

# LBNF Hadron Absorber Preliminary Design Review

## Introduction

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25 June 2020



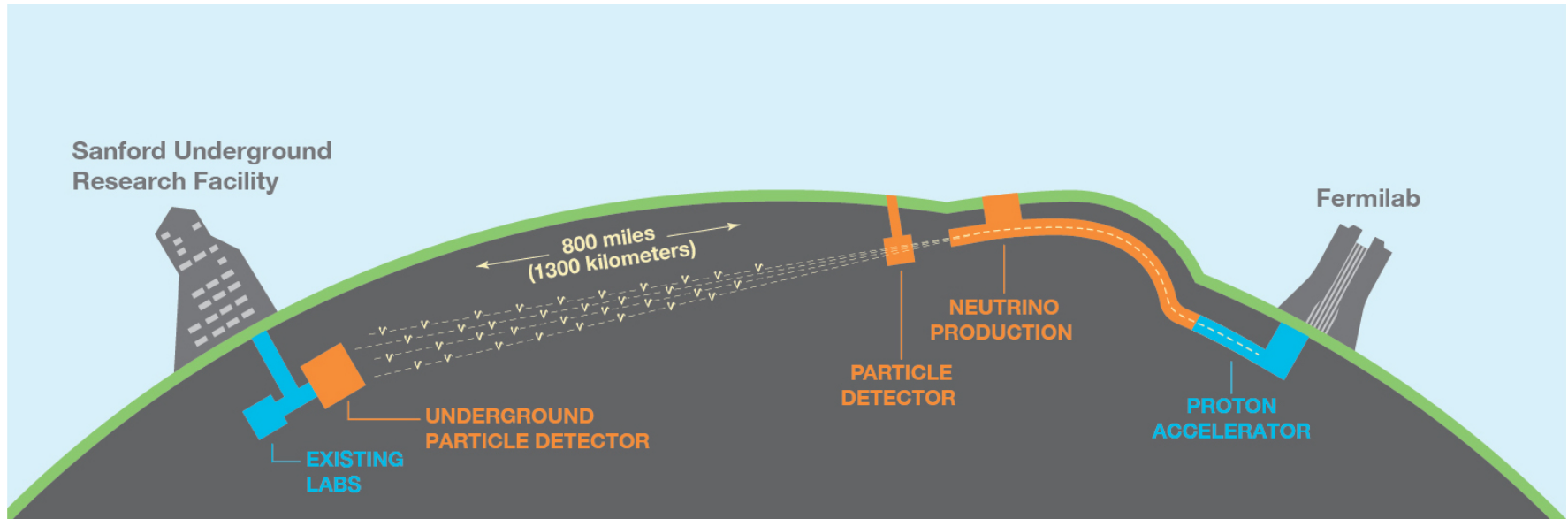
## Review Plan

- Two half days – mornings
  - Agenda and presentations on Indico
    - <https://indico.fnal.gov/event/43920/>
    - Supporting documents: <https://docs.dunescience.org/cgi-bin/private/RetrieveFile?docid=19734>
- Review Committee is encouraged to ask questions anytime
- After each technical talk there is 15 minutes for discussion
- Entire review is being done via Zoom
  - Please turn off video to save bandwidth
    - Seems to be a problem when have more than half a dozen connected
  - Please keep muted when you are not talking

# Introductions

- Review Committee
  - Maurice Ball, Principal Engineer, Fermilab, FE/ENGR, FE/ENGR/ARCH
  - Chris Densham, High Power Targets Group Leader, Rutherford Appleton Laboratory, UK (Chairperson)
  - Russ Rucinski, Senior Principal Engineer, Fermilab, PPD/MED
  - Andy Stefanik, Senior Principal Engineer, Fermilab, ND/TSD/MG
- Presenters
  - Abhishek Deshpande– LBNF Hadron Absorber Technical Manager
  - Vladimir Sidorov – LBNF Hadron Absorber Design Engineer
- Technical Contributions
  - Jim Hysten, Senior Scientist, Fermilab, AD/TSD
  - Ang Lee, Principal Engineer, Fermilab, PPD
  - Kris E. Anderson, Senior Principal Engineer, Fermilab, AD/TSD
  - Brian Hartsell, Senior Engineer, Fermilab, AD/MSD
  - Salman Tariq, Principal Engineer, Fermilab, AD/MSD
  - Nikolai Mokhov, Distinguished Scientist, Fermilab, AD/TSD
  - Kamran Vaziri, Radiation Physicist, Fermilab, ES&H
  - Sergei Striganov, Application Scientist, Fermilab, AD/TSD
  - Eric Pirtle, Designer, Fermilab, AD/MSD
  - Tom Hamernik, Principal Engineer, Fermilab, LBNF/NCFS
  - Kennedy Hartsfield, Principal Engineer, Fermilab, LBNF/NCFS
  - Matt Sawtell, LBNF/Beamlines

# DUNE & LBNF

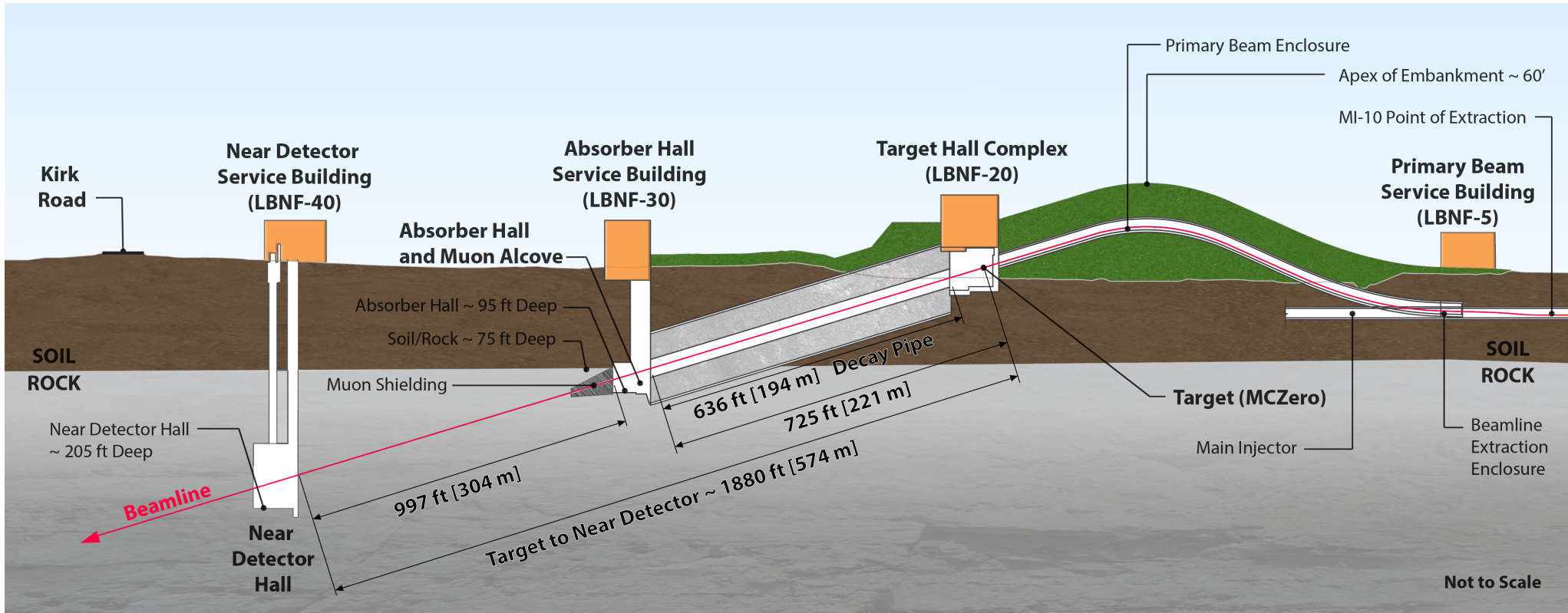


The **Deep Underground Neutrino Experiment** will be a world-leading experiment for neutrino science, potentially transforming our understanding of why the universe exists as it does.

The **Long-Baseline Neutrino Facility** is the infrastructure necessary to send a powerful beam of neutrinos 800 miles through the earth, and measure them deep underground at South Dakota's Sanford Underground Research Facility.

DUNE/LBNF project will be the first internationally conceived, constructed, and operated mega-science project hosted by the DOE in the U.S.

# LBNF Near Site



## Charge -- 1 of 2

1. Does the preliminary design meet the requirements of the beamline components?
2. Is the design maturity presented in the Absorber systems at a level appropriate for the Preliminary Design Phase, as guided by EDMS # 2173197 LBNF / DUNE Review Plan?
3. Have suitable engineering analyses been performed and documented, and peer reviewed, revised, and approved, where applicable?
4. Are the appropriate engineering codes and standards adequately applied to the design?
5. Have the ESH&Q issues been identified and analyzed appropriately?
6. Have the Fermilab Engineering Manual (FESHM) standards been applied to the design?

## Charge -- 2 of 2

7. Have potential design, manufacturing, and installation risks and challenges been identified within the Neutrino Beamline components, and has it been adequately planned to address these during the final design?
8. Are difficult design features and possible prototyping issues identified?
9. Is the level of integration with other LBNF beamline entities appropriate for this stage of the work? That is, are interfaces and collaborative design inputs being managed appropriately?
10. All the Absorber components have gone through an estimation review performed by a Project Estimator. This includes the submission of drawing packages to outside vendors for bid. A cursory check of the Cost and Schedule are desired:
  - a. To question sufficiency of design resources in the light of known complexity of certain situations, such as manufacturing large single-piece aluminum core blocks.
  - b. To review estimated design effort, as preliminary design effort to date, has suggested that drafting resources may be under-estimated.