

## Neutrino Scope Group

### NSG Committee Report

October 2023

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Nadia Pastrone, Anne Schukraft(absent this time), Evelyn Thomson, Patrice  
Verdier

- ✓ First presentations of DAQ and Software
- ✓ First presentations of ND detectors
- ✓ Three next meetings/reviews in 2024

October 1st, 2023

Charge Letter: NSG October 2023 Meeting, October 19-20, 2023

From: Bonnie Flemming, Fermilab CRO

To: Dmitri Denisov, NSG Chair

For the October 2023 meeting, the NSG committee is asked to focus on DUNE Computing, the Near Detector and assess progress with scope and schedule of DUNE Far Detectors.

DUNE Computing and the Near Detector are not yet ready for full assessment of scope and schedule, but considerable progress has been made in these areas. This meeting will be used to bring NSG up to speed on the status of these two areas. It is expected that coming NSG meetings will review scope and schedule for the Near Detector and for DUNE Computing.

## Status of DUNE Near Detector

### Findings

- The Phase I Near Detector (ND) is intended to support DUNE's Phase I physics goals while Phase II is aimed at meeting P5 goals.
- Phase I currently includes significant U.S. scope. The largest international contributions include contributions from Switzerland for ND-LAr and Italy for SAND. Additional international contributions are also foreseen from the U.K. (for the ND DAQ) and Germany (for TMS, PRISM).
- The civil construction work to create alcove space for SAND in the underground near detector hall is part of the U.S. Project scope (NSCF+B). The SAND detector, its installation and integration, and the LHe cryogenics to support SAND are not part of U.S. Project scope. Fermilab is expected to contribute outside the U.S. Project to install and maintain SAND. The SAND Consortium is aiming to have SAND ready in the 2028 timeframe.

## Comments

- We thank the speakers for the interesting presentations and excellent progress in the ND area.
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- In the future NSG meetings we would like to see a presentation on the coverage of the full scope of the ND including resource needs for each component and the current understanding of who will supply those resources.
  - NSG would like to see a more quantitative presentation of the individual ND elements contributions to the DUNE science goals. This will aid in assessing the impact of potential descoping.
  - NSG would like to have a discussion of descoping and/or staging, including decision dates and impacts of the various options; the DOE boundary conditions/guidelines should also be addressed (i.e. \$200M budget guidance with a scope contingency of 50%).
  - The ND current target CD-2 date is Q3 2025. ND MOU addenda should be prepared in order to identify/finalize all the contributions. We would like to learn about progress at the next NSG meeting.
  - The ND Consortium is currently working on delivering Phase 1. It is understood that there is an ongoing effort on Phase 2 R&D. At the next NSG meeting, we would like to understand potential competition between the two phases, e.g. in terms of resources.

General comments:

- LBNC and NSG charges should be more correlated for the future meetings.
- DUNE should clarify how risks related to non-US project resources are dealt by the experiment.
- NSG expects written comments on the progress with open NSG recommendations at each NSG meeting.

Clarification on one of the open recommendations from previous NSG meeting:

*Credibility of the schedule will be improved by a dashboard showing progress in production of the key components, like LHC magnets production dashboard. Present such dashboard(s) for the FD1 and FD2 components already in production.*

By the first NSG meeting of 2024.

## Restructuring SAND meetings on Tuesday

- Do not distinguish any more between General and Technical
- Have a fix schedule for presentations from the WG
- Starting on Tuesday November 14<sup>th</sup>:
  - ECAL/Magnet                      ➤ 11/14           ➤ 01/09
  - STT                                    ➤ 11/21           ➤ 01/16
  - GRAIN                                ➤ 11/28           ➤ 01/30
  - Software/Physics                ➤ 12/05           ➤ 02/06
  - DAQ/Timing/Calibration      ➤ 12/12           ➤ 02/13