Date: **April 23, 2018**

To: Bob Tschirhart, 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 June 26th – 27th, 2018 to assess the progress of the Short Baseline Neutrino Program. This review should focus on the technically driven schedule of the following program elements:

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

The focus of this review is the forecast for completing installation of ICARUS and SBND in the context of a technically driven schedule. Topics will include schedule, management, ES&H, and technical readiness to execute the remainder of the SBN program. The review committee should respond to the following questions:

1. **Construction, Installation and Commissioning.**

   a) Is the overall progress on ICARUS installation, cryogenics, construction and commissioning consistent with the planned milestones? Is the process for establishing milestones sound and tractable? Are appropriate program driven technical reviews being planned, conducted and responded to? Are interfaces being adequately addressed?
   b) Is the overall progress on SBND installation, cryogenics, construction and commissioning consistent with the planned milestones? Is the process for establishing milestones sound and tractable? Are appropriate program driven technical reviews being planned, conducted and responded to? Are interfaces being adequately addressed?

2. **Technically driven construction and installation schedule**.

   Is the technically driven schedule and associated milestones complete, comprehensive and achievable with available resources?

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, installation and commissioning of the SBN program and are these resources likely to be available when needed? Are the remaining significant risks understood and adequately managed? Is the boundary between construction/installation and commissioning 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