

Science Laboratories Infrastructure

Funding Profile by Subprogram

(dollars in thousands)

	FY 2007 Current Appropriation	FY 2008 Original Appropriation	FY 2008 Adjustments	FY 2008 Current Appropriation	FY 2009 Request
Science Laboratories Infrastructure					
Infrastructure Support	12,947	15,427	-140 ^a	15,287	21,308
Construction	29,039	50,029	+1,545 ^{ab}	51,574	88,952
Subtotal, Science Laboratories Infrastructure	41,986	65,456	+1,405 ^{ab}	66,861	110,260

Public Law Authorizations:

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

Public Law 109-58, "Energy Policy Act of 2005"

Public Law 110-69, "America COMPETES Act of 2007"

Mission

The mission of the Science Laboratories Infrastructure (SLI) program is to support Department of Energy research missions at the ten Office of Science (SC) laboratories and the Oak Ridge Institute for Science and Education (ORISE) by funding line item construction, general plant projects, and cleanup and removal of excess facilities to maintain the general purpose infrastructure. The program also supports SC stewardship responsibilities for over 24,000 acres of the Oak Ridge Reservation (ORR) and the Federal facilities in the town of Oak Ridge, and provides Payment in Lieu of Taxes (PILT) to local communities around ANL, BNL, and ORNL.

Significant Program Shifts

The SLI program structure has been revised to group all operations activities under one Infrastructure Support subprogram. These activities include PILT at ANL and BNL, Excess Facilities Disposition (EFD) and Oak Ridge Landlord (ORO).

Infrastructure Modernization Initiative

SLI has proposed an Infrastructure Modernization Initiative to modernize the general purpose infrastructure at SC laboratories. The initiative focuses on increased funding for line item construction. The goals of the initiative are that, by FY 2018, the SC laboratories will have facilities and infrastructure that:

- Offer a safer, healthier and more secure work environment for employees and visitors;
- Have improved mission readiness;
- Are more efficient to operate and maintain, with a minimal deferred maintenance backlog;
- Meet or exceed DOE sustainability goals;

^a Reflects a reduction for the 0.91% rescission in P.L. 110-161, the Energy and Water Development and Related Agencies Appropriations Act, 2008.

^b Includes \$2,000,000 from prior year balances to support the Modernization of Laboratory Facilities project at ORNL, as directed in the Conference Report for the Energy and Water Development and Related Agencies Appropriations Act, 2008.

- Support worker productivity and facilitate effective interaction with colleagues; and
- Provide a satisfactory work environment worthy of world-class scientific institutions and able to help attract and retain high-quality scientific staff.

The FY 2007 new project start, Modernization of Building 4500N Wing 4, Phase I, at ORNL, has been cancelled and its FY 2007 and FY 2008 funding is redirected to a new FY 2008 project entitled Modernization of Laboratory Facilities (MLF) at ORNL as directed in the Conference Report for the Energy and Water Development and Related Agencies Appropriations Act, 2008. This new project will be the first project under SC's Infrastructure Modernization Initiative.

Construction funding increases to fund the three new FY 2009 construction projects which are part of the proposed SC Infrastructure Modernization Initiative. These are: Interdisciplinary Science Building, Phase I, project at BNL; the Seismic Life-Safety, Modernization, and Replacement of General Purpose Buildings, Phase II, project at LBNL; and the Technology and Engineering Development Facility project at TJNAF.

The additional funding for the SC Infrastructure Modernization Initiative in FY 2009 will be provided largely by the permanent transfer of \$32,856,000 formerly used for landlord General Plant Projects (GPP) at SC multiprogram laboratories (Argonne National Laboratory [ANL], Brookhaven National Laboratory [BNL], Lawrence Berkeley National Laboratory [LBNL], Oak Ridge National Laboratory [ORNL], Pacific Northwest National Laboratory [PNNL], and Stanford Linear Accelerator Center [SLAC]) to SLI line item funding. These funds have been transferred to SLI from the following programs: High Energy Physics—\$4,535,000, Basic Energy Sciences—\$11,784,000, Biological and Environmental Research—\$5,000,000, Nuclear Physics—\$7,537,000, and Advanced Scientific Computing Research—\$4,000,000. Those general purpose projects previously funded with SC program budget (landlord) GPP will now be funded with Institutional GPP (IGPP). IGPP, described in DOE Order 430.1, Real Property Asset Management, is funded from laboratory overhead at multiprogram laboratories. Thus, all programs funding work at a site will contribute to the general purpose infrastructure at that site. The expectation placed on the laboratories is that they will fund IGPP at or above their previous GPP levels. SC expects the laboratories to pay the IGPP from overhead without significant change to overhead rates based on two factors: expected growth in overall laboratory funding due to the American Competitiveness Initiative and efficiencies provided by the initiative itself in reduced operation and maintenance costs, reduced footprint, and higher facility utilization.

Proposals for Infrastructure Modernization Initiative projects have been submitted by each laboratory and have been evaluated collaboratively by a group composed of SC Site Managers, laboratory Chief Operating Officers, and the SC Chief Operating Officer. The projects have been evaluated against established criteria pertaining to their suitability of funding under the Initiative (screening criteria) and criteria pertaining to project priority across all laboratories (prioritization criteria). Based on this evaluation, selected projects have been included in the FY 2009 request. All projects will meet DOE requirements for energy efficiency optimization and sustainable environmental stewardship. SLI is developing measures for tracking the progress of the Infrastructure Modernization Initiative in improving mission readiness; operational reliability and safety; and reducing the footprint, deferred maintenance, and the average age of facilities.

Funding for small Excess Facilities Disposition (EFD) projects will be discontinued in FY 2009 because projects funded under the Infrastructure Modernization Initiative will, in many cases, include funds for removal of aged and outmoded facilities that are being replaced by new ones. Small decontamination and decommissioning (D&D) projects can also be funded with laboratory overhead. SC is working with

the Office of Environmental Management to assure that the backlog of large contaminated facilities not addressed via the Modernization Initiative or laboratory overhead funds is properly dispositioned.

Infrastructure Support

Funding Schedule by Activity

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
Infrastructure Support			
Payment in Lieu of Taxes	1,520	1,506	1,385
Excess Facilities Disposition	6,348	8,748	14,844
Oak Ridge Landlord	5,079	5,033	5,079
Total, Infrastructure Support	12,947	15,287	21,308

Description

The Infrastructure Support subprogram supports the SC mission by providing funding for Payment in Lieu of Taxes (PILT) to communities around ANL, BNL and ORNL, removal of excess facilities at SC sites to reduce long-term costs and liabilities, and activities to maintain continuity of operations at the Oak Ridge Reservation (ORR) and the Oak Ridge Service Center (including PILT for communities around ORNL).

Supporting Information

General purpose and site-wide infrastructure includes administrative, research laboratory, user support and testing space, as well as cafeterias, power plants, fire stations, electrical, gas and other utility distribution systems, sanitary sewers, roads, and other associated structures.

The ten SC research laboratories, and ORISE, together have over 1,500 operational buildings and real property trailers, with 19.9 million gross square feet of space. Over 8,500 employees and users of SC research facilities are housed in wooden buildings, trailers or buildings more than 50 years old. The average age of active SC buildings is 35 years. Nine million square feet are 40 years old or older, including 5 million square feet that are over 50 years old.

As required by DOE Order 430.1B, Real Property Asset Management, SC laboratories have prepared Ten Year Site Plans (TYSPs). These plans identify facility and infrastructure investments needed for real property assets to support mission requirements. The 2007 TYSPs are available at: <http://www.sc.doe.gov/sc-80/sc-82/tysp.shtml>.

The TYSPs have identified a number of infrastructure needs that are primarily attributable to:

- the age of the facilities;
- the use of wood and other non-permanent building materials in the original construction of the laboratories in the 1940's and 1950's;
- changing research needs that require:
 - different kinds of facilities (e.g., nuclear facilities, such as hot cells, are in lower demand, while facilities that foster interaction and team-based research are in higher demand) and
 - higher quality facilities (e.g., reduced vibration and temperature variability, better air quality and increased power capability for computers and other electronic equipment);

- obsolescence of existing building systems and components, and changing technology (e.g., digital controls for heating and ventilation systems, fire alarms and security);
- need for improved reliability of utility operations to support the large number of researchers at SC user facilities; and
- changing environmental, safety and health regulations, and security needs.

Detailed Justification

(dollars in thousands)

FY 2007	FY 2008	FY 2009
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Payment in Lieu of Taxes (PILT)	1,520	1,506	1,385
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Provides PILT to support assistance requirements for communities around Argonne National Laboratory and Brookhaven National Laboratory. PILT payments are negotiated between the Department and local governments based on land values and tax rates.

Excess Facilities Disposition (EFD)	6,348	8,748	14,844
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Funding for Excess Facilities Disposition supports removal of excess facilities at SC sites to reduce long-term costs and liabilities. The EFD funding also supports cleanup of facilities for reuse when such reuse is economical and provides needed functionality.

SC is responsible for disposal, by demolition or cleanup for reuse, of facilities at its sites that are not specifically assigned to another DOE Program Office, regardless of which Office in DOE, or its predecessor agencies, may have been responsible for their construction and operation. This includes both those facilities currently awaiting disposal, as well as those which will need to be disposed of in the future, but are still in use. The most recent estimate of the projected cost for disposal of these facilities is expected to exceed \$400M.

Funding for small projects (\$5M or less) will be discontinued in FY 2009 because projects funded under the Infrastructure Modernization Initiative will, in many cases, include funds for removal of aged and outmoded facilities that are being replaced by new ones. Small decontamination and decommissioning (D&D) projects can also be funded with laboratory overhead. SC is working with the Office of Environmental Management to assure that the backlog of large nuclear related D&D projects which comprise the bulk of the backlog is properly dispositioned.

FY 2007 funding supported the projects listed below, allowing the cleanup/removal of an estimated 9,000 square feet of space:

- ANL (\$500,000) – Partial Demolitions of Building 306, Waste Management Operations Facility, A, B, C and Trailer 5, and Cleanup of Building 205, Chemical Technology, Room A-141 (1,600 square feet)
- BNL (\$697,000) – Continued Stabilization of Building 650, Hot Laundry Facility, and Demolition of Building 650A, Storage (1,246 square feet)

LBNL (\$3,850,000) – Continued Demolition of Building 51 and the Bevatron (\$2,450,000), and Removal of the SuperHILAC (\$1,400,000)

(dollars in thousands)

FY 2007	FY 2008	FY 2009
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- ORISE (\$117,000) – Demolition of Bldg. SC-2, Isotope Laboratory, SC-4, Poultry Nutrition Bldg., Bldg. SC-5, Large Animal Containment Facility, and Bldg. 26, Swine Holding Facility (6,593 square feet)
- ORNL (\$1,069,000) – Demolition of Building 2010, ORNL Cafeteria

FY 2007 funding also included \$115,000 to conduct External Independent Reviews (EIRs) of SLI construction projects.

FY 2008 funding will support the projects listed below, allowing the cleanup/removal of an estimated 18,000 square feet of space:

- ANL (\$389,000) – Demolition of Building 40 Calibration Lab (4,896 square feet)
- LBNL (\$8,145,000) – Continued Demolition of Building 51 and the Bevatron (\$6,145,000), and Removal of the SuperHILAC (\$2,000,000)
- ORNL (\$206,000) – Continued demolition of Building 2010, ORNL Cafeteria (12,946 square feet)
- Unallocated (\$8,000) – To be allocated to other priority projects in FY 2008.

In FY 2009, the total of \$14,844,000 of EFD funding will be provided to continue D&D of Building 51 and the Bevatron at LBNL.

The total cost of the Building 51 and Bevatron D&D project is estimated to range from \$65,000,000 to \$75,300,000. The project is scheduled to be completed by FY 2011. The project eliminates a legacy accelerator which ceased operation in 1993 freeing up approximately 3 acres of land—approximately 7.5% of the total usable land at the LBNL site—for programmatic use. Both laboratory and office space are in critically short supply at LBNL. The shortage of onsite space has necessitated leasing of approximately 120,000 square feet of laboratory and office space in offsite buildings at a current cost of approximately \$6.1 million per year. Continued reliance on an aged and decaying physical plant impedes research, reduces productivity, and makes recruitment and retention of top-quality scientists and engineers more difficult.

Oak Ridge Landlord	5,079	5,033	5,079
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This funding supports landlord responsibilities, including infrastructure for the 24,000 acres of the Oak Ridge Reservation outside of the Y-12 plant, ORNL and the East Tennessee Technology Park, and DOE facilities in the town of Oak Ridge. The supported activities include maintenance of roads, grounds and other infrastructure, support and improvement of environmental protection, safety and health, payment of PILT to Oak Ridge communities, and other needs related to landlord responsibilities. These activities maintain continuity of operations at the Oak Ridge Reservation and the DOE facilities in Oak Ridge, and minimize interruptions due to infrastructure and/or other systems failures.

▪ Roads, Grounds and Other Infrastructure Support and Improvements	2,051	2,254	2,401
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Maintenance of roads, grounds, and other infrastructure.

▪ General Plant Projects (GPP)	200	100	100
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Major road repair at the Oak Ridge Reservation.

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
▪ Oak Ridge Payment in Lieu of Taxes (PILT)	2,550	2,550	2,550
Includes PILT to the City of Oak Ridge, and Anderson and Roane Counties.			
▪ Reservation Technical Support	278	129	28
Beginning in FY 2009, the meteorological monitoring system, the public warning siren system, Oak Ridge Reservation command media, and records management will be paid for by the Oak Ridge Reservation occupants. Mapping and Real Estate activities will continue to be supported.			
Total, Infrastructure Support	12,947	15,287	21,308

Explanation of Change

FY 2009 vs. FY 2008 (\$000)

Infrastructure Support

Payment in Lieu of Taxes (PILT)

PILT funding is decreased due to lower than projected actual payments. -121

Excess Facilities Disposition (EFD)

The increase will support the demolition of Building 51 and the Bevatron at LBNL. +6,096

Oak Ridge Landlord

Maintenance of roads, grounds, and other infrastructure is increased (\$147,000). Support for the meteorological monitoring system, the public warning siren system, ORR command media, and records management is decreased (-\$101,000). +46

Total Funding Change, Infrastructure Support +6,021

Construction

Funding Schedule by Activity

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
Construction			
Seismic Life-Safety, Modernization, and Replacement of General Purpose Buildings, Phase II (LBNL)	—	—	12,495
Interdisciplinary Science Building, Phase I (BNL)	—	—	8,240
Technology and Engineering Development Facility (TJNAF)	—	—	3,700
Modernization of Laboratory Facilities (ORNL)	—	9,329	14,103
Physical Sciences Facility (PNNL)	10,000	24,773	41,155
Science Laboratories Infrastructure Project (Various)	19,039	17,472	9,259
Total, Construction	29,039	51,574	88,952

Description

The SLI Construction subprogram funds line item construction projects to maintain and enhance the general purpose infrastructure at SC laboratories.

All candidate construction projects proposed for funding by each laboratory are evaluated collaboratively by SC Site Managers, laboratory Chief Operating Officers, and the SC Chief Operating Officer. The projects are evaluated against established criteria pertaining to their suitability of funding under the Initiative (screening criteria) and criteria pertaining to project priority across all laboratories (prioritization criteria). Based on this evaluation, selected projects are recommended for funding by SC. The projects identified in this budget reflect this process. All SLI projects will meet DOE requirements for energy efficiency optimization and sustainable environmental stewardship. The SLI program is developing measures for tracking the progress of the Infrastructure Modernization Initiative in improving mission readiness, operational reliability and safety, and reducing footprint, deferred maintenance and the average age of facilities.

The SLI Construction subprogram strives to ensure that the funded subprojects are managed effectively and completed within the established cost, scope, and schedule baselines. Performance is measured by the number of all SLI subprojects completed within the approved baseline for cost, scope (within 10%), and schedule (within six months). For example, in FY 2007, the BNL Research Support Building subproject was completed within its cost, scope, and schedule baseline.

The FY 2009 request provides final construction funding for two subprojects, continued construction funding for the Physical Sciences Facility at PNNL and the Modernization of Laboratory Facilities at ORNL (FY 2008 start), initial project engineering and design (PED) funding for three new FY 2009 starts, and initial construction funding for one of those new starts.

The one new FY 2008 start and the three new FY 2009 starts are the initial projects under the Infrastructure Modernization Initiative. These four projects are estimated to reduce deferred maintenance by \$44.2 million and thereby improve the Asset Condition Index of their laboratories. Three of the projects will also replace existing space. A summary of the estimated improvements based

on the conceptual plans for these projects is shown in the table below. These estimates are subject to change.

	Space Removed (square feet)	Deferred Maintenance Reduction		Asset Condition Index	
		(\$000)	% of Total DM	Before	After
Seismic Life-Safety, Modernization, and Replacement of General Purpose Buildings, Phase II at LBNL	43,060	6,100	11%	93%	94%
Interdisciplinary Science Building, Phase I at BNL	100,000-120,000	2,300	2%	94%	94%
Technology and Engineering Development Facility at TJNAF	22,000	4,300	46%	94%	98%
Modernization of Laboratory Facilities at ORNL	—	31,500	17%	89%	91%

Detailed Justification

(dollars in thousands)

FY 2007	FY 2008	FY 2009
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Seismic Life-Safety, Modernization, and Replacement of General Purpose Buildings, Phase II, at LBNL (09-SC-72)

— — **12,495**

This project will remedy high seismic life-safety risks in general-purpose research facilities and lab-wide resource buildings. It will replace three seismically “very poor” and “poor” (University of California classification) buildings and five failing trailers that cannot be cost-effectively upgraded (43,060 square feet) with one new approximately 43,000 square feet general-purpose laboratory/office building. Construction of the new building will allow LBNL to vacate 36,000 square feet of off-site leased space currently costing an estimated \$1.9 million per year. This project will also seismically upgrade Building 85, the site-wide Hazardous Waste Handling Facility, and modernize Building 74, a 45,382 square feet general-purpose laboratory/office building. Demolition costs are included in the project.

Interdisciplinary Science Building, Phase I, at BNL (09-SC-73)

— — **8,240**

This project will replace up to 5 wooden buildings (average age of 68 years) and 3 masonry buildings (average age of 64 years)—an area of 100,000 to 120,000 square feet - with a new building (87,000 to 93,000 square feet) with state-of-the-art laboratories, associated offices and support space. Energy-efficient heating, ventilation, and air-conditioning systems will be installed in the new building, which will support cutting edge experimentation and the operation of sensitive instrumentation. The general purpose and prep laboratories will have a flexible design to accommodate a wide array of research needs.

The support space will include “interaction areas” for informal discussions, a seminar room, and a lunch room.

The buildings that will be demolished by this project have been slated for near-term demolition, pending the availability of funds for their replacement. As such, the estimated value of deferred maintenance that

(dollars in thousands)

FY 2007	FY 2008	FY 2009
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will be eliminated by this project (approximately \$2,300,000) represents only the estimated cost to keep the buildings occupied, rather than the cost of maintaining them at a condition that would be satisfactory for long-term use.

Technology and Engineering Development Facility at TJNAF (09-SC-74)

— — 3,700

This project will address infrastructure inadequacies to support the laboratory's current mission by renovating the 42-year-old Test Lab Building and correcting a critical shortage of space for technology and engineering. The project will renovate about 89,000 square feet in the Test Lab Building and remove over 10,000 square feet of inadequate and obsolete work space. These changes will provide efficient workflow, a safe and sustainable work environment, and functional efficiencies in areas such as clean rooms, chemistry facilities, high bay, and laboratories. The project will also construct a new building which will provide approximately 100,000 square feet of space to eliminate severe overcrowding and improve workflow and productivity by co-locating the engineering and technical functions currently spread across the Laboratory. Energy consumption in the new and rehabilitated building will be reduced by about 30%. This project will also fund the demolition of about 12,000 square feet of dilapidated trailers.

Modernization of Laboratory Facilities at ORNL (08-SC-71)

— 9,329 14,103

This project will construct a new chemical sciences and materials science laboratory that will provide 140,000 to 170,000 square feet of modern, 21st-century research laboratories, with associated space for offices for researchers, small-group conference rooms, and support functions. The new building will allow researchers to move from the 4500 Complex, allowing that space to later be renovated to support general office and support space using laboratory Institutional General Plant Projects (IGPP) funds.

This project will reduce deferred maintenance in laboratory support systems in the 4500 Complex by \$31,500,000 because space previously used as laboratories will change to office and support space, and these systems will no longer be necessary. The phased renovation of the 4500 Complex and movement of staff are not funded as part of this project, but cannot be undertaken without it.

The FY 2008 funding for this project was transferred from the cancelled Modernization of Laboratory, Building 4500N, Wing 4, Phase I, at ORNL subproject (MEL-001-024).

Physical Sciences Facility at PNNL (07-SC-05)

10,000 24,773 41,155

This project will construct new laboratory and office space on the PNNL site north of Horn Rapids Road, and complete life extension upgrades to the 325 Building to accommodate a portion of the existing research capabilities being displaced as a result of the closure and cleanup of facilities in the Hanford 300 Area.

Science Laboratories Infrastructure Project (MEL-001)

19,039 17,472 9,259

▪ **Safety and Operational Reliability Improvements at SLAC (MEL-001-036)**

5,770 — —

Funding for this subproject was completed in FY 2007.

(dollars in thousands)

FY 2007	FY 2008	FY 2009
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<ul style="list-style-type: none"> Building Electrical Services Upgrade, Phase II, at ANL (MEL-001-049) 	3,000	—	—
<p>As a result of reduced funding for construction in the FY 2008 Appropriation, the Building Electrical Services Upgrade, Phase II, subproject MEL-001-049 at ANL has been cancelled. This will allow the remaining two subprojects started in FY 2007, the Seismic Safety Upgrade of Buildings, Phase I, at LBNL, and the Renovate Science Laboratory, Phase I, at BNL to be fully funded and remain on schedule. The FY 2007 funding will be used to address the most critical electrical upgrades at ANL. The remaining scope of the subproject will be funded via laboratory overhead, if high priority, or via a future ANL modernization project.</p>			
<ul style="list-style-type: none"> Renovate Science Laboratory, Phase I, at BNL (MEL-001-050) 	3,158	8,200	6,642
<p>This subproject will upgrade and rehabilitate existing obsolete and unsuitable laboratory facilities into modern, efficient facilities compatible with world-class scientific research.</p>			
<ul style="list-style-type: none"> Seismic Safety Upgrade of Buildings, Phase I, at LBNL (MEL-001-047) 	5,111	9,272	2,617
<p>This subproject will address the seismic vulnerability of laboratory buildings where high life-safety risks have been identified.</p>			
<ul style="list-style-type: none"> Modernization of Laboratory, Building 4500N, Wing 4, Phase I, at ORNL (MEL-001-024) 	2,000	—	—
<p>This project has been cancelled and replaced by the Modernization of Laboratory Facilities project. Accordingly, the \$2,000,000 of PED funding requested in FY 2007, and the \$7,329,000 of construction funding requested in FY 2008 for this project was redirected to the design and construction of the Modernization of Laboratory Facilities project, and no FY 2009 funding is requested for this project.</p>			
Total, Construction	29,039	51,574	88,952

Explanation of Funding Changes

FY 2009 vs. FY 2008 (\$000)

Seismic Life-Safety, Modernization, and Replacement of General Purpose Buildings, Phase II, at LBNL (09-SC-72)

Initial PED (\$+8,680,000) and construction (\$+3,815,000) funding is provided for the project which will remedy high seismic life-safety risks in general purpose facilities at LBNL.

+12,495

FY 2009 vs. FY 2008 (\$000)

Interdisciplinary Science Building, Phase I, at BNL (09-SC-73)

Initial PED funding is provided for design of a new Interdisciplinary Science building at BNL. +8,240

Technology and Engineering Development Facility at TJNAF (09-SC-74)

Initial PED funding is provided for design of a new building and renovation of an existing building at TJNAF. +3,700

Modernization of Laboratory Facilities at ORNL (08-SC-71)

Increased construction funding is provided per schedule for the new laboratory replacement building at ORNL. +4,774

Physical Sciences Facility at PNNL (07-SC-05)

Continued funding for the Physical Sciences Facility (PSF) at Pacific Northwest National Laboratory (PNNL) is provided per project schedule. +16,382

MEL-001, Science Laboratories Infrastructure Project

- **Renovate Science Laboratory, Phase I, at BNL (MEL-001-050)**

Final funding to revitalize and modernize laboratories in two buildings at Brookhaven National Laboratory (BNL) is provided per project schedule. -1,558

- **Seismic Safety Upgrade of Buildings, Phase I, at LBNL (MEL-001-047)**

Final funding for the first phase of seismic and structural safety upgrades at Lawrence Berkeley National Laboratory (LBNL) is provided per project schedule. -6,655

Total, MEL-001, Science Laboratories Infrastructure Project -8,213

Total, Construction +37,378

Capital Operating Expenses and Construction Summary

Capital Operating Expenses

(dollars in thousands)

	FY 2007	FY 2008	FY 2009
General Plant Projects	200	100	100

Construction Projects

(dollars in thousands)

	Other Project Costs (OPC)	Total Estimated Cost (TEC)	Prior Year Appropriations	FY 2007	FY 2008	FY 2009	Unapprop. Balance
09-SC-72, Seismic Life-Safety, Modernization, and Replacement of General Purpose Buildings, Phase II (LBNL), PED and Construction	N/A	91,900– 96,000	—	—	—	12,495 ^a	79,405– 83,505
09-SC-73, Interdisciplinary Science Building, Phase I (BNL), PED	N/A	8,240	—	—	—	8,240 ^b	—
09-SC-74, Technology and Engineering Development Facility (TJNAF), PED	N/A	3,700	—	—	—	3,700 ^c	—
08-SC-71, Modernization of Laboratory Facilities (ORNL), PED and Construction	N/A	90,000– 95,000	—	—	9,329 ^d	14,103 ^d	66,568– 71,568
07-SC-04, Project Engineering Design, Various Locations		8,908	—	8,908	—	—	—
07-SC-05, Physical Sciences Facility (PNNL)	N/A	98,444	10,896	10,000	24,773	41,155	11,620
MEL-001, Science Laboratories Infrastructure Project	N/A	N/A	N/A	10,131	17,472	9,259	N/A
Total, Construction				29,039	51,574	88,952	

^a PED of \$8,680,000 is requested in FY 2009 along with \$3,815,000 of construction.

^b PED only requested in FY 2009. Preliminary estimated TEC range is \$61,300,000–\$66,300,000.

^c PED only requested in FY 2009. Preliminary estimated TEC range is \$66,000,000–\$72,200,000.

^d \$8,700,000 of FY 2008 funding is for PED. The remaining \$629,000 of FY 2008 funding and all of the funding requested for FY 2009 is to be used for construction. Preliminary estimated TEC range is \$90,000,000–\$95,000,000.