MULTIPROGRAM ENERGY LABORATORIES - FACILITIES SUPPORT

PROGRAM MISSION

The Multiprogram Energy Laboratories - Facilities Support (MEL-FS) program supports the Department of Energy's Strategic Plan goal to "Provide the science and technology core competencies that enable DOE's other businesses to succeed in their missions" and the Office of Energy Research Strategic Plan goal to "Sustain scientific leadership and improve U.S. Competitiveness by providing world class scientific facilities and Department of Energy Laboratories, with adequate infrastructure." The MEL-FS program provides general purpose infrastructure funding support to ER multiprogram national laboratories - Argonne National Laboratory - East (ANL-E), Brookhaven National Laboratory (BNL), Lawrence Berkeley National Laboratory (LBNL), Oak Ridge National Laboratory (ORNL), and Pacific Northwest National Laboratory (PNNL). These laboratories have over 1,000 buildings with 13.7 million gross square feet of space and an estimated replacement value of over $10 billion. All facilities at these laboratories are government-owned, contractor-operated (GOCO).

The GOAL of the MEL-FS program is:

To ensure that support facilities can meet the Department's research needs primarily by refurbishing or replacing deteriorated, outmoded, unsafe, and inefficient general purpose infrastructure.

The OBJECTIVES related to these goals are:

1. To CORRECT ES&H INADEQUACIES: Address the highest priority ES&H corrective actions as determined by criteria that include: upgrades to fire protection programs; radiological assistance programs; safety and health training programs; pollution prevention through source reductions, recycling, education, design and process initiatives, and implementation of chemical tracking programs; effluent monitoring; air monitoring; emergency response equipment improvements; underground storage tank compliance. Also provides funds for construction to correct ES&H deficiencies including fire safety improvements, sanitary system upgrades and roof replacements.

2. To PRESERVE THE GOVERNMENT INVESTMENT IN THE PHYSICAL PLANT OF THE LABORATORIES IN ORDER TO SERVE RESEARCH AND DEVELOPMENT MISSION ACTIVITIES IN AN EFFICIENT AND EFFECTIVE MANNER: Provide funds for construction to renovate or replace inefficient and unreliable general purpose buildings and infrastructure.

PROGRAM MISSION - MULTIPROGRAM ENERGY LABORATORIES - FACILITIES SUPPORT (Cont'd)

3. To REDUCE THE BACKLOG OF FACILITY DEFICIENCIES AND INSTITUTIONALIZE THE PLANNING FOR INFRASTRUCTURE NEEDS: Support program planning, management, and maintenance activities which include facility condition assessments, life-cycle asset management planning, site development planning, and preparation of annual reports required by Section 2203(d) of the Energy Policy Act of 1992.

4. To CLEANUP, REMOVE, OR TRANSFER INACTIVE SURPLUS ORPHAN FACILITIES: Modify and/or dispose of facilities in a comprehensive and systematic manner in order to reduce surveillance and maintenance costs, eliminate ES&H liabilities, and provide for better utilization of space and land.

PERFORMANCE MEASURES:

Performance measures related to the MEL-FS program are continuously being refined to ensure they 1) incorporate external/internal customers' inputs, 2) drive performance, 3) address the strategic plan, and 4) focus on the effectiveness of the laboratory system. Current performance measures include:

1. The percentage of high priority ES&H needs met.

2. The square feet of substandard building space rehabilitated or eliminated compared with the total square feet of substandard building space.

3. The cumulative average of maintenance backlog amounts for each year of the contract period compared with the baseline maintenance backlog.

4. The number of inactive/surplus facilities disposed.

5. The cost savings associated with renovating versus new construction for activities within the inactive/surplus facilities subprogram.

6. The percentage of projects completed within baseline cost and schedule.

PROGRAM MISSION - MULTIPROGRAM ENERGY LABORATORIES - FACILITIES SUPPORT (Cont'd)

SIGNIFICANT ACCOMPLISHMENTS AND PROGRAM SHIFTS:

- Progress in Line Item Projects - Four subprojects were completed in FY 1995. Five subprojects are scheduled for completion in FY 1996. The four subprojects scheduled for completion in FY 1997 are the Applied Science Center at Brookhaven National Laboratory, Phase II Fire Safety Improvements at Argonne National Laboratory, the Multiprogram Laboratory Rehabilitation at Pacific Northwest National Laboratory, and the Phase I Fire and Safety Systems Upgrades at Lawrence Berkeley National Laboratory.

MULTIPROGRAM ENERGY LABORATORIES - FACILITIES SUPPORT
PROGRAM OBJECT CLASS SUMMARY
(Dollars in thousands)

		FY 1995		FY 1996		
		Comparable	Non.-Comp.	Comparable	Non-Comp.	FY 1997
	Direct Funding:					
	Personnel compensation:					
11.1	Full-time permanent					
11.3	Other than full-time permanent					
11.5	Other personnel compensation					
11.8	Special personal services payments					
11.9	Total personnel compensation	0	0	0	0	0
12.1	Civilian personnel benefits					
13.0	Benefits for former personnel					
21.0	Travel and transportation of persons					
22.0	Transportation of things					
23.1	Rental payments to GSA					
23.2	Rental payments to others					
23.3	Communications, utilities, and miscellaneous charges					
24.0	Printing and reproduction					
25.1	Advisory and assistance services					
25.2	Other services			52	91	
25.3	Purchases of goods and services from Government accounts					
25.4	Operation and maintenance of facilities	6,929	6,929	6,682	6,682	7,448
25.5	Research and development contracts					
25.7	Operation and maintenance of equipment					
26.0	Supplies and materials					
31.0	Equipment	500	6,287	0	0	177
32.0	Land and structures	18,579	28,243	27,449	27,449	21,260
41.0	Grants, subsidies and contributions					
99.0	Subtotal, obligations	26,008	41,459	34,183	34,222	28,885
	Reimbursable Obligations	-	-	-		
99.9	Total Obligations	26,008	41,459	34,183	34,222	28,885
	Recovery of prior year obligations	-2	-2	-4,263	-4,188	
	Unobligated balance avail, start of year	-935	-2,425	-78	-117	
	Unobligated balance avail, end of year	2,301	2,340			
	Budget Authority	$27,372	$41,372	$29,842	$29,917	$28,885

MULTIPROGRAM ENERGY LABORATORIES - FACILITIES SUPPORT

PROGRAM FUNDING PROFILE

(Dollars in thousands)

	FY 1995 Comparable Appropriation	FY 1996 Original Appropriation	FY 1996 Real & Comp. Adjustments	FY 1996 Comparable Adjusted	FY 1997 Budget Request
Research					
Infrastructure Support	$6,955	$6,656	$0	$6,656	$7,448
Related Capital Funding	500	0	0	0	177
Subtotal Research	7,455	6,656	0	6,656	7,625
Construction	21,247	27,449	0	27,449	21,260
Subtotal Multiprogram Energy Laboratories - Facilities Support	28,702	34,105	0	34,105	28,885
Adjustment	-1,330 a/	-4,188 b/	-75 c/	-4,263 d/	0
TOTAL	$27,372 e/	$29,917	-$75	$29,842	$28,885

a/ Share of Energy Supply, Research and Development general reduction for use of prior year balances assigned to this program. The total general reduction is applied at the appropriation level.

b/ Reprogrammed from prior year projects.

c/ Reprogrammed to the Indian Energy Resources programs.

d/ $4,263,068 was reprogrammed from prior year projects. Those funds were distributed as follows: $711,900 was added to FY 1996 line item funding; $3,476,168 was used to offset the general reduction for use of prior year balances; and $75,000 was provided for Indian Energy Resources programs.

e/ Excludes $142,000 which has been transferred to the SBIR program and $7,000 which has been transferred to the STTR program.

Public Law Authorizations:

Public Law 95-91, "Department of Energy Organization Act" (1977)

MULTIPROGRAM ENERGY LABORATORIES - FACILITIES SUPPORT
(Dollars in thousands)
PROGRAM FUNDING BY SITE

Field Offices/Sites	FY 1995 Comparable Appropriation	FY 1996 Original Appropriation	FY 1996 Real & Comp. Adjustments	FY 1996 Comparable Appropriation	FY 1997 Budget Request
Chicago Operations Office					
Argonne National Lab (East)	$6,371	$8,622	$0	$8,622	$6,198
Brookhaven National Laboratory	7,782	9,875	0	9,875	13,262
Oakland Operations Office					
Lawrence Berkeley National Laboratory	6,183	5,823	0	5,823	1,330
Oak Ridge Operations Office					
Oak Ridge National Laboratory	4,264	3,934	0	3,934	2,635
Richland Operations Office					
Pacific Northwest National Laboratory	3,870	4,740	0	4,740	5,090
All Other Sites a/	232	1,111	0	1,111	370
Subtotal	28,702	34,105	0	34,105	28,885
Adjustment	-1,330 b/	-4,188 c/	-75 d/	-4,263 e/	0
TOTAL	$27,372	$29,917	-$75	$29,842	$28,885

a/ Funding provided to industry, other Federal agencies and other miscellaneous contractors.

b/ Share of Energy Supply, Research and Development general reduction for use of prior year balances assigned to this program. The total reduction is applied at the appropriation level.

c/ Reprogrammed from prior year projects.

d/ Reprogrammed to the Indian Energy Resources programs.

e/ $4,263,068 was reprogrammed from prior year projects. Those funds were distributed as follows: $711,900 was added to FY 1996 line item funding; $3,476,168 was used to offset general reduction for use of prior year balances: and $75,000 was provided for Indian Energy Resources programs.

MULTIPROGRAM ENERGY LABORATORIES - FACILITIES SUPPORT

INFRASTRUCTURE SUPPORT
(Tabular dollars in thousands, Narrative in whole dollars)

I. Mission Supporting Goals and Objectives:

General Purpose Facility (GPF) activities support the planning, management, and maintenance activities needed by the laboratories to better identify and prioritize infrastructure requirements. These activities include development and implementation of the site facilities planning systems such as facility condition assessments, life-cycle asset management planning, site development planning, Facilities Information Management System, etc. The research funds also support efforts to integrate requirements across laboratories such as those required by the Energy Policy Act (EPACT). Section 2203(d) of this Act requires annual submission of a "plan for conducting future facility maintenance, making repairs, modifications and new additions and constructing new facilities at multiprogram energy laboratories." The research funds further support site-wide maintenance needs related to general purpose facilities.

The Environment, Safety and Health (ES&H) Support activities provide support to correct the highest priority ES&H deficiencies identified in the ES&H Management Plan. The Department undertook a thorough review of the environment, safety and health (ES&H) compliance at its laboratories and has identified deficiencies in the annual DOE ES&H Management Plan. Deficiencies have been identified in the environmental area (e.g., air, water, hazardous materials), and in occupational safety and health, fire protection, emergency preparedness, safety and hazards analyses, conduct of operations, configuration management, work practices and radiation protection.

Inactive and Surplus Facilities activities support the Department's policy to maintain only those facilities necessary to effectively and economically perform assigned missions and tasks. It supports this policy by:

- removing inactive/retired facilities that cannot be economically maintained or renovated to house current or planned activities.

- cleaning up inactive areas of operating facilities that pose an operational and liability concern if reused.

- preparing contaminated facilities that qualify for clean-up by EM for transfer.

As research program technologies change over the course of time, some existing general purpose facilities (or portions of them) have become permanently inactive. These facilities must be cleaned up if they are to be reused, or removed if they are determined to be surplus.

II. Funding Schedule:

Program Activity	FY 1995	FY 1996	FY 1997	$ Change	% Change
General Purpose Facilities	$ 584	$ 0	$ 485	$+ 485	--
Environment, Safety & Health Support . . .	5,881	6,656	6,478	- 178	- 2.7%
Inactive and Surplus Facilities	490	0	485	+ 485	--
Total, Infrastructure Support	$ 6,955	$ 6,656	$ 7,448	$+ 792	+ 11.9%

III. Performance Summary:

FY 1995 Accomplishments:

- o Increased support for the most critical and highest priority actions and compliance issues identified in the ES&H Management Planning process. Examples are: pollution prevention activities including source reduction; operating permit development; upgrades in environmental monitoring practices and procedures; enhanced hazard assessment and risk prioritization; OSHA workplace improvements; and wildland fire control.

- o Proactively addressed the highest priority cross-laboratory ES&H issues such as identifying and transferring "noteworthy practices" and promoting needed process improvements in high priority areas such as pollution prevention.

- o Eight facilities (21,000 s.f.) were removed thereby eliminating ES&H liabilities and reducing surveillance and maintenance costs. In addition, characterization and disposition of orphan waste and chemicals were performed in two facilities; and two facilities were rehabilitated which allowed for the reuse of 5100 s.f. of inactive shop and laboratory space. One of these rehabilitation projects involved removal of contaminated ventilation ducting in building 331, Inhalation Toxicology Suite, at Pacific Northwest National Laboratory and returned 2700 s.f. of inactive laboratory space to operational status.

- o Held workshops with the DOE site and operations offices, and the laboratories focused on developing a common set of facility management performance measures, improving communications by defining common terminology and establishing expectations and roles of all offices and laboratories.

- o EPACT: EPACT Section 2203(b) "Supporting Research and Technical Analysis": Provided architectural and engineering contractor support to aid in the preparation of a facility policy and plan for the multiprogram energy laboratories as required by Section 2203(d) of the Energy Policy Act of 1992.

III. Performance Summary: Infrastructure Support (Cont'd)

o Provided support to laboratories for infrastructure planning and management activities, such as support for developing and implementing facility condition assessment surveys and life-cycle asset management planning.

o Funding in the amount of $142,000 and $7,000 has been transferred to the SBIR program and the STTR program, respectively.

FY 1996 Accomplishments (to date and planned):

o Continue to support the highest priority actions and compliance issues identified in the ES&H management planning process including: electrical service upgrades, site hydrogeological assessment, natural hazard mitigation, asbestos characterization and remediation, worker safety enhancement, fuel storage and transfer facility upgrade, fire and life safety vegetation management, seismic safety anchors for building systems, perchloric acid hood decontamination, and implementation of 10 CFR 835.

o Funding in the amount of $133,000 and $10,000 has been budgeted for the SBIR program and the STTR program, respectively.

FY 1997 Planned Accomplishments:

o Continue to address the highest priority actions and compliance issues identified in the ES&H management planning process including: laser access control, communication equipment upgrade, non-reactor nuclear facility safety documentation, Clean Air Act compliance, 480 volt conduit deficiency correction, ozone depleting substance reduction, underground storage tank removal/replacement, nuclear criticality safety upgrade, and pollution prevention activities.

o Continue support to determine clean-up/demolition/transfer requirements for high priority contaminated facilities which will be transferred to EM; remove inactive surplus facilities that cannot be transferred to EM; and clean-up/renovate inactive space to return it to operational status.

o Continue workshops with the DOE site and operations offices, and the laboratories to improve facility management performance measures and communications.

o Continue to prepare annual update of facilities plan for the multiprogram energy laboratories as required by Section 2203(d) of the Energy Policy Act of 1992.

III. Performance Summary: Infrastructure Support (Cont'd)

- o Continue to provide support to laboratories for infrastructure planning and facility management activities including support for implementing the DOE Facilities Information Management Systems (FIMS), facility condition assessment survey activities, life-cycle asset management planning, and the site development planning process, as well as site-wide maintenance needs related to general purpose facilities.

- o Funding in the amount of $186,000 has been budgeted for the SBIR program.

Explanation of Funding Changes FY 1996 to FY 1997:

- o The increase is for GPF and Inactive and Surplus Facilities activities that had been eliminated in FY 1996 ($+792,000).

MULTIPROGRAM ENERGY LABORATORIES - FACILITIES SUPPORT

RELATED CAPITAL FUNDING
(Tabular dollars in thousands, Narrative in whole dollars)

I. Mission Supporting Goals and Objectives:

This subprogram provides funding to support capital equipment needs related to ES&H activities at the Energy Research multiprogram national laboratories.

II. Funding Schedule:

Program Activity	FY 1995	FY 1996	FY 1997	$ Change	% Change
Environment, Safety and Health Equipment . .	$ 500	$ 0	$+ 177	$+ 177	-
Total, Related Capital Funding	$ 500	$ 0	$+ 177	$+ 177	-

III. Performance Summary:

FY 1995 Accomplishments:

o Provided general funds for replacement, upgrade and improvement in health physics equipment and in environmental monitoring as identified in the ES&H Management Plan. Representative examples included: radio transition equipment, site perimeter modeling system, wildland fire management equipment, CFC replacement equipment, and alpha/beta/gamma counter, a mobile filter/dewatering unit, equipment for a photochemical waste stream, and replacement tanks for underground storage tanks.

FY 1996 Accomplishments (to date and planned):

o No activity.

III. Performance Summary: (Cont'd)

FY 1997 Planned Accomplishments:

o Continue reducing the backlog of deficiencies by upgrading health physics and environmental monitoring equipment as identified in the ES&H Management Plan. Representative examples will include: purchasing of radio transition equipment, pH conductivity equipment, and oxygen meters; replacing a liquid scintillation system and a halon system; and upgrading an emergency preparation paging system, a dosimetry system, and an exhaust systems.

Explanation of Funding Changes FY 1996 to FY 1997:

o The increase in ES&H equipment reflects the restart of funding after no activity in FY 1996 (+$177,000).

MULTIPROGRAM ENERGY LABORATORIES - FACILITIES SUPPORT

CONSTRUCTION

(Tabular dollars in thousands, Narrative in whole dollars)

I. Mission Supporting Goals and Objectives:

This subprogram supports the Program's goal to refurbish or replace inadequate general purpose facilities and infrastructure that support research needs. Facility deficiencies are due to age, obsolescence, extensive use and changing requirements, including Environment, Safety and Health Requirements. This subprogram achieves this by funding line item construction projects (i.e., projects with a total estimated cost of $2 million or above) for general purpose facilities. General purpose facilities are general use, service and support facilities such as administrative space, cafeterias, general office/laboratory space, utility systems, sanitary sewers, roads, etc. There are over 1,000 buildings at the six laboratories covered by this program. These buildings have over 14,000,000 gross square feet of space. Approximately half of the space is considered fully adequate, while the remainder needs rehabilitation or replacement/demolition. The large percentage of inadequate space reflects the age of the facilities (30 years or older), changing research needs that require more office space and light laboratory space, environmental, safety and health requirements and obsolete systems.

Capital investment requirements are identified in laboratory Institutional Plans which address needs over a five year planning horizon based on expected programmatic support. The MEL-FS program has prepared a 5-year program plan that identifies projects totaling over $425 million for the five year period. Forty one percent of this amount is to rehab or replace buildings; 35% is for utility projects; and 24% for environment, safety and health projects. All projects are first ranked using the Capital Assets Management Process Prioritization Model. The projects that have environment, safety and health as the principal driver are further prioritized using the Risk Prioritization Model from the DOE ES&H Management Plan process.

II. Funding Schedule:

Program Activity	FY 1995	FY 1996	FY 1997	$ Change	% Change
General Purpose Facilities	$ 13,409	$ 12,975	$ 6,960	$- 6,015	- 46.3%
ES&H	7,838	14,474	14,300	- 174	- 1.2%
Total, Construction	$ 21,247	$ 27,449	$ 21,260	$- 6,189	- 22.5%

III. Performance Summary: Construction (Cont'd)

FY 1995 Accomplishments:

- o Supported completion/continuation of five Environment, Safety, and Health subprojects consistent with planned schedules and initiation of three new subprojects - a fire safety project, a sanitary system upgrade and a loss prevention upgrade.

- o Supported completion/continuation of six General Purpose Facility subprojects consistent with planned schedules and initiation of four new subprojects including one electrical safety project and three building rehab/upgrades. The square footage of new replacement lab and office space is 17,500 square feet.

FY 1996 Accomplishments (to date and planned):

- o Support completion/continuation of six Environment, Safety and Health subprojects consistent with planned schedules and initiation of three new subprojects including rehab of hot cells and support systems at BNL, building electrical service upgrade at ANL-E and sanitary sewer restoration at LBNL.

- o Supports completion/continuation of eight General Purpose Facility projects.

- o No new subprojects initiated.

FY 1997 Planned Accomplishments:

- o Support completion/continuation of six Environment, Safety and Health subprojects.

- o Supports completion/continuation of three General Purpose Facility subprojects. One ongoing subproject (ORNL Roofing) is not funded delaying completion.

- o No new subprojects initiated.

Explanation of Funding Changes FY 1996 to FY 1997:

- o The decrease in funding is a result of the overall decrease in MEL-FS program funding. Funding at this level results in one ongoing project (Roofing Improvements, ORNL) not being funded and no new project starts ($-6,189,000).

MULTIPROGRAM ENERGY LABORATORIES – FACILITIES SUPPORT
CAPITAL OPERATING EXPENSES & CONSTRUCTION SUMMARY
(Dollars in thousands)

	FY 1995	FY 1996	FY 1997	$ Change	% Change
Capital Operating Expenses					
Capital Equipment (total).....	$500	$0	$177	$+177	–

Construction Project Summary (both Operating and Construction Funded)

Project No.	Project Title	TEC	Previous Appropriated	FY 1995 Appropriated	FY 1996 Appropriated	FY 1997 Request	Unapprop. Balance
MEL–001	Multiprogram Energy Laboratories Infrastructure Project	N/A	$27,856	$21,247	$27,449	$21,260	$20,579
	Total Multiprogram Energy Laboratories – Facilities Support	$XXX,XXX	$27,856	$21,247	$27,449	$21,260	$20,579

DEPARTMENT OF ENERGY
FY 1997 CONGRESSIONAL BUDGET REQUEST

ENERGY SUPPLY, RESEARCH AND DEVELOPMENT - PLANT AND CAPITAL EQUIPMENT
(Tabular dollars in thousands. Narrative material in whole dollars.)

Multiprogram Energy Laboratories - Facilities Support

1. Title and Location of Project: Multiprogram Energy Laboratories
Infrastructure Project
Various Locations

2a. Project No. MEL-001
2b. Construction Funded

3a. Date A-E Work Initiated, (Title I Design Start Scheduled): Varies by subproject

3b. A-E Work (Title I & II) Duration: 6-12 Months

5. Previous Cost Estimate:
Total Estimated Cost (TEC) -- N/A
Total Project Cost (TPC) -- N/A

4a. Date Physical Construction Starts: See subproject details

4b. Date Construction Ends: See subproject details

6. Current Cost Estimate:
TEC -- N/A
TPC -- N/A

7. Financial Schedule: (Federal Funds)

Fiscal Year	Appropriation	Adjustments	Obligations	Cost
Prior Years	$ 27,856		$ 27,856	$ 20,000
FY 1995	21,247	-1,380 a/	19,867	16,858
FY 1996	27,449		27,449	26,000
FY 1997	21,260		21,260	27,000
Future Years	20,579		20,579	27,153

a/ Reflects $1,328,000 for this program's share of the Energy Supply, Research and Development reduction for use of prior year balances and $52,000 for the Departmental reprogramming.

1. Title and Location of Project:	Multiprogram Energy Laboratories Infrastructure Project Various Locations	2a. Project No. MEL-001 2b. Construction Funded

Project Description, Justification and Scope

This project funds two types of subprojects:

- Projects to correct ES&H deficiencies including fire safety improvements, sanitary system upgrades and electrical system replacements; and

- Projects that renovate or replace inefficient and unreliable general purpose facilities (GPF) including general use, service and support facilities such as administrative space, cafeterias, utility systems, and roads.

General Purpose Facility Projects:

	TEC	Prev.	Prior Year	FY 1995	FY 1996	FY 1997	Future Years	Start Date	End Date
Central Heating Plant Rehab, I (ANL)	$9,880	$9,500	$ 0	$1,307	$2,631	$2,500	$3,442	3rd Qtr FY 1996	2nd Qtr FY 1999

This project supports rehabilitation/upgrade of central heating plant systems and components that are no longer adequate, efficient or reliable.

Assessments have identified existing conditions at the central heating plant that do not meet current health, safety and environmental protection standards. Phase I will provide the most urgently needed rehabilitation/upgrade, including (as needed): boilers, boiler auxiliaries, deaerators, condensate tanks, material transport, piping valves, pollution control equipment, etc.

1. Title and Location of Project:	Multiprogram Energy Laboratories Infrastructure Project Various Locations	2a. Project No. MEL-001 2b. Construction Funded

8. Project Description, Justification and Scope (Continued)

	TEC	Prev.	Prior Year	FY 1995	FY 1996	FY 1997	Future Years	Start Date	End Date
Electrical Safety Rehab (PNNL)	4,740	6,800	0	240	1,500	1,500	0	4th Qtr FY 1995	3rd Qtr FY 1998

This project will provide for the rehabilitation of electrical systems and correction of numerous National Electrical Code (NEC) violations in various Energy Research buildings in the 300 areas of the Hanford Site.

Many of the buildings range in age from 20 to 40 years and electrical equipment and installations contained within them do not meet NEC and DOE standards and criteria for safe and efficient operations. This project will safeguard personnel working with the DOE facility electrical systems and enhance the reliability of those systems.

Multiprogram Laboratory Rehab, I (PNNL)	6,100	6,100	0	400	2,740	2,960	0	2nd Qtr FY 1996	4th Qtr FY 1997

This project is part of the Multiprogram Energy Laboratory - Facilities Support Program mission to modernize and renovate aging PNL multiprogram laboratory facilities. This project will involve the remodeling of the 3rd floor of building 331 and construction of a new facility for small animal quarters.

Leading research programs are increasing emphasis on cellular/modular studies and changing use of animal models for the dose-response studies to those which use in vitro/in vivo approaches. As a result, small animal physical facilities need to be renovated or replaced by additional laboratory facilities in which molecular biology and biochemical research can be carried out. This project responds to this new approach.

1. Title and Location of Project:	Multiprogram Energy Laboratories Infrastructure Project Various Locations	2a. Project No. MEL-001 2b. Construction Funded

8. Project Description, Justification and Scope (Continued)

	TEC	Prev.	Prior Year	FY 1995	FY 1996	FY 1997	Future Years	Start Date	End Date
East Canyon Electrical Safety Project (LBNL)	3,854	3,754	2,754	1,000	100	0	0	2nd Qtr FY 1994	3rd Qtr FY 1996

The project is the third of several rehabilitation elements that are part of a master plan to improve the reliability of the electrical distribution system of the entire laboratory. The project will utilize the new circuit breakers provided in FY 1987 by the improvements to the main substation. A new 12kV switching station and new 12kV distribution circuits to laboratory facilities in the East site area will be installed, as will a new 500 kVA substation with standby generation at the National Center for Electron Microscopy.

The existing 12kV power system has major deficiencies. There is no redundancy, so a cable fault will cause extended power outage. There is no ground fault protection, which would result in a loss of power to the entire East Site. Since there is no redundancy, preventive maintenance operations can only be accomplished during scheduled shutdowns of the entire East Site. The power cable is reaching the end of its useful life (21 years of a 25 years maximum) and should be replaced. A new substation at the National Center for Electron Microscopy is required to provide an independent power supply system to this major research facility. Power outages adversely affect the operation of the electron microscopes, requiring long time periods for adjustment and re-calibration of these major scientific instruments.

Safety Compliance Mod., Bldg. 326 (PNNL)	8,540	8,540	6,640	1,900	0	0	0	3rd Qtr FY 1993	2nd Qtr FY 1995

The project brings the 326 Building, which was an aged but strategically important laboratory, into compliance with National Fire Protection Association (NFPA) requirements, National Electric Code requirements, and State of Washington requirements. Since its construction in 1952, the building has been in continuous use. Although the building was structurally sound, it did not meet today's building codes and standards of acceptability for health and safety.

1. Title and Location of Project:	Multiprogram Energy Laboratories Infrastructure Project Various Locations	2a. Project No. MEL-001 2b. Construction Funded

8. Project Description, Justification and Scope (Continued)

The project now clearly defines the egress pathways from the facility, provide fire resistant stairwells and exit corridors, extensively upgrade the building electrical system to comply with the National Electric code including replacement of most of the electrical distribution system, installation of a new motor control center, installation of backflow prevention on the fire main to meet State of Washington requirements, installation of handicap facilities, installation of full wet-pipe sprinklers to comply with NFPA requirements, and other modifications to meet code requirements.

	TEC	Prev.	Prior Year	FY 1995	FY 1996	FY 1997	Future Years	Start Date	End Date
Electrical System Upgrade Phase II (ANL)	5,044	4,839	2,796	2,043	205	0	0	3rd Qtr FY 1994	1st Qtr FY 1996

The project supports the upgrade of the main electrical distribution system and major components in the 200 area.

Due to the age of the electrical system, malfunctions have occurred. As maintenance of the switches is becoming increasingly difficult due to a scarcity of spare parts, a complete replacement is recommended to ensure safe, reliable and continuous operation of ongoing research. The new system will employ state of the art technology.

Potable Water System Upgrade, Phase I (BNL)	5,320	5,320	3,457	1,863	0	0	0	2nd Qtr FY 1994	4th Qtr FY 1995

This project began necessary upgrades of the potable water system at Brookhaven National Laboratory. It supported the first of several phases of an overall planned program to rehabilitate and improve the water supply and insure that an adequate supply of good quality water is available beyond the year 2000.

The existing nine potable water wells dated back to 1941. The three oldest wells have been decommissioned because of volatile organic contamination. Only one did not show signs of contamination. The remaining well is capable of producing only half of the water requirements for the laboratory. Steps had to be taken to insure a safe, adequate supply of water into the future. Five carbon absorption filtration units were installed on wells 4, 6, 7, and 12. Eight thousand feet of cast iron piping and 1,750 feet of transite pipe was replaced. The water main was extended approximately 4,000 feet to sewage treatment plant for potable water and fire protection.

1. Title and Location of Project:	Multiprogram Energy Laboratories Infrastructure Project Various Locations	2a. Project No. MEL-001 2b. Construction Funded

8. Project Description, Justification and Scope (Continued)

	TEC	Prev.	Prior Year	FY 1995	FY 1996	FY 1997	Future Years	Start Date	End Date
Fuel Storage and Transfer Facility Upgrade (BNL)	3,600	3,600	681	2,479	440	0	0	2nd Qtr FY 1995	3rd Qtr FY 1996

This project will upgrade the existing fuel storage and transfer facility to bring it into compliance with local and state code for handling and storage of fuel oil.

This facility will consist of fuel transfer facility enclosure with unloading booms and fire detection and protection systems. This facility will be constructed on a diked containment area equipped with leak detection systems and oil/water separator. The enclosure will be approximately 5,600 square feet.

Roofing Improvements (ORNL)	16,000	16,000	3,136	197	2,089	0	10,578	2nd Qtr FY 1994	2nd Qtr FY 2000

This project supports replacement of deteriorated roofing on buildings and facilities throughout ORNL. Requirements are prioritized and those in the worst condition and housing the most critical equipment and activities will have the highest priority.

The purpose of this project is to replace deteriorated roofing on buildings and facilities at ORNL. Seventy percent of the roofs have been in place for more than 20 years. Because of age and deterioration, many of the roofs have developed leaks and require extensive maintenance. This project is needed before leakage problems reach the point that they affect equipment, records and research activities as well as the health and safety of personnel working in the facilities.

1. Title and Location of Project:	Multiprogram Energy Laboratories Infrastructure Project Various Locations	2a. Project No. MEL-001 2b. Construction Funded

8. Project Description, Justification and Scope (Continued)

	TEC	Prev.	Prior Year	FY 1995	FY 1996	FY 1997	Future Years	Start Date	End Date
Applied Science Center Phase I (BNL)	3,870	3,870	0	600	3,270	0	0	2nd Qtr FY 1996	2nd Qtr FY 1997

The proposed addition to the Department of Applied Science (DAS) building will provide approximately 12,000 sq. ft. of laboratory, office and support space. The addition will be a two-story structure with an underground passageway. The first floor will be devoted principally to laboratory space with some space for offices, darkroom and bathrooms. The second floor will principally be office space with some space dedicated for a library, lunch room, etc.

The purpose of this project is to consolidate and upgrade the Department's space to alleviate the fragmentation of approximately 240 in-house DAS staff, supplemented at peak periods by research collaborating students and consultants. This fragmentation reduces the efficiency, management and opportunities for the exchange of information.

ES&H PROJECTS:

Fire Safety Improvements, II (ANL)	5,350	5,350	1,215	1,500	2,411	224	0	1st Qtr FY 1994	1st Qtr FY 1997

This project will encompass fire protection system extensions, new installations, and system replacement in 80 existing ANL-E buildings. This phase will complete the upgrading of existing fire alarm and suppression systems and expand fire suppression systems.

1. Title and Location of Project:	Multiprogram Energy Laboratories Infrastructure Project Various Locations	2a. Project No. MEL-001 2b. Construction Funded

8. Project Description, Justification and Scope (Continued)

	TEC	Prev.	Prior Year	FY 1995	FY 1996	FY 1997	Future Years	Start Date	End Date
Fire Safety Improvements, III (ANL)	3,003	2,880	0	210	1,075	1,000	718	2nd Qtr FY 1996	4th Qtr FY 1998

This project encompasses the third phase of site wide fire safety modifications at ANL. This phase involves correction of "means of egress" deficiencies and fire separation/fire protection of building elements.

This project is proposed as part of ANL's 1991 Action Plan developed in response to ES&H findings and is required to correct existing fire and life safety deficiencies.

Sanitary System Mod. II (BNL)	4,250	3,772	0	960	1,690	1,032	568	1st Qtr FY 1996	4th Qtr FY 1998

This project is the second phase of the upgrade of the laboratory sanitary waste system. This project continues with replacement of the balance of defective sewer lines and implements treatment plant building improvements. This phase will include: replacement of approximately 15,440 linear feet of defective sewer pipe; and demolishing the Hyperchlorite Building (No. 576), the Barminator Building (No. 583), and the Influent Measuring Building (No, 584), which are plywood structures. These structures will be replaced with masonry structures. Service Building (No. 575), which is a lunch and spare parts trailer, will be replaced with a masonry addition.

The purpose of this project is to eliminate or minimize present and future infiltration to groundwater and exfiltration to the sewage collection system, to replace structures not presently meeting OSHA and NEC Codes.

1. Title and Location of Project:	Multiprogram Energy Laboratories Infrastructure Project Various Locations	2a. Project No. MEL-001 2b. Construction Funded

8. Project Description, Justification and Scope (Continued)

	TEC	Prev.	Prior Year	FY 1995	FY 1996	FY 1997	Future Years	Start Date	End Date
Loss Prevention Upgrades (BNL)	7,700	7,020	0	600	2,480	4,620	0	4th Qtr FY 1996	3rd Qtr FY 1998

This project provides for the upgrade of approximately 96 existing substations. With respect to fire protection, the project includes: relocating transformers; replacing oil-filled transformers with dry type; replacing oil-filled transformers with less flammable fluid; fire stand pipes and hose stations; fire deluge systems; dry chemical extinguishing systems; fire walls and barriers; wire glass; fire seals; relocating combustible materials and trailers; curbing; and oil retention pits. With respect to substation enclosures, work includes: extending existing fence to proper heights; new fence to replace deteriorating fence; new fence for relocated transformers; replacing fences at proper clearances; non-combustible door for vaults; panic hardware on vault doors; and protective screens. With respect to grounding, work includes: replacing deteriorating ground cable; new grounding for relocated substations; ground jumpers for gates; equipment grounds and reshaping arrestor grounding.

The purpose of this project is to minimize potential harmful situations to personnel and to minimize the potential loss of property and experimental program time due to fire. The sites' vulnerability was assessed as a result of ES&H findings.

Building Electrical Service Upgrade, I (ANL)	7,617	7,430	0	0	1,200	1,144	5,273	2nd Qtr FY 1997	4th Qtr FY 1999

This project will provide the most urgently needed replacement of emergency generators and the upgrade of building's main electrical services (circuit breaker retrofits, bus duct replacement and emergency generator replacements) that are no longer adequate, reliable, efficient, or in accordance with existing electrical codes/standards and environment, safety and health standards.

Failure to fund this project would increase frequency and duration of general maintenance resulting in increased parts and labor costs, negative impact on scientific programs and non-compliance with safety regulations.

1. Title and Location of Project:	Multiprogram Energy Laboratories Infrastructure Project Various Locations	2a. Project No. MEL-001 2b. Construction Funded

8. Project Description, Justification and Scope (Continued)

	TEC	Prev.	Prior Year	FY 1995	FY 1996	FY 1997	Future Years	Start Date	End Date
Hot Lab Renovation, Bldg 801 (BNL)	7,080	6,370	0	0	800	6,280	0	2nd Qtr FY 1997	4th Qtr FY 1998

This project, in the west side of Building 801 (the Hot Lab), is part of a comprehensive effort to: upgrade the production of radionuclides and radiopharmaceuticals for supply to the pharmaceutical/medical community outside the laboratory; upgrade major research program leading to new and more effective diagnostic and therapeutic agents; comply with DOE Order 5820.2A, which requires that the generation of low-level radioactive waste be reduced; and bring Brookhaven National Laboratory (BNL) into conformance with Federal, state, and local environmental laws and regulatory requirements. The unique location of BNL over an EPA designated "sole-source" aquifer has heightened regulatory concern over potential ground water contamination from BNL facilities.

Failure to fund this project would increase the potential for ground water contamination and non-compliance with safety regulations.

Roof Replacement Phase I (BNL)	2,873	2,873	2,773	100	0	0	0	4th Qtr FY 1993	4th Qtr FY 1995

This project supported roof replacement on buildings at BNL. Approximately 263,000 sq. ft. of re-roofing was accomplished during this phase.

Roof surveys conducted in 1989 have indicated that approximately 718,000 sq. ft. of roofing on 46 buildings will have to be replaced. This project represents Phase I.

1. Title and Location of Project: Multiprogram Energy Laboratories
Infrastructure Project
Various Locations

2a. Project No. MEL-001
2b. Construction Funded

8. Project Description, Justification and Scope (Continued)

	TEC	Prev.	Prior Year	FY 1995	FY 1996	FY 1997	Future Years	Start Date	End Date
Life Safety Code Compliance (PNNL)	1,970	1,970	1,464	506	0	0	0	1st Qtr FY 1994	4th Qtr FY 1995

This project supported upgrades to selected 300 area PNNL multiprogram facilities. These upgrades correct deficiencies in fire and life safety codes.

The project ensures continuity of operations in vital multiprogram laboratories at PNNL. The conditions of the buildings had raised many concerns about their adequacy for continuing operations. PNNL's research missions can be continued by completing the work proposed in this project.

Fire and Safety Systems Upgrade Phase I (LBNL)	4,600	4,600	1,470	2,000	1,130	0	0	2nd Qtr.FY 1994	3rd Qtr FY 1997

This project is the first of several which will bring LBNL facilities into compliance with building, fire and life safety codes.

A majority of facilities at LBNL were constructed from the 1940s to the mid 1960s. The facilities provided national scientific leadership during a historically significant time. Since this period, major changes have occurred in building, fire and life safety codes. This project will support modifications required to meet new codes and correct noncompliance conditions.

1. Title and Location of Project:	Multiprogram Energy Laboratories Infrastructure Project Various Locations	2a. Project No. MEL-001 2b. Construction Funded

8. Project Description, Justification and Scope (Continued)

	TEC	Prev.	Prior Year	FY 1995	FY 1996	FY 1997	Future Years	Start Date	End Date
Hazardous Materials Safeguards Phase I (LBNL)	4,720	4,720	1,470	1,962	1,288	0	0	3rd Qtr FY 1994	2nd Qtr FY 1996

Project scope modified due to reduction of hazardous materials stored in Building 70. Reduction achieved through use of off-site storage. Modifications include: deletion of chemical delivery system; ventilation system upgrades; and central monitoring and alarm system. This project will upgrade Building 70 to add safety, health and environmental protection safeguards to meet or exceed current standards for public health and safety.

The existing Building 70 is an aged laboratory facility used for materials sciences and semi-conductor research. These operations employ a wide variety of chemicals which are highly flammable and/or toxic. If this project is not supported, research operations must be restricted, resulting in curtailing or eliminating fields of research at LBNL.

Sanitary Sewer Restoration Phase I (LBNL)	2,400	2,400	0	0	2,400	0	0	3rd Qtr FY 1997	4th Qtr FY 1998

Portions of the underground sanitary sewer system will be replaced based upon video camera surveys of site sanitary sewer lines, including approximately 3,480 feet of sanitary sewer lines ranging in diameter from three (3) inches to eight (8) inches. Soil samples will be tested during construction for possible contamination. All excavated material that is contaminated will be either remediated or removed to an authorized hazardous waste site.

Failure to fund this project would increase the potential for ground water contamination, excessive maintenance costs, and non-compliance with safety regulations.

1. Title and Location of Project:	Multiprogram Energy Laboratories Infrastructure Project Various Locations	2a. Project No. MEL-001 2b. Construction Funded

9. Details of Cost Estimate

Based on preliminary or conceptual design.

10. Method of Performance

Design will be by negotiated architect-engineer contracts or laboratory personnel. To the extent feasible, construction and procurement will be accomplished by fixed-price contracts awarded on the basis of competitive bids.