Fermilab

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Memorandum

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To: Mike Lindgren, Chief Project Officer
From: Nigel Lockyer, Director
Subject: Director's CD-3c Review of the Mu2e Project

Please organize and conduct a Director's Review of Mu2e on April 19-21, 2016 to assess the project's readiness for the DOE CD-3c review and approval process. On July 10, 2014, DOE approved CD-3a to allow procurement of superconducting cable for the Mu2e solenoids. On March 4, 2015, DOE approved CD-3b to allow construction of the Mu2e Detector Hall and procurement of the Transport Solenoid Modules. CD-3c will approve fabrication/procurement of the remaining baseline scope. The Project is scheduled for a DOE CD-3c review on June 14-16, 2016.

The Mu2e Project will construct a new facility to enable the world's most sensitive search for charged lepton flavor violation by searching for the conversion of a muon to an electron in the field of a nucleus. Mu2e will be ~10,000 times more sensitive than the world's current best limit. The Project consists of modifications to the existing Fermilab accelerator complex, construction of a new external beamline, construction of a new detector hall on the Fermilab site and construction of a new detector to search for muon conversion. The detector includes a complex system of superconducting solenoids, a collimation and charge selection system for producing the world's most intense low-energy muon beam, a low-mass tracking detector operating in vacuum, a crystal calorimeter and a cosmic ray veto.

The review committee should respond to the following questions:

1. **Design and Scope.** Is the design sufficiently mature so that the project can continue with procurement, fabrication, and construction? For those elements of the design that are still not finalized, has the project shown that there are no major issues that need to

be addressed and that they are on a clear path to a final design? Have recommendations from prior independent design reviews been adequately addressed?

2. **Cost and Schedule.** Are the current Project cost and schedule projections consistent with the approved baseline cost and schedule? Has there been adequate progress on the activities approved at CD-3b? Is the contingency adequate for the risks?
3. **Management.** Are the management structure and resources adequate to deliver the proposed final design within the baselines as defined in the PEP? Is the documentation required by DOE Order 413.3B for CD-3 complete? Are critical procurements on track? Have recommendations from previous Independent Project Reviews been adequately addressed?
4. **Environment, Safety, and Health.** Is ES&H being appropriately addressed for this stage of the project?

The committee is asked to present a draft of their report at the review closeout and to issue the final report within two weeks of the review's conclusion.

Nigel Lockyer
Director of Fermilab