

## Lab Status/ AEM Meeting Notes

Monday May 01, 2017

<https://indico.fnal.gov/conferenceDisplay.py?confId=14453>

### Incidents:

- None.

### Accelerator Operations:

- All machines running, but have had problems during the week. Beam time lost due to vacuum problems around the MI52 septa. Needed access to fix and recover. Took more than 2.5 days. Other problem was MI QF ground fault. Also leak in MI52 sump-pump.
- SY running. F2 sump excavation, problems persist. Ran on temporary pump.
- Good news from muon campus. 8 GeV beam sent around the delivery ring.
- NuMI: 1.21E19 POT; BNB: 1.06E19 POT.
- 86.2 hours of beam to SeaQuest, 42.8 hours to MTest, 77.5 hours to MCenter for LArIAT.
- Access for vacuum on 25<sup>th</sup>. Established new multi-mode signal from MI12 to MiniBooNE building for neutrino experiments.
- Future schedule: <http://www-ad.fnal.gov/ops/schedule.html>
- PIP-II Injector test: 2<sup>nd</sup> week of 6-10 week shutdown.
- FAST: 300 MeV beamline upgrade continues.
- CMTS1: LCLS-II proto-type CM @2K. Power tests this week and next.

### MicroBooNE:

- Running well. DAQ uptime 96.3% for the week.
- POT delivered: 1.06E19, recorded: 1.02E19.
- Computing: Job success rate 80%; CPU eff 66%.
- Successfully switched to neutrino campus beam-timing signal.
- Collaboration meeting and analysis retreat last week at Fermilab.
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### MINERvA:

- Uptime 97.5%, with MINOS ND 96.5%; POT delivered = 1.22E19 (Apr. 20 -26).
- Computing job success rate 94%, CPU efficiency 58%, low due to MINOS DB not being able to handle too many jobs. Switching to MariaDB from MySQL DB.
- MINOS magnet tripped three times since yesterday. Investigating.

### NOvA:

- Running well.
- POT-weighted Uptimes: 99% for FD and 99.4% for ND (Last 4 weeks)
- Computing: job success rate 74%, CPU efficiency 67%. Poor eff probably due to problems with bluearc access. Started processing FD cosmic dataset over the weekend.

**SeaQuest:**

- Several minor electronics problems fixed. Running ok.

**g-2:**

- Tested that the trolley traverses ring successfully. Fiber harp commissioning.
- More testing of quads, kickers. Vacuum in the ring achieved; system leak tight.
- Will start running practice shifts this week. Install final tracker module; finalize trolley work; run kicker, quads and trolley in vacuum and in magnetic field.
- Ring to pump down to final state mid-week. Look forward to beam.

**PPD Operations:**

- Test beam
  - o T992 (CMS telescope) started last week and will continue for the next week. Testing sensors and some parts for the CMS outer tracker. They are also sharing their telescope with T1065, which has a component installed now, to be fully installed by May 10. T1065 is testing timing.
  - o T1314 is testing muon detectors for future colliders.
  - o T1041 is working on tests for CMS HGCal. They installed last week.
  - o T1315 will install on Wednesday. They are testing some ideas for a DUNE spectrometer that will map out horn performance.
  - o LHCb VELO group has arrived and will install in the high rate area to test their sensors.
  - o At MCenter, LArIAT had problems with a control crate power supply that took them down overnight last night. They are fixing that now.
- Mu2e
  - o Inner bores for the PS and the DS have been fabricated by a subcontractor to General Atomics. The DS is sufficiently large, built from 8 "belts" welded together and successfully leak checked. The PS inner bore is a single unit. Inner diameters to be measured to assure conformance with specs; this is required to ensure that parts installed inside the warm bores will fit. Leak check completed.
  - o Completed installation of all 96 straws into Tracker panel prototype v2.5 last week. Installed, tensioned and soldered all 96 wires into their tubes last week. Gas manifold will be installed this week followed by leak testing in vacuum.
- P1039, possible successor of SeaQuest using a polarized target, has gotten very favorable reviews. The polarized target was tested at DAB last year. PPD working with the collaboration and AD to refine cost estimates for a proposal to be considered by DOE Nuclear Physics in June. The SeaQuest spectrometer stays the same, but the target pile would be rebuilt to accommodate the new polarized target.

**ND Operations:**

- DUNE:
  - o DUNE-US continues to monitor obligation plans through the rest of FY17.
  - o Reviews at CERN last week – protoDUNE double phase (DP), protoDUNE single phase (SP) cryo and beam instrumentation.
  - o The Materials Test Stand filter was regenerated last week and is back up. FNAL SP group preparing for studies using the test stand.
  - o One half plane left to wind on APA #1. Good progress in UK.
- SBN:
  - o Neutrino Protocol Addendum was signed by CERN and is expected to be signed by US within the next few days.
  - o Two people from CERN and two from INFN Bologna arrived on May 1, as planned, and started work with Fermilab technicians on ICARUS warm vessel installation.
  - o Shipment date for the ICARUS vessels is not yet known. CERN is still working on the transport contract.
  - o Preparations completed at the SBN FD building to start warm vessel installation on May 1. Steel for the first half of the floor staged.

**LBNF Project:**

- Good news about the FY17 budget deal. Once it is passed and signed we can get on with the plan.

**TD Operations:**

- SRF R&D: 12 cavities of different types tested in total.
- LCLS-II: Making progress. Issues with one vendor supply. JLAB working with the vendor and assisting in process has helped. A number of CMs in different stages of assembly and testing.
- PIP-II: Assembly/Tests of 650-MHz single-cell cavities and spoke cavity in progress. MEBT quads from BARC prepared for magnetic measurements.
- Mu2e: Making steady progress on the TS coil module test facility.
- g-2: More than half of the SC inflector cable is insulated. Parts are prepared for winding.
- LARP: Three different 4.2 m production-length coils manufactured simultaneously; preparation for re-testing of the first 150-mm aperture short model with increased axial pre-load.
- 15T Dipole R&D: Conceptual design studies of 15-16 T dipoles continue.
- Infrastructure: Removing old Tevatron equipment, continuing with feeder removal from the TeV PS, cable trays, feeder cables
- Operations:
  - o Shutting down MTA cryogenic system at the end of April, 2017
  - o NML is being prepared for cooldown

- Leak checking LCLS-II CM2 at CMTF; Started cryopant cooldown
- Replacing water piping on the MDB warm helium pumping system
- Plan to cooldown fast cycling superconducting magnet late May
- VCTF is operational; VMTF – preparing for MQXF51c; Stand 3 is ready for cooldown
- Projects: LCLS- II Cryogenic Distribution System; Infrastructure upgrades; Dilution refrigerator procurement

### **Computing Operations:**

#### CCD:

- ATT centrix failure affected ~20 phones on Thursday April 27. ZOOM meetings in One west affected.

#### SCD:

- FIFE: NOvA capitalized on empty CMS Tier-1 slots; peaked at 20K slots over the weekend (10x the NOvA quota). DUNE simulations currently suspended, and sorting out the jobs. Performance issue with lock management on bluearc access since Friday – causing efficiency degradation across all experiments. Under investigation. Queues are draining since yesterday.
- CMS: Better IF usage of empty slots. LPC operations normal.

### **Office of Communication:**

- Flags in the front of WH have been changed. There will be a rotation of flags to make sure that all the countries represented at the Lab will have respective flags flown here at least 6 months out of every two years.
- An educational activity, “High Energy, High Ambition” program, tomorrow in the atrium.

### **Directorate:**

- Hopeful that Congress will pass the 2017 budget in the next day or two. The budget includes funds for LBNF, mu2e, IERC, etc.