

Department of Energy
Washington, DC 20585

JUN 18 2015

MEMORANDUM FOR: STEPHEN MEADOR
DIRECTOR

OFFICE OF PROJECT ASSESSMENT

FROM:

JAMES SIEGRIST  For JS
ASSOCIATE DIRECTOR FOR HIGH ENERGY PHYSICS
OFFICE OF SCIENCE

SUBJECT:

REQUEST TO CONDUCT AN INDEPENDENT PROJECT REVIEW OF
THE LBNF/DUNE PROJECT AT FERMILAB

Based on the recommendation of the Particle Physics Project Prioritization Panel (P5) Fermilab and HEP have taken steps to internationalize the collaboration of the Long Baseline Neutrino Experiment. In January 2015 a new international collaboration was formed, and submitted a Letter of Intent to the Fermilab Program Advisory Committee. This Letter of Intent expressed a vision of LBNE that is larger and more capable than the one approved at CD-1 (Approve Alternative Selection and Cost Range) in December 2012. It is clearly necessary to update the vision for LBNE and to inform DOE of that vision. We now refer to this enhanced project as the Long Baseline Neutrino Facility/ Deep Underground Neutrino Experiment (DUNE/LBNF). In order to evaluate this new concept we have asked Fermilab and the collaboration to update CD-1 planning to be consistent with the current vision of the project. A critical step in this process is a new Independent Project Review to evaluate the updated plan for the international LBNF/DUNE Project.

I request you conduct an Independent Project Review of the LBNF/DUNE Project from July 7-16, 2015 at Fermilab, in order to assess the project's conceptual design and cost range and readiness for DOE's revised Critical Decision CD-1 approval.

LBNF/DUNE will combine a high-intensity neutrino beam and a large-volume precision detector sited in an underground facility a long distance away to make accurate measurements of the oscillated neutrino properties. This large detector will also search for proton decay and neutrinos from supernova bursts.

In your review, please evaluate whether the Project is prepared to enter the next phase, preliminary design. In performance of a general assessment of progress, current status and the identification of potential issues, the committee should address the following specific items:

1. Does the conceptual design provide increased research capabilities envisioned in the mission need? Does the conceptual design report adequately encompass the entire scope of the project, facilities and detectors? Does the conceptual design satisfy the

performance requirements recently recommended by the Particle Physics Project Prioritization Panel?

2. Do the conceptual design report and supporting documentation provide a reasonable basis for the stated cost range and project duration? In establishing the cost range for the DOE scope, has the project clearly identified all scope for which the DOE will be responsible? Is the cost and schedule for the non-DOE scope, to be provided as in-kind deliverables, in the LBNF/DUNE project consistent with historical CERN Core Costing rules?
3. Are ES&H aspects being properly addressed and are future plans sufficient given the project's current stage of development?
4. Is the project organized to successfully deliver all scope – DOE and in-kind? Are interfaces between the facility and the detector clearly delineated and appropriately managed? Does the proposed project team and staffing plan possess appropriate management experience, technical expertise, and laboratory support to produce a credible preliminary design leading to the technical, cost and schedule baseline required for CD-2?
5. Have all prerequisite requirements for CD-1 approval been satisfied? Is the project ready for CD-1 approval?

William Wisniewski will serve as the OHEP contact person for the review. We appreciate your assistance in this matter. As you know, these reviews play an important role in our program. I look forward to receiving your Committee's report within 60 days of the review.

cc: Patricia Dehmer, SC-2
James Siegrist, SC-25
Michael Procario, SC-25
Alan Stone, SC-25
William Wisniewski, SC-25
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