Charge
Director's CD-2/3a Review of the Utilities Upgrade Project
October 20-21, 2014

Overview The Committee is to conduct a Director's CD-2/3a Review of the Utilities Upgrade Project (UUP) to assess if the project meets the Critical Decision 2/3a (CD-2, Approval of Performance Baseline and CD-3a, Approval to Start Construction, Phase A) requirements as specified in DOE Order 413.3B. UUP received CD-1 Approval on November 15, 2010. The project is scheduled for a DOE CD-2/3a Review on December 9-10, 2014.

Project Description The scope of this project includes design and construction of an upgraded High Voltage Electrical System (H/V) and Industrial Cooling Water System (ICW). The High Voltage Electrical Upgrade includes replacing the Master Substation Control Building and all associated interior components, oil switches, obsolete unit transformers and end of life feeder cables. The Industrial Cooling Water Upgrade includes installing and replacing the ICW watermain, upgrading the master pumphouse and adding secondary pumphouses.

Prior Reviews A DOE CD-0 Review of the UUP Project was conducted in July 2009, which resulted in CD-0 Approval on September 18, 2009, followed by Director's CD-1 Review of UUP on August 6, 2010, and a DOE CD-1 Review on August 24-25, 2010. The project obtained CD-1 Approval on November 15, 2010. *The Committee shall assess the Project's progress on addressing the recommendations from these prior Reviews.*

Readiness for CD-2/3a *The review committee shall assess the readiness of the project for CD-2/3a readiness including the completeness and self-consistency of the technical scope and final design work, cost estimate, schedule and management systems and staffing.* The committee shall evaluate the current schedule, taking risks into consideration, and determine if the Project's scope of work can be accomplished within the approved Total Project Cost (TPC) by the CD-4 date. The committee is to assess if the Project team is in place to implement full construction while providing monthly status/progress reports to DOE and Lab Management on cost/schedule against the Project Plan. The committee shall assess and confirm that ESH&Q has been adequately addressed.

The review committee should address the following specific questions in determining the Project's readiness for CD-2/3a:

Technical

1. Are all Key Performance Parameters (KPPs) sufficiently defined and documented to establish the project performance baseline? Are preliminary designs for all project scope, final design for Phase-A scope, and the respective design review reports complete? Similarly, is the CD-3a scope towards achieving the KPP's sufficiently defined and documented?

2. Is the Project's design appropriately developed and documented in the UUP Technical Design Report (TDR)? Is the final design sufficiently mature such that the Project can initiate procurements and start construction? What outstanding design risks remain? For those elements of the design that are not yet finalized, has the Project shown that there are no major risks or issues that impede a clear path to a final design?

Cost/Schedule/Funding

3. Has the Project developed a resource-loaded schedule that includes the Project's full scope of work? Is the schedule realistic and achievable?

4. Are the cost and schedule estimates complete and credible? Do they include adequate scope, cost and schedule contingency?
5. Has the Project documented the Basis of Estimate (BOE) that supports the baseline cost and schedule presented?
6. Are the project cost and scope consistent with the draft Project Execution Plan and preliminary performance baseline? Has the schedule been appropriately updated? Is adequate cost, schedule and scope contingency identified to mitigate risk prior to and after CD-3a? Is an Earned Value Management System employed and ready to begin monthly PARS-II reporting in a timely manner?

Management

7. Has the Project implemented Risk Management by identifying risks, performing a risk assessment (qualitative and quantitative) and developing mitigation plans? Are there any interdependencies with other projects or significant research operations? If so, have they been identified and are there plans in place to mitigate risk for the CD-3a scope?
8. Is CD-4 achievable with the Project's risks and within the DOE approved Total Project Cost?
9. Has the Project updated required project management documents per DOE Order 413.3B for CD-2/3 and per the Fermilab Project Management System? Are the solicitation documents accurate and sufficiently mature to support the procurement and/or construction of the Phase A scope under CD-3A? Are the Acquisition Strategy and Acquisition Plan updated and approved? Are cost estimates reconciled and bids or quotes in-hand?
10. Are the Project organization and staffing levels adequate to initiate construction and manage the work to achieve CD-4?
11. Are ESH&Q aspects being properly addressed at this stage? Are the Hazard Analysis Report and the final NEPA determination issued and are the permits in place to allow CD-3a scope to commence?
12. Does the Project's process for monthly progress reporting satisfy DOE and Laboratory requirements?
13. Has the Project appropriately addressed the recommendations from prior reviews?
14. Is the UUP Project ready for a DOE CD-2/3a review in December?

In responding to the questions above, the committee should present findings, comments, and recommendations at a closeout meeting with the UUP Project and Fermilab management. A written report is requested within two weeks after the completion of the review.

Approval:

MS for

Nigel Lockyer, Director of Fermilab

9/26/14

Date