

## Lab Status/ AEM Meeting Notes

Monday February 5, 2018

<https://indico.fnal.gov/conferenceDisplay.py?confid=16336>

**Safety Incidents:** None.

### Accelerator Operations:

- NUMI: 159 hrs, 2.06E19; BNB: 160.4 hrs, 1.18E19; Muon: 99.7 hrs; 8.66E17; MTest: 19.9 hrs, MCent:0 hrs
- Linac: Laser notch operational.
- Booster, MI/RR: tuning continues
- NUMI: 725kW w/o SY. Record week.
- BNB: Stable operation.
- SY: Meson Test—Magnet MT3U-1 replacement; ~1-1.5 weeks. Will put a spare in the enclosure since MT3U-2 also has a small leak and may require replacement.
- Muon: Tuning and studies. 16 pulse test today.
- ICW work at Casey's pond pump house went well.
- Tues. Feb. 6<sup>th</sup> shutdown morning 7 am – noon. NUMI, Muon back ~15:00.
- PIP-II injector Test in shutdown.
- FAST: 300 MeV commissioning successful; IOTA installation underway.
- CMTS1: LCLS-II F1.3-07 Tests complete. F1.3-09 in a couple of weeks.
- Schedule: <http://www-ad.fnal.gov/ops/schedule.html>

### MicroBooNE:

- BNB beam to uB up by 60% relative to previous week.
- POT weighted uptime 96%.
- DAQ problems reported last week traced to network configuration updates. SLAM team will restore the machines to original network config.
- Computing -- Job success: 67%; CPU efficiency: 67%; implemented new workflow led to better cpu efficiency but some job failures.

### Minerva:

- Minerva live time 97.8%; Minerva with MINOS 96.5%. (Jan. 25-31)
- Job success 75%, CPU eff. 42%, low due to underestimation by FIFEmon for short jobs.

### NOvA:

- Four week DAQ rate average: 99.7% (ND), 98.45% (FD).
- Job success rate 89%; CPU efficiency 80%.
- Taking advantage of Tues shutdown to swap out bad FEBs, and PS for DAQ nodes and run DAQ tests.

### g-2:

- Several issues last week – trolley, storage ring vacuum, magnet. Stabilized over the weekend. 10 hours of stable production.
- 16 pulse tests today successful. Reached 10 Hz of 11.4 Hz.
- Plans: Fix loose ends and switch to production.
- Computing 86% job success, 54% CPU efficiency.

### PPD Operations:

- CMS
  - Operations: Pixels reinstalled this week with new DCDC convertors - root cause still not completely understood

- Phase 1 Upgrade: HE installation, HB production component procurement ongoing
- HL-LHC Upgrade: Successful CD-1 workshop. Working towards MIP Timing Layer deliverables. Director's review dates April 4-6. Aiming for a CD-1 IPR June 6-8.
- Mu2e
  - Solenoids: PS/DS -- General Atomics working on PS/DS model coil insertion. ASG is scheduled to ship the TS first article this week. TSu/TSd Assembly tooling and air bearing skid was demonstrated at HAB last week.
  - Accelerator: Resonant Extraction Sextupoles fabrication has started.
  - Tracker: progress on straws for the first pre-production panel; wires being strung.
  - Cosmic Ray veto: Scintillator production started on January 16, 2018.
- Astro
  - DES: Year 5 operations to continue 2.5 weeks more. 52 nights for "Y5.5" planned to start in August 2018 and finish around end of the year holidays.
  - DESI: DOE Review at LBNL this week. Flaughner, Kent, Buckley presenting.
  - LSST: DESC collaboration meeting this week at SLAC. Several PPD and SCD members are attending.
- Test Beam: MT3U-1,2 issues as mentioned in AD status. Sporadic beam-usage past week as accesses needed to prepare for the magnet swap. User groups have been informed and rescheduling underway.
- ESH: Improvements to system for preserving depleted uranium in D0 calorimeter DU kept in argon at 4 psig. Efforts made to document system, label piping, restore controls.
- Detectors: ProtoDune R&D - New request for coatings for Arapuca – needed ASAP for test at CERN – will need to clean and re-use old substrates since new material has not arrived. Wire windings: Chambers for AD done. Chambers for Mu2e requested by AD to start end-February 2018

**ND Operations:**

- SBN:
  - Purchase order for upgrade of the FD building cranes awaiting work by procurement; expect contract in place by Feb 7.
  - Specifications for ICARUS cold vessel rigging updating this week.
  - Wire winding progressing well at Daresbury, ~one week behind schedule. First layer of wires complete.
  - Review of the support structures of the top CRT for both the near and far detectors complete and ready for procurement.
- DUNE/protoDUNE:
  - PSL APA#3 ready for shipping to CERN; four all together with one coming from UK. PSL APA#4 frame ready for mesh installation. UK APA#2 (the 5<sup>th</sup> APA) is in the process of winding.
  - DUNE Collaboration meeting held at CERN last week. In conjunction, LBNF/DUNE Far Site interface meeting also held. DUNE-US participated in the APA workshop, on 5 February at Daresbury Lab (UK); focused on consortia planning, APA design and production issues with teams from both the UK and US, including representatives from potential Far Detector APA factory sites.

- DUNE Management:
  - APA production is important for ProtoDUNE schedule. A definitive decision point set for the APA configuration in the cryostat. Decision early February whether to wind a 4th APA in the US, depending on whether the delivery deadline can be met. If the date can't be met, the 6th APA position will be filled by an APA frame, without wires. Frame available in the UK. The frame for the 4th US APA then shipped to the UK to be wound and subsequently to be available for cold-testing.

**LBNF Project:** No report.

**TD Operations:**

Magnets:

- HL- LHC, AUP – Producing coils.
- LCLS II – Tests and qualifications of quads continue.
- Mu2e : Work on solenoids progressing.
- AS – Work on MI spare magnet.
- G-2 – Winding of the Inflector started.
- MDP 15-17 T dipole R&D: Design studies in progress.
- Infrastructure (IB1) – Installing AC power feed to Klystron. Power shutdown 1-2 weeks.

Cryo Sector:

- PIP-II spoke cavity cooldown starting yesterday at Meson Detector Building
- LCLS-II cryomodule tests continue
- In IB1, LCLS-II magnet testing, cavity R&D, production and tests continue
- Engineering working on LCLS-II, Mu2e, PIP-II procurements.

SRF Sector :

- R&D on highQ high gradient n2 infusion; quantum computing cavities tests.
- LCLS-II CM0n cavities (n=3, ... 11) in various stages of processing.
- PIP-II: Spoke cavity tests
- Tesla technology collab meeting in Milan underway.

**Computing Operations:**

CCD:

- Overall good week. Travel records corrupted this morning. Cause unknown. Restoring from transaction logs.
- Secondary LHCOPN circuits down due to a transatlantic fiber cut. No ETA.

SCD:

- Sam web server VM went down Monday evening; rebooted Tuesday morning.
- Batch system host became unavailable Friday morning , fixed by mid-morning.
- FIFE landscape ok.
- Several workflows causing bottlenecks and inefficiencies. Trying to categorize, primarily from analysis users. Work on mitigation based on additional info and analysis.

**Office of Communication:**

- Fermilab family open house coming Sunday afternoon.
- Pechakucha Batavia next Thursday.

**Directorate:**

- Nigel was at CERN last week where DUNE collaboration meeting was held. Large participation with success.
- FRA Board meeting this Thursday.
- Watching budget situation since current CR ends Feb. 8.