

SBN Program Status

Peter Wilson – SBN Program Coordinator

Oversight Board

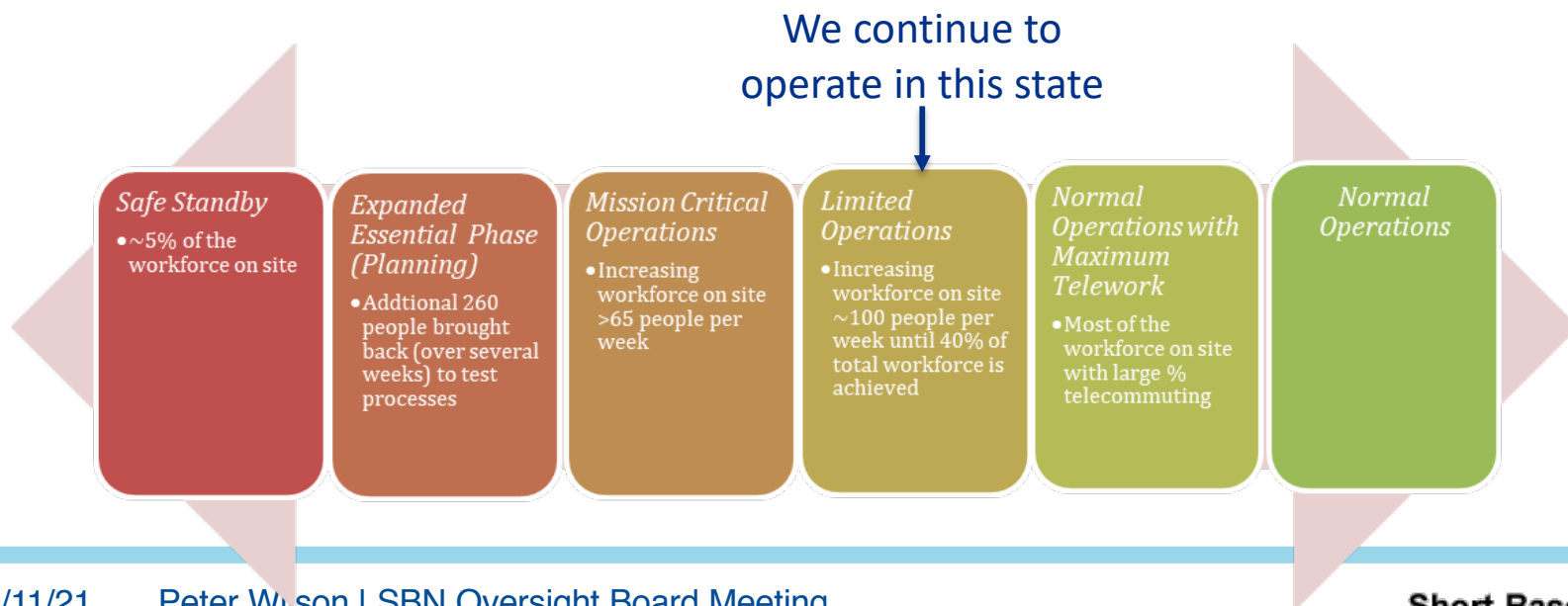
11 June 2021

Outline

- Fermilab COVID 19 Work Status
- SBND technical progress

COVID 19: Fermilab Status

- Work continues on-site with the same access restrictions and safety protocols of the past year
 - Access limited to essential personnel list and day access passes
 - Standard masking and social distancing requirements
 - Any work at close proximity (<6ft) requires extra PPE, written Hazard Analysis and approval by Neutrino Division Head
 - We anticipate an update of the work rules in the next 1-2 weeks
- For planning we are assuming that these access restrictions and work rules will remain in place at least through the summer of 2021



COVID 19 Site Access

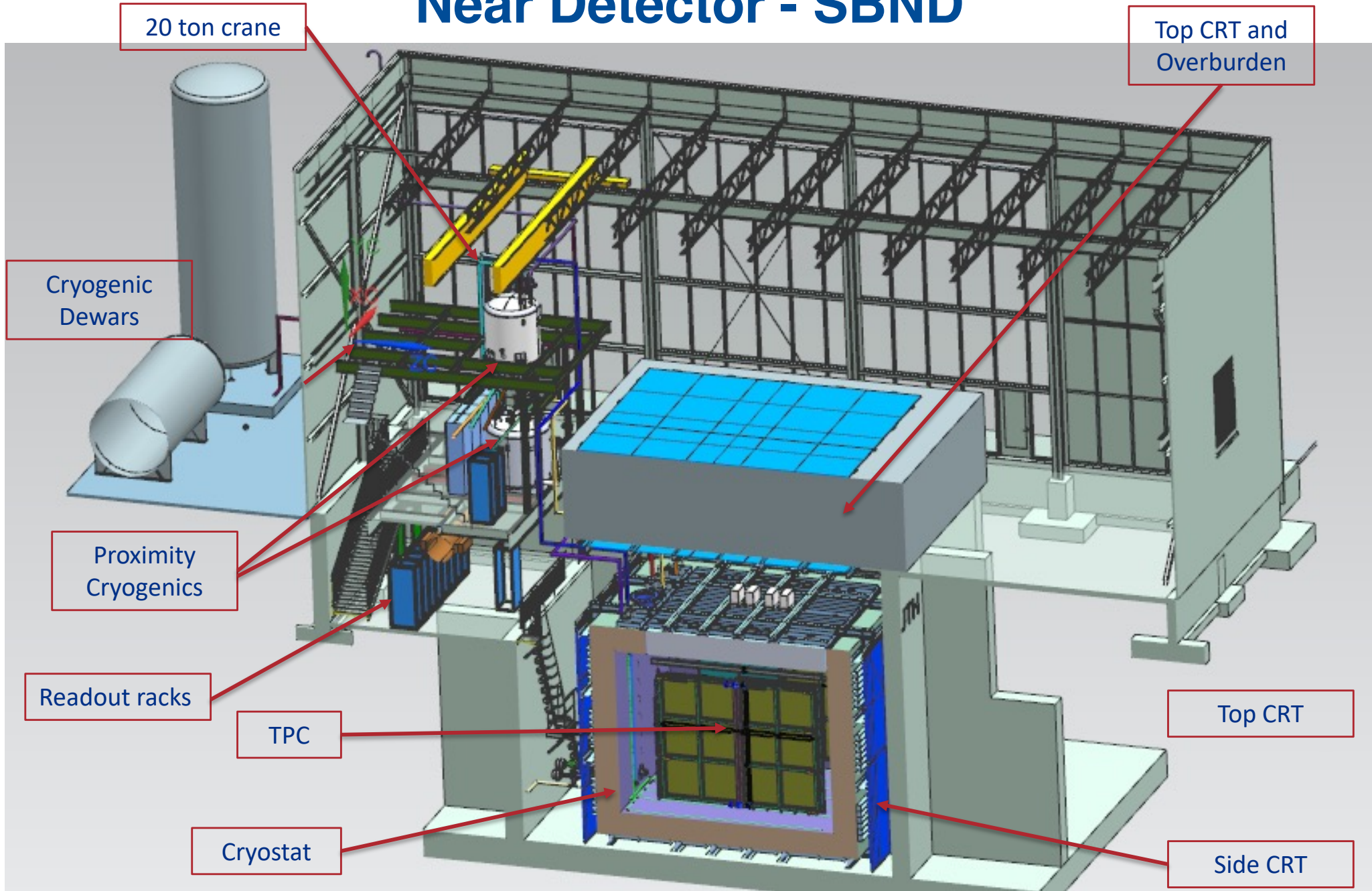
- To access the Fermilab site: must be on either the *Essential Personnel* list or *Daily Access List**
 - Peter Wilson (pjw@fnal.gov) coordinates the *Essential Personnel* list for the Neutrino Division
 - Additions take several weeks to plan – contact me early and ask questions!
 - Sam Zeller (gzeller@fnal.gov) coordinates the *Daily Access* requests for the Neutrino Division
 - Please make requests one week in advance, if at all possible
 - Emergency requests can be no later than noon of the previous business day
 - Priorities are set based on input from spokespeople (or deputies), commissioning, run/technical coordinators and/or relevant Fermilab experiment representatives
- Access is granted to work in a specific facility not anywhere on-site
 - Do NOT go to the High-Rise unless specifically approved

*Additional access lists for limited access to the Daycare Center and Village Housing for people not on the Essential Personnel list

Travel Guidance

- Requirements for Users and Business travellers can be found at: [Fermilab COVID Travel Requirements](#)
- These provide rules for both domestic and international travel.
- Please note that these rules are updated as state and/or DOE rule are updated
 - Most recently updated on April 8
- Note that international travelers still require special approval by the Directorate/DOE.
 - Will provide letters of invitation demonstrating national interest for visa applications
 - This process can take many weeks

Near Detector - SBND



Light Systems (WBS 2.04)

from Vishvas
Pandey

PMT System

- Reception Tests
 - All 24 PMT boxes are tested and ready.
 - PMT QA/QC benchmark database is created from the reception tests.
- All (10) diffusers and diffuser mounts are fully assembled at LANL and are ready to be shipped.



*PMT resistance tester
(made by Paul/Linda)*

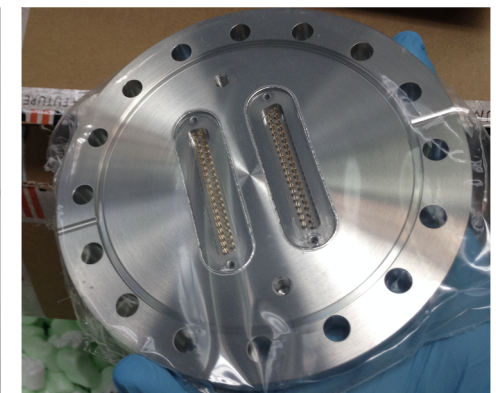


X-ARAPUCA System

- Shipping from Brazil
 - APSAIA read out boards (V1730s) arrived at FNAL. The CAEN crate is already at FNAL.
 - X-ARAPUCA feedthrough Tee and APSAIA feedthrough are being prepared to be shipped to FNAL.



CAEN crate and readout board



APSAIA feedthrough

DAQ and Electrical Installation (WBS 2.07)

from Bill
Badgett

- Began TPC Detector and Cold Electronics Power rack installation
- Planning PDS readout and power racks installation
- Set up and configured DCS (Slow Controls) production network
- Installed production DCS server and moved DCS processes to their final home
- Installed production Timing interface server
- Set up production 10 gigE DAQ production network, begin testing TPC readout there
- Continue TPC readout stress tests and continue trigger integration
- Planning cable tray layout for top of the detector

SBND Assembly (WBS 2.08)

from Nicola McConkey &
Roberto Acciarri

- Clean tent is complete and cleaned
- APA hangers are being fabricated in the Fermilab machine shop – **APA critical path**
 - ~2 month delay - supply issues for large cross-section SS bar
- APA support beams completed and being cleaned onsite
 - Preparing for test installation in atf today or next week
- Test installation of CPA beam in atf two weeks ago
 - good practice for CPA installation
- Unfortunately, the FR4 H-brackets that are part of the CPA hanger system were fabricated with wrong fiber alignment – **CPA critical path**
 - sending back to company for replacement
 - ~1 month schedule delay
- Maintaining two parallel plans for assembly with either CPA or APA going first
 - fabrication schedule for APA hangers and H-brackets will decide
 - CPA could be installed in June pending on H-bracket replacement
- All CE hardware (Faraday shields, cable trays, ...) arrived
 - test fitted several pieces around the APA plane in the clean tent
 - cable tray assembly started in the Hurricane deck



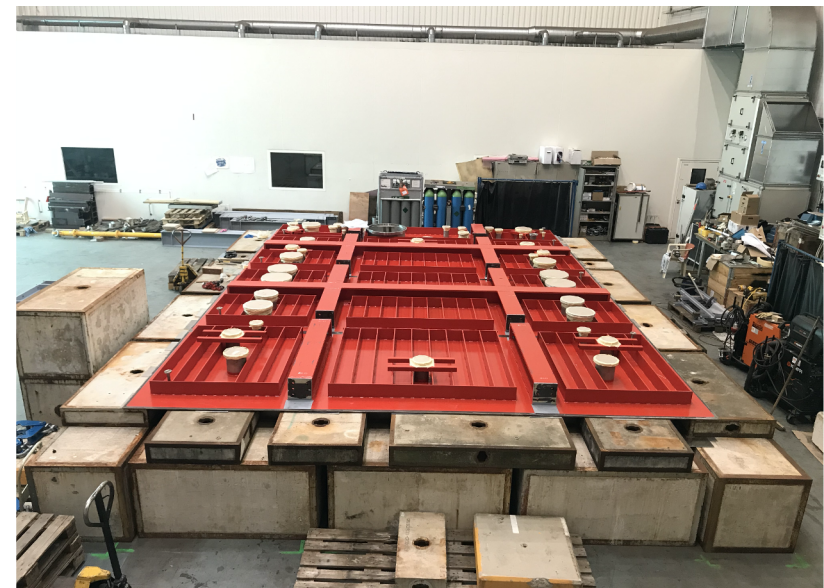
Thumbs up for the Faraday shield test fit

SBND Cryostat (2.09)

- Top cap was test assembled at CERN before shipping
 - Mockup of exact cryostat dimensions
 - date of shipping and test fitting/ installation sequence to be worked into the cryostat installation schedule
- Stairs and decking installation started on the warm vessel
- **Last shipment of membrane cryostat materials arrived**
- **Cryostat installation plan**
 - contract almost ready to be placed by CERN
 - Installation is foreseen in phases (**see next slide for details**)
 - Detail planning meetings between FNAL & CERN started in late May



Cryostat material in the warehouse



Top cap test assembly at CERN

Cryostat Installation Plan - outline

- Installation is foreseen in four phases
 - stud positioning (short, ~ 2 weeks) – CERN + Contractor + FNAL
 - insulation panel and secondary membrane installation (long, ~ 6 weeks) – Contractor + CERN + FNAL
 - primary membrane installation (long, ~ 6 weeks) – Contractor + CERN + FNAL
 - testing (short, ~ 2 weeks) – CERN + FNAL
- Total work time is ~ 4 months, calendar time about 6 months
 - Team returns home to Europe for several weeks (tbd) between phases
 - some overlap between team members for each installation phase, eg CERN supervisors
- Start date driven by completion of travel/Visa approvals for first team and delivery of tools to Fermilab
 - Earliest installation start: end of July 2021
 - Expect to finalize the schedule around the end of June
 - Will implement the phased installation approach into the project schedule in June/July

SBND Cryogenics (4.03)

- Installation work of dewar piping outside SBND has started
 - Working to complete LN2 dewar
 - All subassemblies ready for LAr dewar
- Controls panel installation and wiring progressing inside SBN ND building
- Primary relief vent design being finalized between engineers and designer
 - started work on installation plan, procurement to follow when design is final



cryogenics piping installation on the outside LN2 dewar.

SBND Schedule

- Expect to complete the cryostat in early CY 2022 – currently critical path
- Expect to have detector ready to move to SBN ND building in early CY 2022
- Final installation of the detector in the cryostat, completion of cryogenics and top of detector installation will take several additional months
- Detector ready to fill in late summer or fall of CY 2022
- Will update milestone projections once the cryostat schedule has been finalized with CERN