

**Date:** September 28, 2017  
**To:** Mike Lindgren, Chief Project Officer  
**From:** Nigel Lockyer, Director  
**Re:** Director's Progress Review of the Short Baseline Neutrino Program

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**Message:**

Please organize and conduct a Director's Review on November 1-2, 2017 to assess the progress of the Short Baseline Neutrino Program. This review should cover the following aspects of the program:

- Design, construction, and installation of the SBND detector system (TPC, cosmic ray tagger, light collection, electronics, DAQ) and its cryostat;
- Installation of the ICARUS detector;
- Design, construction, and installation of the ICARUS cosmic ray tagger;
- Design, construction, and installation of the necessary support infrastructure such as cryogenic systems, DAQ and overburden;
- Transition to operations

The focus of this review is progress to date versus plan and the forecast for completion of installation of ICARUS and SBND. Topics will include cost, schedule, management, ES&H, and technical readiness for the execution of the remainder of the SBN program. The review committee should respond to the following questions:

1. **Construction and Installation.** Is the overall progress on ICARUS installation, cryogenics and SBND construction consistent with the planned milestones? Are appropriate program driven technical reviews being planned, conducted and responded to? Are interfaces being adequately addressed?
2. **Cost and Schedule.** Are the cost and schedule basis of estimates for remaining DOE-funded work credible? Given the presented funding scenarios, is the SBN construction and installation schedule achievable? Are the schedules for the non-DOE deliverables compatible with the construction and installation schedule?
3. **Management.** Is the program being properly managed for the successful execution of the SBN? Are the projected personnel resources sufficient to complete design, construction, and installation of the SBN program and are these resources likely to be available when needed? Are the remaining significant risks understood and adequately managed? Has the program adequately investigated alternate solutions to address funding shortfalls relative to the baseline program scope? Is the boundary between construction/installation and operations well defined? Are the resources needed for initial ICARUS operations understood and identified?
4. **Environment, Safety, and Health.** Is ES&H being appropriately addressed? Are the required safety approvals on track to meet the schedule?

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



Nigel S. Lockyer  
Director of Fermilab