



United States  
General Accounting Office  
Washington, D.C. 20548

Resources, Community, and  
Economic Development Division

B-272052

June 26, 1996

The Honorable Dan Schaefer  
Chairman, Subcommittee on Energy and Power  
Committee on Commerce  
House of Representatives

Dear Mr. Chairman:

In March 1996, the Department of Energy (DOE) released its Draft Strategic Laboratory Missions Plan to sharpen the strategic focus of its research and development (R&D) laboratories by clarifying their specific roles and responsibilities. Important to the accomplishment of DOE's R&D mission is the condition of its laboratory facilities and the adequacy of funding to renovate and upgrade laboratory space. You requested us to provide information on the (1) age and condition of DOE's laboratories and (2) backlog of renovation and upgrade projects for general laboratory facilities compared to funding made available through two key facilities accounts. Our review included 28 laboratories that support DOE's R&D mission; we excluded Bettis and Knolls Atomic Power Laboratories because they perform naval nuclear propulsion R&D for the Department of Defense. We did not verify the accuracy of the data that DOE and its laboratories provided.

In summary, 62 percent of the floor space of DOE's laboratories is more than 26 years old, and five of DOE's nine multiprogram laboratories have reported that at least 50 percent of their floor space requires rehabilitation or replacement.<sup>1</sup> DOE's laboratories estimate that they have a \$1.3 billion backlog of infrastructure renewal projects for general purpose facilities; funding for such projects in fiscal year 1995 was approximately \$80 million. DOE's strategic laboratory missions planning effort provides an opportunity to improve the effectiveness and efficiency of its laboratory facilities by providing a basis for decisions to realign, consolidate, or close those laboratory facilities

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<sup>1</sup>DOE and its laboratories use floor space to track the age and condition of facilities in their management reports and central facilities data base.

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considered less important for fulfilling DOE's R&D mission while increasing funding for those facilities considered essential.

### BACKGROUND

DOE manages one of the largest R&D laboratory systems in the world. From its origins in the Manhattan Project during World War II, the DOE complex has grown to 30 laboratories, including 2 naval nuclear propulsion laboratories, as of December 1995. The DOE complex ranges from small, specialized laboratories with annual operating budgets of less than \$10 million to large, diversified laboratories with annual funding of more than \$500 million. (See enc. I.) DOE has designated nine of its largest laboratories as "multiprogram," because they receive funding from several different DOE programs. DOE's laboratory facilities consist of about 5,800 government-owned buildings with 47.1 million square feet of laboratory floor space, utility systems, other structures, and roads. The replacement value of these facilities is more than \$30 billion. In addition, 2.8 million square feet of space is leased by DOE's laboratories, primarily Idaho National Engineering Laboratory, National Renewable Energy Laboratory, and Sandia National Laboratories.

Funding to renovate or upgrade laboratory facilities outside of the laboratories' own operating funds is provided by the DOE program designated as the landlord. In the past, these funds primarily were (1) line-item projects costing more than \$2 million that required specific congressional approval and (2) general plant projects (GPP) that cost less than \$2 million. However, the House and Senate reports accompanying the Energy and Water Development Appropriations Act, 1996, (P.L. 104-46), merged the GPP account with operating funds and relied instead on laboratory managers to allocate the appropriate amount of R&D funds among research needs, equipment, and facilities projects. In addition, DOE's Office of Energy Research has used a multiprogram Energy laboratory-facilities support (MEL-FS) account to fund renovations and upgrades of general purpose facilities at Argonne National Laboratory, Brookhaven National Laboratory, Lawrence Berkeley Laboratory, Oak Ridge National Laboratory, and Pacific Northwest Laboratory. Similarly, DOE's Office of Defense Programs has used a Nuclear Weapons Stockpile Stewardship Facilities Revitalization Program to fund renovations and upgrades of general purpose facilities at Lawrence Livermore National Laboratory, Los Alamos National Laboratory, and Sandia National Laboratories.

Our January 1995 report, which examined DOE's multiprogram laboratories, recommended that the Department evaluate alternatives for managing the

laboratories that more fully support the achievement of clear and coordinated missions.<sup>2</sup> DOE issued its Draft Strategic Laboratory Missions Plan in response to our recommendations and those of the Secretary of Energy's Advisory Board Task Force on Alternative Futures for the DOE National Laboratories, chaired by Mr. Robert Galvin. In addition, our September 1993 report noted that DOE cited deteriorating facilities as a material management weakness in its 1992 Financial Integrity Act report.<sup>3</sup> DOE stated that a Department-wide program was needed to plan for, acquire, maintain, modernize, replace, and/or dispose of its facilities' infrastructure.

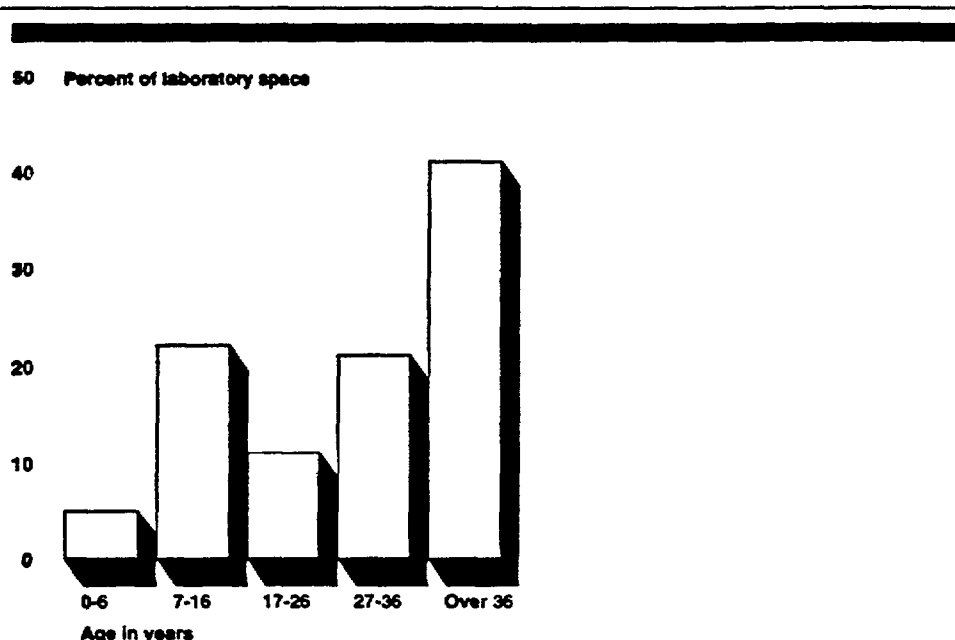
### AGE AND CONDITION OF LABORATORY FACILITIES

As shown in figure 1, about 41 percent of DOE's 47.1 million square feet of laboratory floor space is more than 36 years old, and about 62 percent of the laboratory space is more than 26 years old. (See also table II.1 in enc. II.) DOE's nine multiprogram laboratories, which have 79 percent of the DOE-owned buildings, are among the oldest facilities in the complex. For example, about 85 percent of the laboratory space at both Lawrence Berkeley Laboratory and Oak Ridge National Laboratory is at least 26 years old. Los Alamos National Laboratory's 1996 Institutional Plan notes that after 20 years, major building systems begin to fail and maintenance and operating costs increase.

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<sup>2</sup>Department of Energy: National Laboratories Need Clearer Missions and Better Management (GAO/RCED-95-10, Jan. 27, 1995). See the list of Related GAO Products at the end of this report.

<sup>3</sup>Federal Research: Aging Federal Laboratories Need Repairs and Upgrades (GAO/RCED-93-203, Sept. 20, 1993).

**Figure 1: Age of DOE's Laboratory Space**

Source: Prepared by GAO using DOE's data.

Five of DOE's nine multiprogram laboratories have reported that at least 50 percent of their floor space requires rehabilitation or replacement. (See table II.2 in enc. II.) These facilities typically have such problems as obsolete electrical utility systems, leaking roofs and pipes, or inadequate ventilating systems that do not meet industry standards for circulating air through laboratories. In addition, many older laboratories were not designed to meet today's (1) advanced R&D needs for precise measurements by carefully controlling such factors as temperature, humidity, and vibrations and (2) health and safety code requirements.

Laboratories' management reports provided the following examples of substandard facilities that have either affected a laboratory's compliance with regulatory requirements, reduced research capability, or increased a facility's operating costs:

- Oak Ridge National Laboratory, in its 1995 Institutional Plan, reported that its Biology Division's facilities at the Y-12 site have impeded its health effects research on laboratory animals because the buildings are nearly 50 years old and are obsolete. Building deterioration has caused dust and debris to accumulate on animal cage tops and in laboratory areas and offices,

adversely affecting the laboratory's ability to sanitize surfaces and conduct research satisfactorily. Several animal rooms and laboratory areas in the facility have been closed because of water leakage from deteriorated roofs and pipes. The heating, ventilating, and air conditioning system is deteriorating rapidly and does not adequately meet the minimum air exchange rates set by accreditation standards.<sup>4</sup> Furthermore, the Biology Division estimates that approximately 20 percent of its operating budget is spent on utilities and building maintenance due to its deteriorating buildings and obsolete electrical substation. No existing space currently is available for relocating the biology facilities, and laboratory studies show that retrofitting the biology buildings to meet present needs would cost at least as much as a new building. Oak Ridge National Laboratory has proposed to construct a new building but has not received DOE's approval.

- Stanford Linear Accelerator Center (SLAC), constructed between 1962 and 1966, reports increasing failure rates of electrical and mechanical subsystems and components that could seriously interrupt and jeopardize SLAC's research program. A substantial portion of its facilities is reaching a state where maintenance and repairs are either technically very difficult or financially unsound. For example, electric utilities and heating, ventilating, and air conditioning systems, which are approaching the end of their useful lives, require a high degree of maintenance. Spare parts for much of the equipment are no longer available, and extended downtime for repairs is required.
- Pacific Northwest Laboratory's buildings are 25 years old, on average. The laboratory reports that 68 percent of its facilities need to be renovated or upgraded and 16 percent need to be replaced.<sup>5</sup> Vital building systems affecting emergency power; heating, ventilating, and air conditioning; fire protection; air filtration; and waste water piping require renovation or upgrades. Pacific Northwest Laboratory also stated that stairwells, air monitoring systems, and cooling towers need to be repaired or replaced to bring its facilities into compliance with environmental, safety, and health

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<sup>4</sup>The American Association for Accreditation of Laboratory Animal Care has established air exchange and other standards for laboratories where animals are kept.

<sup>5</sup>Pacific Northwest Laboratory's draft 1997 Institutional Plan reflects management's decision to reduce business lines and close several laboratory buildings. As a result, Pacific Northwest's plan shows that 34.4 percent of its facilities need to be renovated or upgraded and 29.7 percent need to be replaced.

regulations. The laboratory proposes to replace its accelerator complex and other facilities because repairs are no longer cost-effective.

- Argonne National Laboratory, primarily built in the 1950s and 1960s, rated 45 percent of its facilities substandard. The Argonne-East campus in Illinois has proposed several projects to upgrade or replace electrical services, fire safety systems, the central heating plant, steam distribution, and various roads. The Argonne-West campus in Idaho has proposed various projects to upgrade fire protection systems and correct deficiencies related to roofing and insulation; roads; storm drainage; water supply; deep-well pumps; electrical duct banks and feeders; and steam, condensate, and radioactive liquid waste lines.

### BACKLOG AND FUNDING FOR RENOVATIONS AND UPGRADES

As of March 1996, DOE's laboratories reported that about \$1.3 billion of renovations and upgrades is needed to maintain and modernize research facilities. Facilities managers at some of the laboratories told us that the actual backlog of renovations and upgrades is greater than they had reported because their backlog estimates were limited to their highest-priority projects as a result of funding constraints. As shown in table III.1, \$853.9 million of the backlog represents unfunded GPP projects and \$425.8 million represents unfunded MEL-FS projects. Approximately 76 percent of the GPP backlog is attributable to the nine multiprogram laboratories. Over the next 5 years, DOE's laboratories have proposed renovations and upgrades worth \$1.5 billion.

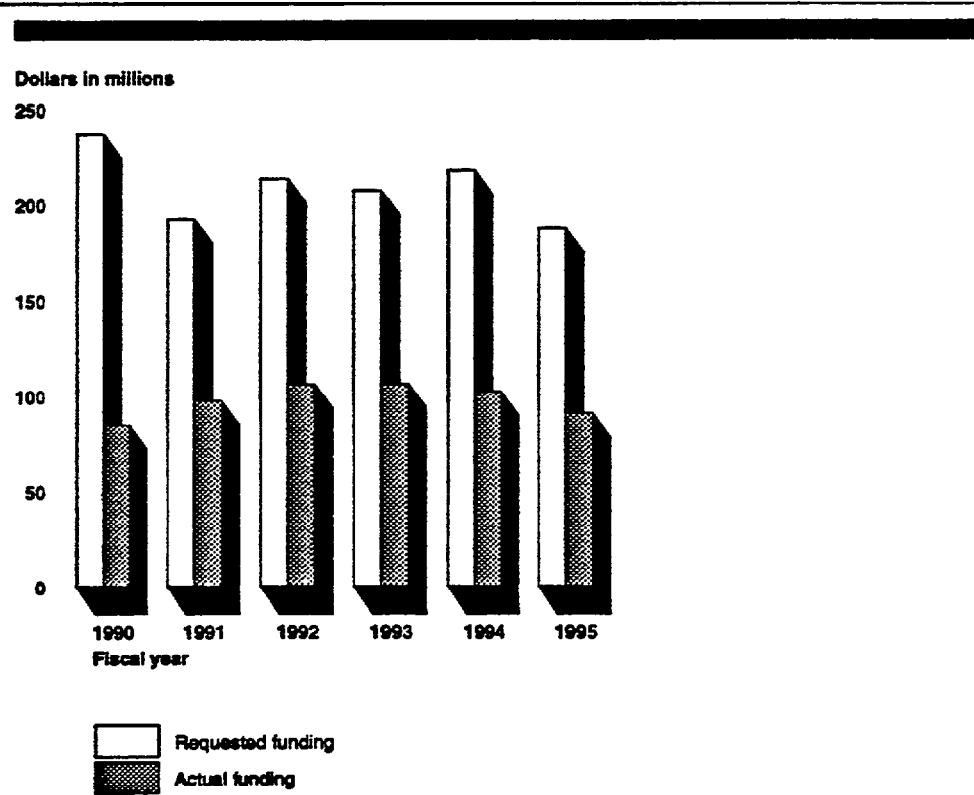
Several laboratories have expressed concern about the size of their backlogs, stating that the level of annual funding is inadequate for facility requirements. For example, SLAC will have to rely primarily on its operating budget, \$124 million in fiscal year 1995, to reduce its estimated backlog of \$58 million. SLAC proposes to support its facilities renewal through \$12.4 million of line-item construction funding and by substantially increasing GPP spending from \$3 million to \$8 million beginning in fiscal year 1998.

Lawrence Berkeley Laboratory has a \$69 million backlog of modernization projects primarily related to buildings and utilities that are 30 to 50 years old. Approximately \$32 million of this backlog represents GPP projects and \$37 million represents MEL-FS projects. According to Lawrence Berkeley's 1996 Institutional Plan, the GPP backlog is not being reduced, as approximately \$3 million of new projects is identified annually, and the laboratory's GPP funding has remained at a constant level for a number of years. Additionally, the laboratory projects that it needs a \$5 million increase in annual MEL-FS

funding. Even at higher funding levels, the laboratory indicates that full modernization, which involves removal of many substandard facilities, will require a long-term 20-year investment from the MEL-FS program.

Laboratory backlogs are attributable to historical funding levels that have been substantially below what laboratories reported were necessary to maintain and restore their facilities. As shown in figure 2, DOE spent \$546 million from 1990 to 1995 to renovate and upgrade its general purpose facilities—less than half of the \$1.3 billion that the laboratories requested. These funding levels decreased each year from 1992 to 1995. About \$80 million—\$51 million for GPP and \$29 million for MEL-FS projects—was spent to reduce laboratory backlogs in fiscal year 1995.

**Figure 2: DOE Funding of Laboratory Renovations and Upgrades, Fiscal Years 1990 Through 1995**



Source: Prepared by GAO using DOE's data.

Resources for renovations and upgrades will likely be further constrained because fiscal year 1996 funding for DOE's laboratories declined slightly from

fiscal year 1995 levels. (See table III.2.) The House and Senate reports accompanying the Energy and Water Development Appropriations Act, 1996, also merged funds specifically designated for GPP, most accelerator improvement projects, and capital equipment with operating funds. Instead, DOE laboratory managers were given the responsibility for allocating R&D funds among research, scientific equipment, capital equipment, and facilities projects. As a result, the conference report accompanying the act did not specifically designate funding for GPP and accelerator improvement projects—\$67.7 million had been designated in fiscal year 1995. However, the conference report increased funding from \$380.4 million in fiscal year 1995 to \$400.3 million in fiscal year 1996 for (1) MEL-FS projects, (2) Nuclear Weapons Stockpile Stewardship Facilities Revitalization Program projects, and (3) other R&D facility renovation, upgrade, and new construction projects that cost more than \$2 million.

### CONCLUSION

DOE will have to make hard choices in developing plans to address its aging laboratory infrastructure. While many of its laboratories report substantial backlogs of renovation and upgrade projects, facility projects along with scientists' R&D projects and capital equipment will compete for tighter funding. Options will include (1) reducing expenses by realigning, closing, or consolidating those laboratory facilities not essential for fulfilling DOE's R&D mission and/or (2) increasing funding to renovate and upgrade those laboratory facilities considered essential to fulfilling DOE's R&D mission.

### AGENCY COMMENTS

A draft of this report was sent to the Department of Energy for comment. In its written comments, DOE agreed with our conclusions. (See enc. IV.) In addition, DOE provided clarifying information to improve the report's technical accuracy, which we incorporated as appropriate.

### SCOPE AND METHODOLOGY

To identify the age of DOE's laboratories, we primarily relied upon DOE's Facility Information Management System data base. We also obtained information about the condition of each laboratory, the backlog of renovations and upgrades, and facilities funding by (1) reviewing the laboratories' Institutional Plans and other related documents; (2) contacting personnel at each laboratory, DOE's operations office, and DOE's program office that has landlord responsibility; and (3) obtaining financial data from DOE's budget



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office. We relied on data that the laboratories provided because no centralized group in DOE gathers information on facilities' requirements and funding or examines landlord performance in maintaining government assets. We did not verify the accuracy of the data that DOE and its laboratories provided. We conducted our work from February through May 1996 in accordance with generally accepted government auditing standards.

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We are sending copies of this report to the Secretary of Energy and the Director, Office of Management and Budget. We will also make copies available to others on request. Please contact me at (202) 512-3841 if you or your staff have any questions.

Sincerely yours,

A handwritten signature in cursive script that reads "Allen Li".

Allen Li  
Associate Director, Energy,  
Resources, and Science Issues

Enclosures - 4

SIZE OF THE DOE LABORATORY COMPLEX IN FISCAL YEAR 1995

Dollars in millions

Laboratory	Number of DOE-owned buildings	Number of staff <sup>a</sup>	Total operating budget <sup>b</sup>
<b>Multiprogram laboratories</b>			
Argonne National Laboratory	111	4,554	\$472.7
Brookhaven National Laboratory	353	3,477	302.9
Idaho National Engineering Laboratory	521	6,003	802.0
Lawrence Berkeley National Laboratory	77	3,433	222.7
Lawrence Livermore National Laboratory	657	7,241	859.2
Los Alamos National Laboratory	1,444	6,211	1,018.8
Oak Ridge National Laboratory	302	4,885	545.2
Pacific Northwest Laboratory	89	3,740	508.0
Sandia National Laboratories	1,043	8,522	1,325.3
Subtotal	4,597	48,066	6,056.8
<b>Program-dedicated laboratories</b>			
Ames Laboratory	10	556	32.1
Fermi National Accelerator Laboratory	431	2,131	164.3
Morgantown Energy Technology Center (METC)	48	359	201.7
National Renewable Energy Laboratory (NREL)	17	876	237.6
Oak Ridge Institute for Science and Education (ORISE)	32	645	81.2
Pittsburgh Energy Technology Center (PETC)	77	292	99.1
Princeton Plasma Physics Laboratory (PPPL)	49	726	106.5
Stanford Linear Accelerator Center (SLAC)	172	1,479	124.2
Thomas Jefferson National Accelerator Facility (TJNAF) <sup>c</sup>	75	551	59.2
Subtotal	911	7,615	1,105.9

Laboratory	Number of DOE-owned buildings	Number of staff <sup>a</sup>	Total operating budget <sup>b</sup>
<b>Mission-specific laboratories</b>			
Energy Technology Engineering Center (ETEC)	60	140	29.5
Environmental Measurements Laboratory (EML)	0 <sup>d</sup>	89	10.5
Inhalation Toxicology Research Institute (ITRI)	73	204	17.4
New Brunswick Laboratory	1	43	5.0
Savannah River Ecology Laboratory (SREL)	36	184	12.0
Savannah River Technology Center (SRTC)	67	1,284	90.0
Subtotal	237	1,944	164.4
<b>Laboratories with cooperative and other agreements</b>			
Bates Linear Accelerator Center	9	70	12.6
Laboratory of Structural Biology and Molecular Medicine	0 <sup>e</sup>	103	7.4
National Institute for Petroleum and Energy Research (NIPER)	39	22	103.4 <sup>f</sup>
Notre Dame Radiation Laboratory	1	37	3.7
Subtotal	49	232	127.1
<b>Total</b>	<b>5,794</b>	<b>57,857</b>	<b>\$7,454.2</b>

Note: No information was obtained for Bettis and Knolls Atomic Power Laboratories, which perform research on naval nuclear propulsion for the Department of Defense.

<sup>a</sup>Staffing numbers represent each laboratory's on-site personnel, excluding contractors.

<sup>b</sup>Includes funding from other federal agencies and private organizations through work for others or as part of a cooperative agreement.

<sup>c</sup>Formerly, the Continuous Electron Beam Accelerator Facility.

<sup>d</sup>DOE leases space for EML through the General Services Administration.

<sup>e</sup>The Laboratory of Structural Biology and Molecular Medicine is located in UCLA-owned buildings.

<sup>f</sup>Includes \$38 million provided by BDM-Oklahoma, Inc.

AGE AND CONDITION OF DOE LABORATORY FACILITIESTable II.1: Amount of Laboratory Space Constructed by Decade

Square feet in thousands

Laboratory	Before 1950	1950s	1960s	1970s	1980s	1990s	Total
<b>Multiprogram laboratories</b>							
Argonne	112	1,614	1,664	255	370	707	4,722
Brookhaven	1,371	713	993	100	580	36	3,793
Idaho Engineering	35	1,255	474	208	994	427	3,393
Lawrence Berkeley	333	486	512	40	199	1	1,571
Lawrence Livermore	383	1,549	917	598	1,427	242	5,116
Los Alamos	297	3,158	955	1,427	1,476	309	7,622
Oak Ridge	449	1,278	843	72	274	98	3,014
Pacific Northwest	66	404	235	211	22	4	942
Sandia	419	2,070	659	429	2,164	71	5,812
Subtotal	3,465	12,527	7,252	3,340	7,506	1,895	35,985
<b>Program-dedicated laboratories</b>							
Ames	58	108	112	0	0	0	278
Fermi	204	2	237	1,041	570	87	2,141
METC	0	120	2	12	135	65	334
NREL	0	0	0	0	115	118	233
ORISE	161	0	56	6	13	0	236
PETC	144	0	0	83	212	0	439
PPPL	0	227	21	46	425	8	727
SLAC	0	0	1,089	183	429	42	1,743
TJNAF <sup>a</sup>	0	0	74	0	95	304	473
Subtotal	567	457	1,591	1,371	1,994	624	6,604

Laboratory	Before 1950	1950s	1960s	1970s	1980s	1990s	Total
<b>Mission-specific laboratories</b>							
ETEC	0	22	174	26	15	0	237
ITRI	0	0	95	124	37	0	256
New Brunswick	0	86	0	0	0	0	86
SREL	0	0	0	26	4	13	43
SRTC	0	512	25	10	24	10	581
Subtotal	0	620	294	186	80	23	1,203
<b>Laboratories with cooperative or other agreements</b>							
Bates	0	0	66	74	17	0	157
NIPER	63	7	57	8	35	1	171
Notre Dame	0	0	65	0	0	0	65
Subtotal	63	7	188	82	52	1	393
<b>Naval Nuclear Propulsion Laboratories<sup>b</sup></b>							
Bettis	74	1,160	174	83	56	19	1,566
Knolls	214	480	210	109	286	22	1,321
Subtotal	288	1,640	384	192	342	41	2,887
Total	4,383	15,251	9,709	5,171	9,974	2,584	47,072
Percent	9	32	21	11	22	5	100

Note: Data were not provided for the Environmental Measurements Laboratory and the Laboratory of Structural Biology and Molecular Medicine because DOE does not own the facilities.

<sup>a</sup>Formerly, the Continuous Electron Beam Accelerator Facility.

<sup>b</sup>Data for Bettis and Knolls Atomic Power Laboratories were included for comparative purposes.

Source: DOE's Facility Information Management System.

Table II.2: Condition of DOE Laboratories

Laboratory	Percentage of facilities built before 1970	Percentage of facilities needing		
		Renovation	Replacement	Total
<b>Multiprogram laboratories</b>				
Argonne	72	40	5	45
Brookhaven	81	29	18	47
Idaho Engineering	52	45	5	50
Lawrence Berkeley	85	69	13	82
Lawrence Livermore	56	29	12	41
Los Alamos	58	44	10	54
Oak Ridge	85	36	22	58
Pacific Northwest	75	68	16	84
Sandia	54	28	4	32
<b>Program-dedicated laboratories</b>				
Ames	100	4	0	4
Fermi	21	0	0	0
METC	37	9	0	9
NREL	0	5	0	5
ORISE	92	31	10	41
PETC	33	6	0	6
PPPL	34	0	9	9
SLAC	62	9	1	10
TJNAF <sup>a</sup>	16	16	0	16
<b>Mission-specific laboratories</b>				
ITRI	37	12	2	14

Laboratory	Percentage of facilities built before 1970	Percentage of facilities needing		
		Renovation	Replacement	Total
New Brunswick	100	0	0	0
SREL	0	0	0	0
SRTC	92	3	0	3
<b>Laboratories with cooperative and other agreements</b>				
Bates	42	0	0	0
Notre Dame	100	60	0	60

Note: Data were not provided for the Environmental Measurements Laboratory and the Laboratory of Structural Biology and Molecular Medicine because DOE does not own the facilities. Also, data were not provided for ETEC and NIPER because DOE has proposed to close or privatize these laboratories after fiscal year 1996.

<sup>a</sup>Formerly, the Continuous Electron Beam Accelerator Facility.

BACKLOG OF RENOVATIONS AND UPGRADES AND AVAILABLE FUNDINGTable III.1: Estimated Backlog of Renovations and Upgrades for General Purpose Facilities at DOE Laboratories (Through Fiscal Year 2000)

Dollars in millions

Laboratory	Estimated cost of backlog of renovations and upgrades			Funding requests for facilities for FY 1996-2000
	General plant projects	Multiprogram facility support	Total	
<b>Multiprogram laboratories</b>				
Argonne	\$50.0	\$117.7	\$167.7	\$151.9
Brookhaven	29.0	95.1	124.1	174.6
Idaho Engineering	200.0	0	200.0	204.9
Lawrence Berkeley	32.0	37.0	69.0	42.9
Lawrence Livermore	81.6	0	81.6	84.7
Los Alamos	0 <sup>a</sup>	0	0 <sup>a</sup>	164.7
Oak Ridge	27.0	148.0	175.0	270.6
Pacific Northwest	40.5	22.5	63.0	47.8
Sandia	191.2	0	191.2	1.9
Subtotal	651.3	420.3	1,071.6	1,201.9
<b>Program-dedicated laboratories</b>				
Ames	2.3	0	2.3	6.0
Fermi	20.0	0	20.0	45.0
METC	25.2	0	25.2	7.1
NREL	7.9	0	7.9	12.6
ORISE	4.5	5.5	10.0	10.0
PETC	18.0	0	18.0	12.4
PPPL	15.5	0	15.5	7.5



Laboratory	Estimated cost of backlog of renovations and upgrades			Funding requests for facilities for FY 1996-2000
	General plant projects	Multiprogram facility support	Total	
SLAC	58.0	0	58.0	47.2
TJNAF <sup>b</sup>	5.0	0	5.0	35.0
Subtotal	161.4	5.5	166.9	190.6
<b>Mission-specific laboratories</b>				
ETEC	0	0	0	0 <sup>c</sup>
ITRI	5.8	0	5.8	2.1
New Brunswick	0.2	0	0.2	0.2
SREL	2.6	0	2.6	5.9
SRTC	24.7	0	24.7	38.5
Subtotal	33.3	0	33.3	47.0
<b>Laboratories with cooperative and other agreements</b>				
Bates	6.8	0	6.8	10.6
NIPER	1.1	0	1.1	0 <sup>c</sup>
Notre Dame	0	0	0	0.4
Subtotal	7.9	0	7.9	11.0
<b>Total</b>	<b>\$853.9</b>	<b>\$425.8</b>	<b>\$1,279.7</b>	<b>\$1,450.5</b>

Note: Data were not provided for the Environmental Measurements Laboratory and the Laboratory of Structural Biology and Molecular Medicine because DOE does not own the facilities.

<sup>a</sup>Los Alamos National Laboratory was not able to provide a meaningful backlog estimate because funding requests are constrained, frequently reflecting DOE program guidance rather than laboratory needs.

<sup>b</sup>Formerly, the Continuous Electron Beam Accelerator Facility.

<sup>c</sup>No renovations and upgrades are proposed because DOE has proposed to close or privatize this laboratory after fiscal year 1996.

Table III.2: DOE Funding of Its Laboratories in Fiscal Years 1995 and 1996

Dollars in millions

Laboratory	Fiscal year 1995	Fiscal year 1996
<b>Multiprogram laboratories</b>		
Argonne	\$452.7	\$389.7
Brookhaven	344.3	344.8
Idaho Engineering	508.7	483.6
Lawrence Berkeley	235.1	224.9
Lawrence Livermore	674.8	694.3
Los Alamos	864.8	922.5
Oak Ridge	575.4	477.9
Pacific Northwest	271.9	245.0
Sandia	956.3	931.6
Subtotal	4,884.0	4,714.3
<b>Program-dedicated laboratories</b>		
Ames	29.5	25.6
Fermi	256.2	260.1
METC	244.8	240.8
NREL	227.6	171.8
ORISE	30.7	21.3
PETC	104.4	126.6
PPPL	130.3	65.0
SLAC	190.5	201.8
TJNAF <sup>a</sup>	70.6	67.9
Subtotal	1,284.6	1,180.9
<b>Mission-specific laboratories</b>		
ETEC	17.9	11.1

Laboratory	Fiscal year 1995	Fiscal year 1996
Environmental Measurements	5.0	4.4
ITRI	9.2	7.5
New Brunswick	4.5	5.0
SREL	0.1	0.1
SRTC	3.6	4.2
Subtotal	40.3	32.3
<b>Laboratories with cooperative and other agreements</b>		
Bates	16.4	16.7
Laboratory of Structural Biology and Molecular Medicine	6.9	4.3
NIPER	27.4	26.2
Notre Dame	3.8	4.0
Subtotal	54.5	51.2
<b>Total</b>	<b>\$6,263.4</b>	<b>\$5,978.7</b>

Note: Funding represents DOE program funding dollars, including prior year balances, for each laboratory. Funding from the Department of Defense and other outside agencies and organizations is excluded.

<sup>a</sup>Formerly, the Continuous Electron Beam Accelerator Facility.

Source: DOE, Fiscal Year 1997 Congressional Budget Request: Laboratory Table.

**COMMENTS FROM THE DEPARTMENT OF ENERGY****Department of Energy**

Washington, DC 20585

JUN 20 1996

Mr. Victor S. Rezendes  
Resources, Community, and  
Economic Development Division  
U.S. General Accounting Office  
Washington, D.C. 20548

Dear Mr. Rezendes:

The Department of Energy (DOE) appreciates the opportunity to review and comment on the General Accounting Office (GAO) draft report entitled DOE Lab Facilities (GAO/RCED-96-183R).

The Department agrees with GAO's conclusions that the Department must address its aging laboratory infrastructure problem by (1) reducing expenses by realigning, closing, or consolidating laboratory facilities not essential for fulfilling DOE's R&D mission and/or (2) increasing funding to renovate and upgrade those laboratory facilities considered essential to fulfilling DOE's R&D mission. Each landlord organization, as well as Field Management, was given an opportunity to review and comment on the draft report. All comments have been discussed with yourself and satisfactorily addressed. A copy of written comments from the Office of Energy Research is enclosed for your consideration.

Sincerely,

A handwritten signature in black ink, appearing to read "A. Tavares".

Antonio F. Tavares, Director  
Office of Project and Fixed Asset Management  
Office of the Associate Deputy Secretary  
for Field Management

Enclosure



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Federal Research: Aging Federal Laboratories Need Repairs and Upgrades (GAO/RCED-93-203, Sept. 20, 1993).

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