

## **Lab Status / AEM Meeting Notes**

Monday Sept 18, 2017

<https://indico.fnal.gov/conferenceDisplay.py?confId=15301>

### **Incidents:**

- An AD employee experienced ringing in his ears when a vacuum valve opened unexpectedly near the open end of a beam pipe causing a very loud in-rush of air.
- A PPD employee was injured while travelling for a review. When walking to the bus to get to a review site, the employee tripped and broke a wrist. Because it was not at the actual review site, it is yet to be determined whether this is recordable. Surgery is required.

### **Accelerator Operations / Shutdown Report:**

- Shutdown mostly on track although Muon Campus work a little behind schedule. Hope to catch up by adding crews as other work completes.
- Shutdown cumulative effective dose distribution is OK.
- Will start the process of switching from shutdown mode to start-up mode in next couple of weeks: bringing pond- and LCW-systems back on-line, tunnel cleaning, switching back to operational cores. Then safety systems tests.
- Shutdown duration drivers: Linac Marx Modulator installation and Muon Campus work.

### **g-2:**

- Have been working on improving storage region field uniformity which had deteriorated when 12 x 400lb vac. Chambers were installed. Wedge shims have recovered a good fraction of what was lost. Correction coils working well. More iterations to come.
- Have been working on improving vac., required to allow Quads and Kickers to operate at nominal voltages. Good progress, but with some vac. Loads removed. Building cryopumps to achieve specs when all vac. loads reinstalled.
- The inflector operated stably for ~1 week before shutdown. Investigating some noise issues that result in occasional instabilities.
- Operational Readiness Review scheduled for Oct 2-3.

### **DES:**

- LN2 pump replacement & gasket replacement accomplished successfully.
- Year 5 observations began Aug 15.
- Weather good so far. Through 9/16 observed 16 night-equivalents.
- Significant time given to Targets of Opportunity (much of it LIGO-related).
- Y5 observations are going well. Will need Y5.5 to finish original observing plan.

**PPD:**

- SuperCDMS had a Gateway 2 review at SNOLAB last week (roughly equivalent to CD-3 in the US). The review, and the working meetings with SNOLAB staff, were very positive and beneficial. SNOLAB is keenly interested in getting SuperCDMS built and operating in their underground laboratory as soon as possible. The goal is to finish construction in 2019 and begin operations in 2020.
- CMS: The LHC is in a technical stop now. CMS has recorded over 20 fb<sup>-1</sup>, with another 9+ weeks of 13 TeV pp running remaining in 2017. Plan approved to go to 30cm beta\* which increases integrated luminosity by 5-8%, with peak luminosity going up by 12% (resulting in pileup increasing from 40 to 45).
- CMS HL-LHC
  - o At the LHCC meeting last week, the tracker upgrade, where Fermilab is planning to play an active role, was tentatively approved. Also, the Phase 1 CMS forward pixels detector, which was built at Fermilab and is performing very well, got very positive review comments.
  - o The project team continues refining the project scope to fit within the overall budget. They are now very close to fitting within the overall budget and have ideas of how to complete this. The next step is to look at the profile of the budget and see where we are in terms of schedule.
  - o The project completed two more technical reviews last week (Tracker Forward Pixels and Outer Tracker). The reviews went fairly well, and, especially for the pixel review, provided a lot of good comments and insights.

**ND:**

- DUNE: Far Detector Consortia technical leads were identified and announced 17 September.
- protoDUNE: U.K. APA#1 X-plane is complete. Nearly 500 production ADCs have been tested cold (~10%) and are available for selection to MotherBoards.
- Latest 3x1x1 data sample imported to LArSoft format, uploaded to enstore, and indexed resulting files in SAM.
- SBN: Procurement has received a proposal for upgrade of the two SBN-FD building cranes from 30 US tons each to 37 US tons each. Electrical isolation of warm vessel from building ground verified using GIZMO (Ground Impedance Monitor).

**LBNF:**

- No report.

**TD:**

- LARP/HL- LHC, AUP: CD1/CD3a at the end of the month. Coil production is in progress. MQXFS1c short model is preparing for test.
- LCLS II: CM03 – Disassembly continues will be @ WS3 . CM04 @ CMTS – Stored outside of testing cave for open house. CM05 @ WS3' Magnet current leads to

instrumentation flange soldering in progress. CM06 @ WS5 Pressure test schedule for 9/19. CM07 @ WS3 Alignment work and magnet current leads soldering. SPQA111 quadrupole is cooling down for testing; 113 ready for test; SPQA114-115 are in incoming inspection.

- Mu2e: Transport Solenoid (TS) test facility in HAB near completion. System will be commissioned using prototype coil module, which is in dewar. Cooldown during week of Sep. 18<sup>th</sup>. Mu2e has received from Furukawa 6 units lengths of PS conductor. Mu2e has in house enough conductor to build PS. Conductor will be shipped to GA, all DS conductor shipped to GA already. Final assembly of one-meter model of AC dipole complete. It is currently undergoing testing for the purpose of matching the power supplies to the magnet.
- Muon G-2 : Pulsed septa, MSE003 ready for installation in the tunnel. MSE002 and MSE001 completed. G-2 Inflector production coil winding continues.
- AS: The MLAW magnet assembly is completed, ready for delivery; 9 IDV trim magnets for MI/Recycler have arrived from Buckley Systems and are undergoing incoming inspection, EDWA (spare magnet) final assembly continues with dry fit.
- MDP 15-17 T dipole R&D: Fabrication of 15 T dipole coils in progress; Preparing to wind the inner Layers 1 and 2 of the coils, presentation
- Infrastructure (IB1): MTF, continue to remove the old Tevatron Power System for MTF testing. - We cannot power anymore a Tevatron Dipole – for any reasons, calibrations, searches, axions etc .
- Open house: TD is a hub for the visitors. Expect downsize of the non-essential TD effort after Thursday afternoon.

#### **Computing Operations:**

- CCD: Good week. Primary networking circuit to NOvA failed & secondary did not automatically pick up traffic ... 15mins outage.
- SCD: Good week. CMS: 12% of jobs at NERSC as continued demo with HEPCloud.

#### **Office of Communication:**

- Sept 23rd Open House !

#### **Directorate:**

- Jo Johnson -- U.K. Minister .of State for Universities, Science, Research & Innovation – will be at Fermilab on Thursday.

#### **AOB:**

- None