

Construction and Major Items of Equipment Science Laboratories Infrastructure

Modernization Initiative Construction

The Office of Science (SC) manages ten world-class laboratories that include hundreds of research labs, offices, and specialized scientific facilities distributed over eight states and accessed by more than 25,000 scientists worldwide. However, many of the buildings in the SC laboratory system have reached or are near the end of their serviceable lives. Many of our laboratory's facilities and utility systems will not be adequate to support the scientific mission in the future because they lack the requirements of a modern research facility. Through the Modernization Initiative, SC will provide capital investment through the Science Laboratories Infrastructure (SLI) budget to make needed improvements to general infrastructure.

- ***Physical Sciences Facility (PSF) Project at Pacific Northwest National Laboratory (PNNL)***

Under an agreement with regulators, DOE's Office of Environmental Management is required to complete surplus facility disposition and remedial action clean-up of the 300 Area of Hanford. With about half of PNNL's space in the 300 Area, SC, NNSA, and DHS have undertaken the Physical Sciences Facility project to help preserve vital capabilities and ensure the long-term viability of the laboratory. This project is constructing approximately 200,000 square feet of new laboratory space, and making needed upgrades to an existing Category II Nuclear Facility (Building 325) to allow its continued use. Construction is underway and forecast to be complete in the second quarter of fiscal year 2011.

- ***Modernization of Laboratory Facilities (MLF) Project at Oak Ridge National Laboratory (ORNL)***



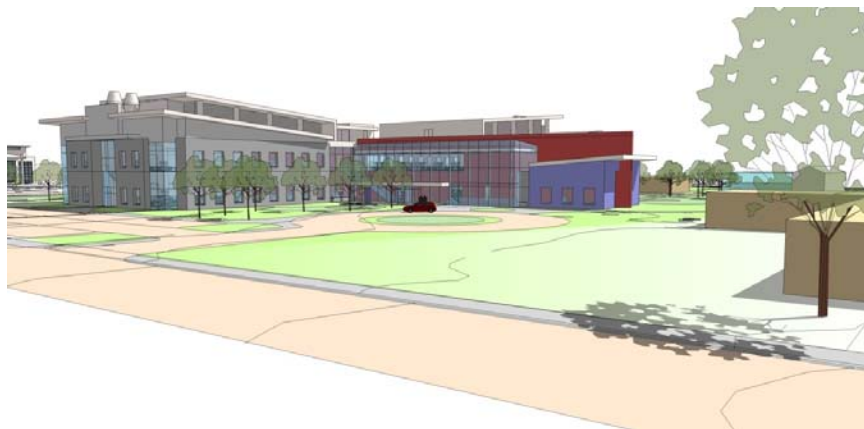
The MLF project at Oak Ridge National Laboratory will construct a new building, consisting of over 100,000 square feet of modern laboratories and associated support space for Materials and Chemical Sciences research and development, allowing researchers to move out of an aging existing facility. The project received Critical Decision (CD) – 1, Approve Alternate Selection and Cost Range, on January 30, 2008. Critical Decision (CD) – 2, Approve Performance Baseline, was received on December 17, 2008. Construction is expected to begin in late fiscal year 2009.

- ***Seismic Phase II Project at Lawrence Berkeley National Laboratory (LBNL)***



Seismic evaluations at LBNL have revealed that several buildings would not be able to survive a major earthquake without significant damage to the structure and appreciable life safety hazard to their occupants. The scope of this project includes the modernization of an existing Life Sciences building, including upgrades to building systems and more than 25,000 square feet of laboratory/office space; construction of 35,000 - 43,000 square feet of new space for multi-disciplinary biology; and seismic upgrades and slope stabilization for the site-wide Hazardous Waste Handling Facility. Facilities rated seismically poor will be demolished to offset new space. The project achieved CD-1 approval on September 23, 2008.

- ***Inter disciplinary Sciences Building I (ISB I) at Brookhaven National Laboratory (BNL)***



The Interdisciplinary Science Building – Phase I project at Brookhaven National Laboratory will construct a new building, consisting of 65,000 to 90,000 square feet of high-accuracy laboratories, offices and support functions for energy-related R&D. Large areas of the Condensed Matter Physics & Materials Science Department (CMPMSD) and of the Energy, Environment & National Security (EENS) Directorate, which house

some of BNL's energy programs, have not been modernized. The ISB-I project seeks to address some of these areas. The basic research programs in CMPMSD that have the potential to be affected by this Acquisition include Neutron Scattering, X-ray Scattering, Condensed Matter Theory, Electron Spectroscopy, Exploratory Synthesis, Correlated Electron Materials, Soft Matter and MBE Synthesis. The project achieved CD-1 on September 23, 2008.

- ***Technology and Engineering Development Facility (TEDF) at Thomas Jefferson National Accelerator Facility (TJNAF)***



Technology & Engineering Development (TED) Building

The Technology and Engineering Development Facility project will renovate Thomas Jefferson National Accelerator Facility's Test Lab Building, which is critical to the laboratory's cryomodule development and production activities. The TEDF project also includes new construction of between 90,000 and 120,000 square feet of industrial assembly, lab and office space that will include laboratories, high-bay space, technical work space, office space, clean-rooms, and associated support and circulation space. The TEDF project is needed to ensure TJNAF facilities can reliably support production of advanced cryomodules and develop enabling technologies with the quality required for ongoing and future projects (e.g., 12 GeV, Free Electron Laser, Spallation Neutron Source upgrade, Relativistic Heavy Ion Collider upgrades, Facility for Rare Isotope Beam) and sustain the current high demand for mounting numerous unique large scale particle detectors. The project achieved CD-1, on September 23, 2008.

- **Research Support Building and Infrastructure Modernization Project at the Stanford Linear Accelerator Center (SLAC)**



As the Stanford Linear Accelerator Center transitions from its single program past to its multi program future, SLAC's goal is a unified culture with a strong sense of community between all the scientific and support functions across the laboratory. The most critical infrastructure need at the site is for modern space sufficient to allow the collocation of the Accelerator Science and Technology program at the laboratory to facilitate communications and cross-program activities. In addition, multiple existing facilities currently housing key operations functions are inadequate to fully support the Laboratory's needs. This project will address these needs by replacing substandard modular buildings and trailers that are well beyond their intended useful life with a new Research Support Building, and modernizing three existing buildings onsite. The project achieved CD-0, Approve Mission Need, on October 10, 2008.

- **Energy Sciences Building (ESB) at Argonne National Laboratory (ANL)**



Argonne National Laboratory currently lacks modern scientific space sufficient to fully support multi-disciplinary collaborative research. This work requires environmentally stable, specialized and flexible facilities to optimize both physical and intellectual discovery. This project will construct a new laboratory building, consisting of 125,000 to 140,000 square feet of modern space to replace some of the oldest and least effective research space for energy-related sciences. The new laboratory will support Argonne's five core areas of energy research: Discovery Synthesis, Biomimetics and Solar Energy,

Catalysis, Fuel Cell Research and Electrical Energy Storage. The project achieved CD-0 on October 10, 2008.

- ***Renovate Science Labs – Phase II (RSL-II) at BNL***



Many scientists at Brookhaven National Laboratory are conducting research in laboratories built over forty years ago. Two such facilities are Buildings 510 (Physics) and 555 (Chemistry). The labs in Building 510 were constructed in 1962 and desperately need renovation and modernization in order to keep pace with the highly complex and rapidly changing technologies required for work on advanced detectors. This work involves sophisticated electronics, high-precision mechanical assemblies, and extremely clean work areas for detectors, such as silicon or gas filled devices. Constructed in 1966, Building 555 has a robust design for chemical sciences research, but has substantial limitations for current research needs. While it has an effective design for wet chemistry, it needs to be renovated to address very serious infrastructure quality issues that have grown over the years. Although the buildings' basic core and shell construction are sound, their lab and office spaces and utilities and environmental support systems are obsolete. This project will upgrade and rehabilitate obsolete systems in these two buildings. The project achieved CD-0 on October 10, 2008.