MicroBooNE Status Report

M. Toups, MIT

All Experimenters' Meeting

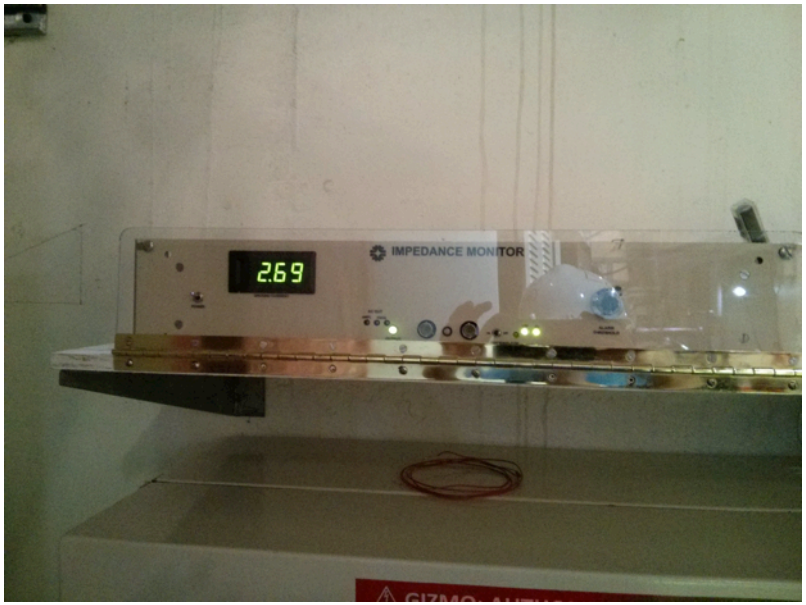
January 12, 2015

Outline

- Final Installation Items
- CD-4
- Cryogenics Punch list
- Transition to Operations
- UV Laser Alignment
- BNB Horn Status
- Conclusion & Outlook

Some Final Detector Installation Items

- Final feed-though cabled up and strain-relieved
- Grounding wrist bands attached to each rack
- "Detector ground" and "building ground" successfully isolated and monitored with impedance monitor



Critical Decision 4

Recommended for Phase II Cryogenic Operation 12/1/2014

Fermilab

December 01, 2014

To: Patricia McBride
Head, Particle Physics Division

From: Jay Theilacker
Chair, Large Quantity Liquid Argon Cryogenic Safety Review Panel

Subject: MicroBooNE Cryogenic Phase II Operation Recommendation

The Panel has reviewed the documentation for the MicroBooNE cryogenic system Phase II operation in accordance with Mike Lindgren's charge of February 11, 2010. Our conclusion is that cryogenic aspects of the system, its enclosures, and associated infrastructure allow operation which is safe for people and the environment. In reaching that conclusion, we have confirmed that those requirements of the Fermilab Environmental Safety & Health Manual (FESHM) which apply to cryogenic systems have been satisfied.

Official CD-4 granted on 12/22/2014

Operational Readiness Clearance
Authorization to operate the MicroBooNE Experiment and Associated Electronics
12/10/2014

REVIEWED AND APPROVED BY:	DATE
Particle Physics Division Head Comments/Exceptions:	12/10/2014
MicroBooNE Project Management Comments/Exceptions	12/10/2014
LArTF Area Manager Comments/Exceptions	12/10/2014
13747N Particle Physics/Neutrino Division Senior Safety Officer Comments/Exceptions:	12/10/2014
13747N Committee Chair	12/10/2014

Submitted By:

MicroBooNE Representative	12.10.13

Final Safety Walkthrough 12/10/2014

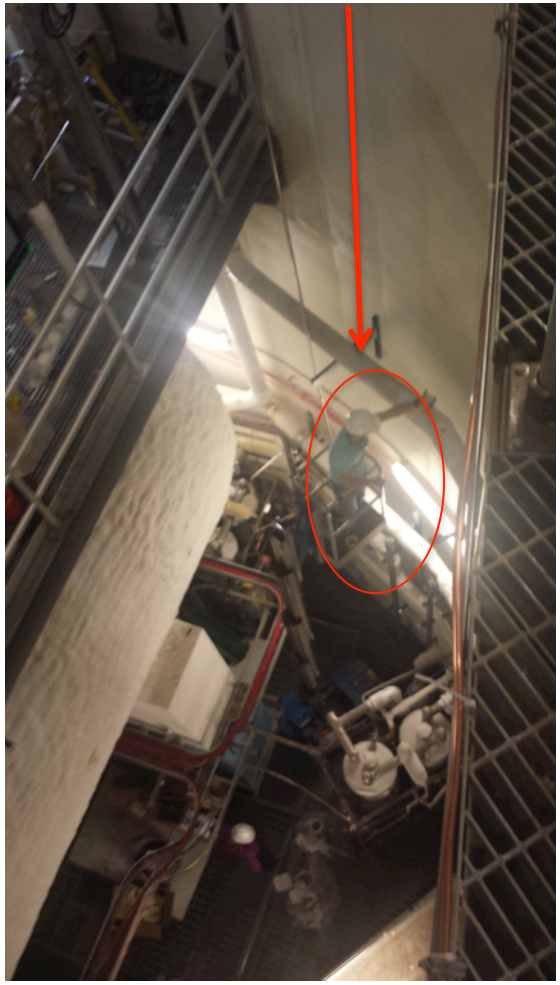
Electronic approvals for this form are acceptable. Please forward your responses to all recipients. A signed paper form (copy) of this document will exist in the Particle Physics Division Office. The original signed document will stay with the experiment requesting clearance.

Rev Aug 2008

Cryogenics Punch List

- Punch list items from cryogenics review nearing completion
  - Final foam insulation of piping (mostly elbows and tees in hard-to-reach places)
  - Brass tagging valves/ instruments

FNAL postdoc Rob Acciarri



Transition to Operations

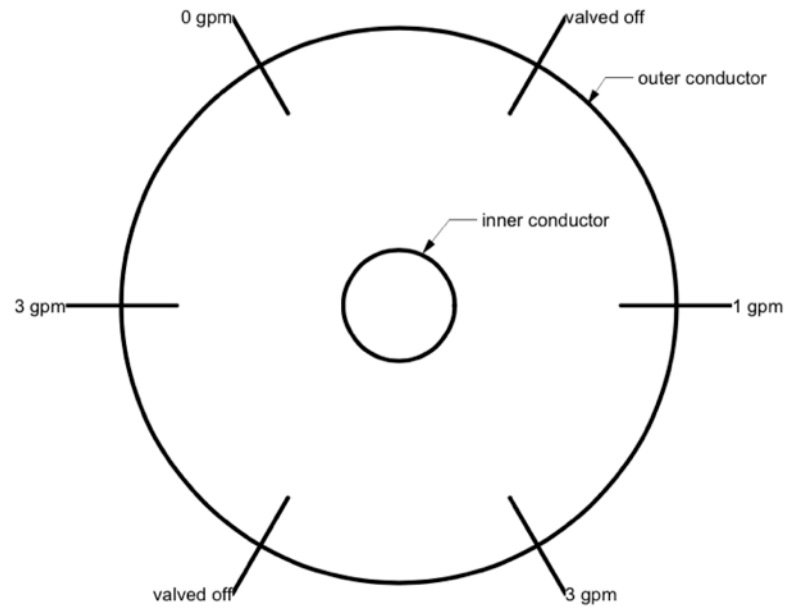
- Project phase: Activities at LArTF overseen by floor manager and dedicated commissioning team leader
  - These responsibilities now pass to commissioners
- Cryogenics commissioning plan developed by Neutrino Division (ND) engineering staff
  - "Team Approach" to procedure development & review, staffing
- Experiment commissioning plan in place since January 2014

UV Laser Alignment

- Class IV UV laser used for TPC calibration
  - Normally laser path enclosed in light-tight box
  - Alignment requires special procedure approved by FNAL ES&H
    - Restricted access to LArTF enforced by sentries at entrance
    - Training for operators
    - Proper PPE

→ Completed successfully in 4 days

BNB Horn Status



Cartoon showing the location of the cooling lines. Nominal flow is 3 gpm per line (18 gpm total). Minimum flow is 9 gpm and symetrical flow.

- Horn blockages not recoverable → Must be replaced.
- Spare horn (and target) in hand, schedule being developed by AD & ND

Conclusion & Outlook

- μBooNE project has received CD-4!
  - μBooNE now proceeds to operations
- Upcoming milestones
  - Cryogenics commissioning
    - Piston purge, GAr cool-down, & LAr fill expected to take ~2 months (pending LAr procurement)
    - Review of cryogenics operations underway (including laser flange review)
  - BNB horn replacement
- After that, more frequent reports at the AEM