

## Lab Status / AEM Meeting Notes

Monday July 17, 2017

<https://indico.fnal.gov/conferenceDisplay.py?confId=14901>

### Incidents:

- PPD: Summer student injury due to pulling cable, heavy connector struck face, chipped a tooth, repaired at dentist.
- ESH&Q: Summer student was stung by a yellow jacket while doing field work. First aid. Investigation underway.

### Accelerator Operations / Shutdown Report:

- 16 week shutdown began July 7<sup>th</sup>
- Beam turn-on begins week of Oct 23 with 1-2 weeks startup/commissioning.
- The shutdown duration drivers are: Linac Marx Modulator installation, RR TSP to IP conversion, and Muon Campus Overlap with Switchyard crews.
- Linac work begun on RIL, Marx Modulator project, LE & HE tasks, and general maintenance.
- MI/RR work begun on Q504 beam pipe replacement, TSP upgrade, RR aperture improvement at 520, RR sextupole stand change-out, RRRF anode power supply rebuild.
- External beamline work begun on P3 rough vac, cable mitigation in Meson and Neutrino Muon areas, NuMI general maintenance, NuMI water system repair.
- Muon Campus work on M4 line installation for Mu2e, removal and reinstallation of ring for the M4 line installation for g-2 (done), magnet replacement (internal water leaks).

### Special Topic:

[T 1315: LBNF Spectrometer, Prelim r.f. Bucket Occupancy Measurement](#)

### PPD:

- g-2: Most of the work last week focused on in-vacuum electrostatic quad testing. Some additional fine shimming work of the ring magnetic field commenced. Preparation underway for this week's access of various in-vacuum subsystems (trolley, kicker electrical connections, fiber harps, etc...)
- SCDMS DOE status review at SLAC this week.
- Mu2e DOE IPR review at Fermilab July 25<sup>th</sup>-27<sup>th</sup>.

### ND:

- ICARUS at Burns Harbor. Due to depart July 24, arrive at Fermilab July 26. On site, insulation of warm vessel progressing.
- SBND: Wire winding review in UK July 17. Cold electronics is a concern.
- ProtoDUNE: First APA arrived at CERN. Photon detectors shipped today.
- LArIAT taking data with 3mm wire plane.

**LBNF:**

- Ground breaking at the 4850 level, SURF, July 21.
- Various procurements in progress.

**TD:**

- SRF SECTOR
  - R&D: Two 1.3 GHz 1-cell cavity & one 9-cell cavity baseline tested for R&D follow up. 1.3 GHz cavity low temp N<sub>2</sub>-infusion continues. (two cavities being prepared). Two 650 MHz 1-cell & one 2.6 GHz cavities tested & showed low performance. R&D continues. One 3.9 GHz 1-cell tested & showed record Q<sub>0</sub> for this frequency (1.4e10).
  - LCLS-II: 3.9 9-cell dressed cavity 3HRI03 is being prepared in cleanroom for vertical testing. CM03 warmed up and found two issues and needs to pull out to repair. HOM inspected and found a loose thermal strap. It was repaired and recorded lessons learned. A leak developed upon thermal cycling. It was found around CAV8 section. A roller pin was also found dis-lodged. CM04 new gate valve support was installed and ready for transport to CMTF for testing. CM05 is in WS3. One HOM feedthrough pin was damaged. A procedure was developed to replace the HOM feedthrough. Internal review was completed. It is under external review. CM06 is in WS3 completed alignment. Tuner installation and instrumentation is in progress. CM07 now has seven qualified cavities. There are additional three qualified cavities (CAV0110, CAV0076 and CAV0103) with borderline Q<sub>0</sub> of 2.5e10. They will only be used if no high Q<sub>0</sub> cavities are available from the next few vertical tests. Next test slot is Tuesday (7/18/2017)
  - PIP-II: B9A-AES-008 60um EP (FE mitigation) completed. Waiting for RF tuning. B9A-AES-007 (low Q) chemical re-processing re-scheduled to next week (7/17/2017). Spoke cavities are all being vertical tested before horizontal test. S1H-NR-110 vertical test ready. Test is scheduled on 7/20. S1H-NR-107 HF local swabbed, clean room prepared for vertical testing.
- MAGNETS SECTOR
  - **LARP-HL** - QXFA104: instrumentation in progress; QXFA106: preparation for Nb<sub>3</sub>Sn reaction in progress, MQXFS1c test is done: data analysis in progress, Preparation for CD-1/CD-3a Review.
  - **LCLS II** - SPQA108 was delivered to Jlab; SPQA109 mounted on header plate anticipating cold dunk test; SPQA110 mounted on 2<sup>nd</sup> header plate; SPQA111 underwent warm measurements this week.
  - **Mu2e** - The focus this week has been on the Mu2e DOE annual review which is July 25-27. HAB Test Stand: : hunting He leak to insul. vacuum. Pushing to start cooling next week during the mu2e review.
  - **Muon G-2** - MSE Pulsed Septum assembly continues all the parts for first magnet are in place, corona test in progress. Inflector: the

discussion of the muon beam optics analysis continues; G-2 inflector coil winding is expected to begin.

- **AS** - IQBB401 strength cross-check measurements completed; IQBB402 (2<sup>nd</sup> rebuilt MI quadrupole) in progress. Following successful magnet testing, Buckley Systems has shipped 9 IDV trim magnets.
- **MDP 15-16 T dipole R&D** - Fabrication of 15 T dipole coils in progress: reaction of outer coil (HFD-CL2-003) completed, L3 of outer coil (HFD-CL-004) curing completed. Work on coil stress management for 16 T dipole continues. Design & parameters of Nb<sub>3</sub>Sn undulator prototype discussed with ANL APS, MOU prepared.
- **Infrastructure (IB1)** - preparing for IB1 cryo plant shutdown 7/31

- **CRYOGENIC SECTOR**

- LCLS-II Distribution Box: Face-to-face meeting with president of company to correct deficiencies fabrication schedule
- Disconnecting LCLS-II F1.3-03 for removal from the test stand
- Began building PIP2 external transfer line in-house
- Building bayonets for the Mu2e Feed Boxes
- NML and MDB cryogenic systems ready for cool down later in July
- Presented six papers Cryogenic Engineering Conference - Madison, WI

**Computing Operations:**

- CCD: Good week. Reminder that changes to time card system at end of month.
- SCD: Good week. IF experiments making good use of cycles not being used by CMS.

**Office of Communication:**

- LBNF ground breaking on July 21 will be streamed. Then we get ice cream at Fermilab.
- Look for email soon about sign-up to help on Sept 23rds Open House.
- DPF at Fermilab in 2 weeks.

**Directorate:**

- No report

**AOB:**

- None