the environment and to meet all applicable regulations. The majority of the existing system was constructed in the 1940's using materials and approaches considered applicable at the time. The original pipes are rapidly deteriorating and leaks are expected to occur at an increasing rate.
- (c) \$10,500,000 is requested for FY 1990 funding. This will be the third year of funding. Procurement and construction will be well underway.