

Lab Status / AEM Meeting Notes

Monday November 6, 2017

<https://indico.fnal.gov/event/15687/>

Incidents:

- A contracted technician for TD was inserting pins into a cable mount connector using the correct tool for the task. As they were holding the connector with the left hand and applying force with the right hand the tool slipped off the connector and pierced the left hand thumb. First aid and medication prescribed.

Accelerator:

- BNB: 7.59E18 POT.
- Booster tuning. MI/RR shutdown activities complete, beam permits issued.
- Muon: Tunnel work continues. Safety system testing complete.
- MI & SY120 soon.
- PIP-II Injector test: Planning on 24 hr run – 10mA high power operation, 5ms pulse at 20Hz. Two-week shutdown planned for Nov. 13.
- FAST: Commissioning 300 MeV beamline and working on 50 MeV line lattice.
- LCLSII Prototype Cryo Module: F1.3-06 testing complete this week. Cavities meet 16 MV/m goal.
- Schedule: <http://www-ad.fnal.gov/ops/schedule.html>

MicroBooNE:

- POT weighted uptime: 97%.
- Stable running with 70kV drift HV.
- Collab. Meeting last week.

MINERvA:

- DAQ running smoothly for more than a week.
- MINERvA-specific software installed on spare DAQ computer. Some missing libraries still to be installed.
- Various MINOS powers supply / fans / MINDER board fixes.
- Ready for beam.

NOvA:

- Detectors running stably.
- Uptimes: ND/FD = 98.3%/86.8%
- Wednesday 10/25: Power bump at Ash River due to first winter storm. FD DAQ unstable for following week led to a lot of “DAQ scrubbling.” Turned out problem was due to cleanup script update.

Muon g-2:

- Last week work on Inflector, Kicker & Quads, IBMS, Fiber Harps, Calorimeter, Tracker, Trolley and Cryopumps.
- Main focus for the week: Vacuum work & complete cryo pump infrastructure.
- Preparing for first beam week of Nov. 13.

CMS:

- Current run will end 1 week early to allow access to CMS detector.
- LHC running well. ATLAS & CMS have collected >100 fb⁻¹ since 2010.
- With instantaneous luminosity >2 times design, experiments requesting luminosity leveling.
- CMS has DC-DC converter (introduced during Phase-1 upgrade) issue with CMS pixels. Losing roughly 1/day since Oct 15. Loss happens during power cycling. Currently lost 40 – affects 8% of detector.

PPD:

- DES: This week there is a collaboration meeting in Brisbane, Australia. Several SCD and PPD members are attending.
- CMS just submitted its 700th paper for publication.
- ADMX had a successful operations review last week in Germantown. They showed a three-year plan to search for dark matter axions in the frequency range 0.6- 2 GHz and a preview of the first result which is being prepared for publication.
- Test Beam: Last Friday, Fermilab Testbeam Committee Meeting met to review the FTBF program. Fermilab Test Beam Facility Annual Report for FY17 is available in draft form and should be complete soon. In the MTest beam line and enclosures, T992 (Test of Radiation Hard Sensors for the HL-LHC) is ready and waiting for beam. Experiment T1209 (CMS outer tracker group) will also install on Wednesday and an ORC is scheduled for the same day. These two groups will run for several weeks in MTest. T1297 PixLar ("fourth run of LArIAT using a pixel based PCB readout on the anode plane and modifications to the light readout system") is finishing re-installation in MC7 and may be ready for beam in MCenter by the end of next week.
- Mu2E: Solenoids -- TS prototype high power testing at HAB is underway. Coil was taken up to 500A. As part of the test, the power to the coil was deliberately tripped. When this was done, the dump switch sparked. The system will be retested this week. Tracker -- Fermilab Tracker group is preparing to fabricate a final prototype panel using production panel assembly stations (PAAS). This panel will validate the PAAS, which will be then sent to Minnesota for the start of panel production. Electronics -- Continuing to investigate radiation hard optolink options for the Tracker and the Calorimeter.

ND:

- Director's Review for SBN was on Nov. 1-2

- DUNE: APA#1 was removed from the cold box last week due to an issue with the use of the APA trolley in the cold which was identified as a potential safety concern just prior to the planned cool down.
- The shipping crate for APA#2 was delivered last week.
- LArIAT installation of the pixel plane (replacing wire planes) was completed.
- Near-Infrared test in LAr: Finished assembly of detectors and radioactive source in the inner glass jar. Cryostat closed and being pumped down. Filling with Ar will start on Tuesday.
- The bulk of the 35T liquid argon was transferred to the LAPD. The remaining liquid in the 35T cryostat is being boiled off by flowing warm nitrogen.

LBNF:

- No report.

TD:

- SRF Sector:
 - * R&D: (No new test this week due to construction work) (i) 1.3 GHz N-infusion and doping studies continued with anodization steps. (ii) Nb₃Sn coating is in progress. (iii) Plasma processing continued (iv) Nb/Cu equipment relocated to new location, installation is in progress.
 - * LCLS-II: (i) 1.3 GHz cavities -- CAV0256 Qualified. CAV0259 strong FE, needs re-HPR. CAV0292 Qualified, but strange Q step. (ii) For 3.9 -- 3HRI02 dressed, waiting for test prep. 3HRI03 HTS engineering note approved for exceptional vessel. It is at 4K. 2K pump has booster pump problem which will be resolved this week. (iii) CM03 repair. Dis-assembly is in progress (iv) CM01, CM02 and CM04 pending final modification (cryo-valve gas guard) before shipping to SLAC. (v) CM06 is CMTF. Gradient test completed. Q0 measurement showed lower Q than expected. Q0 will be re-measured after another better cool down. (vi) CM05 is in WS5, beamline leak check, insulating vacuum leak are in progress. (vii) CM07 progressed to WS4 (viii) CM08 progressed to WS3. (ix) CM09 in WS1, String assembly was completed, initial leak check found a bellows flange seal leak in between CAV7 and CAV8. Leak check will be repeated to verify the location. (x) JLAB pCM shipping preparation is in progress.
 - * PIP-II: (i) S113 testing done at STC. A lot of x-rays emission. Testing at STC with active pumping, still waiting for pump cart. (ii) S112 is out of STC. Needs coupler dis-assembly and re-HPR.
- Magnet Sector:
 - * LARP/HL- LHC, AUP – Investigation of issues with Selva winding machine continues, motor controls are in house, rotating table for manual winding in IB3A is used to finish coil 107. Preparation for Collaboration meeting in Spain.
 - * LCLS II – test and qualification of the quadrupoles continues, SPQA116 is completed, SPQA117-120 are in different stages. This week a representative from the vendor (Milhous) visited Fermilab to discuss issues related to recent magnets.

* Mu2e – (i) TS test facility commissioning in HAB is near completion. TS prototype has been cooled down and coil has been excited to 500 A goal is 2100A. Debugging a dump switch problem (ii) Impregnation of the PS/DS model coil maybe postponed to week of Nov. 13 (iii) Work on transfer line bus coating continues.

* Muon G-2 – g-2 Inflector modifications in progress, outer coil ends; preparation in progress for inner layer winding .

* AS – All magnet water leaks in the tunnel for which repairs were requested have been fixed by Accelerator Support technicians during the shutdown. Accelerator Support continues to respond as leaks occur; Production biased cavity solenoid and associated tooling drawings are released for PIP 2 Booster upgrade.

* MDP 15-17 T dipole R&D – Fabrication of 15 T dipole coils is progressing; the winding of the the inner coil layers 1 and 2 is in progress. IB3A curing press repair and re-commissioning continues.

* Infrastructure (IB1) – Removed Tev test stand power system switchyard & buswork. VTS3 floor trench installed by contractors.

- Cryogenic Sector:

* Operations: (i) CMTF: LCLS-II CM6 testing – issue with the cooldown valve (ii) NML (FAST/IOTA) is cold at 2 K (iii) MDB: HTS is cold at 4K, 3.9 GHz cavity is installed; STC is planned to be cooldown; (iv) VCTF is operational; cold testing a Fermilab R&D cavity.

* Projects: (i) LCLS- II Cryogenic Distribution System; Closing out Surface Transferline Production Readiness Review. Supporting Tunnel Components installation (ii) PIP2IT cave transferline preparing for the Final Design Review; Fabricating external transferline; (iii) SuperCDMS-SNOLAB SLAC Director’s Review preparation (iv) Supporting procurement of dilution refrigerators for Axion detector and Quantum Computing initiative; (v) Supporting infrastructure and installation for the NEXUS experiment in the MINOS hall; (vi) Mu2e cryogenics project work; IB-1 warm helium storage improvement project → all pipes are welded; pressure testing.

Computing Operations:

- CCD: Good week.
- SCD: Good week.

Office of Communication:

- No report.

Directorate:

- No report.

AOB:

- None