

**08-SC-71, Modernization of Laboratory Facilities,  
Oak Ridge National Laboratory, Oak Ridge, Tennessee  
Project Data Sheet is for PED/Construction**

**1. Significant Changes**

The most recent DOE O 413.3A approved Critical Decision (CD) is CD-0, which was approved on September 18, 2007 with a preliminary Total Estimated Cost (TEC) range of \$90,000,000 to \$95,000,000.

The Modernization of Laboratory Facilities project (08-SC-71) replaces the Modernization of Laboratory, Building 4500N, Wing 4, Phase I project at ORNL (MEL-001-024), which has been cancelled. Accordingly, the \$2,000,000 of FY 2007 PED funding and the \$7,329,000 of construction funding requested in FY 2008 for MEL-001-024 has been redirected to this project, consistent with Conference Report direction accompanying the Energy and Water and Related Agencies Appropriations Act, 2008.

A Federal Project Director with certification level II has been assigned to this project.

This Project Data Sheet is new for PED/Construction.

**2. Design, Construction, and D&D Schedule**

(fiscal quarter or date)

	CD-0	CD-1 (Design Start)	(Design/PED Complete)	CD-2	CD-3 (Construction Start)	CD-4 (Construction Complete)	D&D Start	D&D Complete
FY 2009	09/18/2007	2Q FY 2009	3QFY 2009	TBD	TBD	TBD	N/A	N/A

CD-0 – Approve Mission Need

CD-1 – Approve Alternative Selection and Cost Range

CD-2 – Approve Performance Baseline

CD-3 – Approve Start of Construction

CD-4 – Approve Start of Operations or Project Closeout

D&D Start – Start of Demolition & Decontamination (D&D) work

D&D Complete –Completion of D&D work

**3. Baseline and Validation Status**

(dollars in thousands)

	TEC, PED	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2009	8,700	TBD	TBD	1,300 <sup>a</sup>	TBD	TBD	TBD

**4. Project Description, Justification, and Scope**

The Modernization of Laboratory Facilities project will construct a new laboratory replacement building with 140,000–170,000 square feet that will provide modern, 21st-century laboratories, with associated

<sup>a</sup> Other Project Costs are funded through laboratory overhead.

space for support functions, for materials and chemical research and development use. The design will use modern, efficient lab planning benchmarks as the basis for determining the size and configuration of space types. The design of the facility will also emphasize more open, collaborative environments and flexibility to respond to future mission changes. In addition to the research laboratories, the facility will include lab offices for researchers, small group conference rooms, equipment areas, restrooms, circulation space, and any needed supporting infrastructure. The design will incorporate all current applicable codes; standards; best management practices; meet sustainability principles and environmental, safety, and health (ES&H) features; and implement Integrated Safety Management at all levels in a new state-of-the-art facility per DOE Policy 225.1.

The Building 4500 Complex, housing the primary chemical and materials science facility at ORNL, does not meet the needs of modern science. The complex is expensive to operate and poses undesirable operational risks. The complex has facilitated the mission at ORNL for over 50 years, but now its condition, configuration, and functionality limit the Laboratory's ability to perform certain aspects of the DOE mission, to conduct research operations safely and efficiently, and to attract and retain top scientists. The complex accounts for one-third of deferred maintenance at ORNL. It houses approximately one-fourth of the staff at ORNL and is the hub or a major pass-through point for site-wide services such as telephone, computing network, and emergency notification systems. The sporadic, unforeseen failures of building systems and inefficient laboratory configurations are limiting the productivity of the complex's 200 laboratories and associated staff.

As ORNL is one of DOE Office of Science's largest laboratories, the success of many of its researchers depends on productive interaction with ORNL research programs. It is imperative that the site infrastructure provide workplace facilities that attract staff and researchers and facilitate their research with modern laboratory configurations and equipment, controllable environments, robust utility and service systems (e.g., computational capability, clean reliable electricity), appropriate space allocation, and state-of-the-art safety systems. This strategy focuses required line item investments on the materials and chemical sciences space that is in poor condition. Failure to renovate or replace the fume hood-intensive wet chemistry laboratories and analytical instrumentation laboratories that demand clean, reliable power supplies will further inhibit scientific output and threaten those missions supported by materials and chemical sciences, core capabilities at ORNL. Failure to provide modern laboratory space for staff and users jeopardizes ORNL's missions to foster a large, productive user program and perform exceptional science for DOE programs in a safe, secure, and environmentally sound manner.

The science operations of research groups are already being affected by the functionality of the old, deteriorating building facilities. The condition of the buildings threatens the viability of several research programs and no longer adequately supports DOE mission accomplishment. It is a deterrent in attracting and retaining scientific staff. Immediate action to house programs in modern, reliable laboratory space is required. Construction of a replacement laboratory facility, including supporting infrastructure, is the most efficient and cost-effective approach to address the need for modern, reliable laboratory space.

FY 2008 funding will be used for design of the building, including project management and all associated support functions and to begin site work. FY 2009 funding will be used for long lead procurement, and to continue preliminary construction activities (site work, foundations, and structural steel).

The project is being conducted in accordance with the project management requirements in DOE O 413.3A and DOE M 413.3-1, Program and Project Management for the Acquisition of Capital Assets, and all appropriate project management requirements have been met.

## 5. Financial Schedule

(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED <sup>a</sup>			
FY 2008	8,700 <sup>b</sup>	8,700	8,000
FY 2009	—	—	700
Total, PED	8,700	8,700	8,700
Construction			
FY 2008	629 <sup>b</sup>	629	—
FY 2009	14,103	14,103	10,500
Outyears	TBD	TBD	TBD
Total, Construction	TBD	TBD	TBD
Total, TEC	TBD	TBD	TBD
Other Project Cost (OPC) <sup>c</sup>			
OPC except D&D			
FY 2007	700	700	700
FY 2008	500	500	500
FY 2009	100	100	100
Total, OPC	1,300	1,300	1,300
Total Project Cost (TPC)			
FY 2007	700	700	700
FY 2008	9,829	9,829	8,500
FY 2009	14,203	14,203	11,300
Outyears	TBD	TBD	TBD
Total, TPC	TBD	TBD	TBD

<sup>a</sup> All design will be completed in less than 18 months.

<sup>b</sup> The Modernization of Laboratory Facilities project (08-SC-71) replaces the Modernization of Laboratory, Building 4500N, Wing 4, Phase I project at ORNL (MEL-001-024) which has been cancelled. Accordingly, the \$2,000,000 of FY 2007 PED funding and the \$7,329,000 of construction funding requested in FY 2008 for MEL-001-024 has been redirected to this project in FY 2008.

<sup>c</sup> Other Project Costs are funded through laboratory overhead.

## 6. Details of Project Cost Estimate

(dollars in thousands)

	Current Total Estimate	Previous Total Estimate	Original Validated Baseline
Total Estimated Cost (TEC)			
Design (PED), Construction			
Design	7,250	N/A	N/A
Construction <sup>a</sup>	14,732	N/A	N/A
Contingency	1,450	N/A	N/A
Total, TEC	23,432	N/A	N/A
Other Project Cost (OPC) <sup>b</sup>			
OPC except D&D			
Conceptual Planning	700	N/A	N/A
Conceptual Design	600	N/A	N/A
Total, OPC	1,300	N/A	N/A
Total, TPC	24,732	N/A	N/A
Total, Contingency	1,450	N/A	N/A

## 7. Schedule of Project Costs

For schedule of project costs, see Section 5, "Financial Schedule."

## 8. Related Operations and Maintenance Funding Requirements

Start of Operation or Beneficial Occupancy (fiscal quarter or date)	3QFY 2012
Expected Useful Life (number of years)	50
Expected Future Start of D&D of this capital asset (fiscal quarter)	4QFY 2062

<sup>a</sup> The FY 2009 Construction request and the TEC displayed are only for long lead procurement and the start of preliminary construction activities. Construction funds will not be executed without appropriate CD-2 and CD-3 approvals.

<sup>b</sup> Other Project Costs are funded through laboratory overhead.

**(Related Funding requirements)**

(dollars in thousands)

	Annual Costs		Life Cycle Costs	
	Current Total Estimate	Previous Total Estimate	Current Total Estimate	Previous Total Estimate
Operations	TBD	TBD	TBD	TBD
Maintenance	TBD	TBD	TBD	TBD
Total, Operations & Maintenance	TBD	TBD	TBD	TBD

**9. Required D&D Information**

Area	Square Feet
Area of new construction	140,000
Area of existing facility(s) being replaced	—
Area of additional D&D space to meet the “one-for-one” requirement	140,000

Name(s) and site location(s) of existing facility(s) to be replaced:

The proposed facility will provide approximately 140,000 GSF of new space. Beneficial occupancy of the new facility is targeted for FY 2012. The space increase for the new facility will be offset by space presently, or planned to be banked at ORNL prior to the end of FY 2012. The ORNL Ten Year Site Plan shows projected offsetting space.

**10. Acquisition Approach**

The new laboratory building will be acquired through competitive procurement. Design will be performed by an architect-engineer (A-E) firm acquired through competitive procurement. The A-E firm will be required to have appropriate laboratory design experience and capability. Construction will be accomplished through a Construction Manager obtained through competitive procurement. The design documents will be in sufficient detail to allow prospective bidders to prepare firm bids or proposals, but also will allow them the flexibility to implement innovative construction approaches, value engineering, and other cost and time savings initiatives. Additionally, the facility will be located on a site which poses minimum unknown conditions.