

Charge Letter: LBNC March 2023 Review, March 23-24, 2023

The LBNC is charged by the Fermilab Director to provide external scientific peer review and to monitor the technical progress of the International DUNE collaboration, and those aspects of the facility construction that have direct impact on the DUNE experiment.

For the March 2023 meeting, the LBNC will meet in hybrid mode to review status and progress of LBNF and DUNE. As with other meetings, the LBNC should construct a report in which it acknowledges, comments on, and where appropriate, makes recommendations following the presentations and discussions during the meeting.

The LBNC should hear about the general status of LBNF and DUNE. In addition to updates on major detector systems, the LBNC should also receive updates on activities towards DUNE computing, and ProtoDUNE-II. Along with technical progress, presentations should report on issues and concerns related to supply chains and availability of components.

As design and construction decisions are made by partners contributing to this effort, the LBNC should comment on scope, timeline, and physics performance impacts of these decisions. Where appropriate, the LBNC should also comment on overall coherence of the international effort.

In considering the presentations and material provided for the meeting, attention should be given to prior LBNC recommendations and actions that have been undertaken to address these recommendations. For the DUNE detectors and computing, we would like to continue our work toward uniform and regular reporting and tracking of major DUNE technical milestones.

Other specific areas of review for this meeting should include:

- 1) Overall status and progress of FDR and TDR for FD1 and FD2, respectively, in view of endorsement before the FDC subproject CD2/3 Director's Review anticipated in Summer 2023.
- 2) Overall computing status including interfaces for online and offline, plans and needed R&D for analyzing low energy signals
- 3) Status of simulation and reconstruction and plans for updated sensitivities.

The LBNC should develop a Closeout Report which it should deliver at the end of the meeting. Subsequently this should be refined into a LBNC Meeting report.