

Lab Status/ AEM Meeting Notes

Monday July 24, 2017

<https://indico.fnal.gov/conferenceDisplay.py?confid=14942>

Incidents:

- A TD employee bumped a magnet in the Main Injector enclosure as he was welding. The bump caused the magnet and the adjacent magnet to tip and fall to the floor. As the magnet fell, an adjustment bolt contacted the back of his right thigh causing an abrasion. First aid. The magnet tip is under investigation and extent of condition has been identified. A stop work has been issued by the CAO for all work in the MI tunnel. See AD report below for other details.

Accelerator Operations/ Shutdown Report:

- Summer shutdown of the accelerator complex in progress since July 7th.
- Good progress is being made on shutdown work across the accelerator complex.
- But, had to stop work in the MI tunnel due to an incident on July 21st (reported in Incidents above). Two VDPA dipoles (of a total of 8) that are part of an RR to MI decommissioned beamline fell off from their stands. A welder working nearby had accidentally nudged the magnets causing them to fall. With Safety's approval, have now removed the eight magnets, performed a walkthrough to make sure there are no other issues, and advised other machine groups to have a walkthrough to catch any issues.
- Anticipating no serious delays in completing the shutdown work due to the above incident but will have an estimate sometime in the near future.
- Shutdown duration drivers: Linac Marx Modulator installation, RR TSP to IP conversion, Muon Campus overlap with Switchyard crews. All seem to be in good shape.

Special Topics:

- [ANNIE Report](#)
- [TestBeam: Scintillator Studies for CMS Endcap Backing Calorimeter](#)

ND Operations:

- ICARUS
 - The ICARUS detector shipped from CERN has left Indiana and is expected to arrive at Fermilab on Wednesday.
 - Prep for installation ongoing. Installation of the floor starts next week.
 - Bottom CRT installation completed.
- SBND
 - Review in U.K. on the wire-winding machine for the APAs.
- protoDUNE
 - Photon detectors shipped last week arrived at CERN.
 - There is an issue with APA sent to CERN; will not be unpacked from its crate until the engineering design is reviewed and accepted by CERN.
 - Here on-site, 35t cryostat for stage II HV test of the ProtoDUNE-SP field cage.
 - Near-infrared test in LAr started; first results look good.

- MicroBooNE
 - Circulation pump turned off for cryo investigations. Detector drift HV turned off. Technical Board reviewing plans for replacing high voltage power supplies and investigating the (last) source of noise in the experiment.

LBNF Project:

- Last week was a very good week for LBNF. Received approval for CMGC contract. The groundbreaking for LBNF/DUNE at SURF accomplished on July 21!

PPD Operations:

- Safety: No incidents
- g-2: Many shutdown activities, focus on vacuum quality.
- FTBF: Ongoing substantial detector R&D outreach event coordinated with North Central College.
- SCDMS: DOE status review last week, went very well.
- Mu2e: DOE IPR review this week, hope to emulate SCDMS success.
- DPF: Next week: Many science results from Fermilab will be presented, including major science result from the DES experiment.

TD Operations:

- **R&D**
 - N2 infusion at various temperatures continues. 9-cell CAV0017 experienced 120C baking under N2 pressure showed no degradation, no improvement. Standard doping on 2.6 GHz cavity continues.
 - Several 1.3 GHz cavities going through baseline tests for Nb3Sn.
 - Characterization of magnetic field sensitivity continues.
 - Test completed on 2.6 GHz and 3.9 GHz cavities.
- **LCLS-II**
 - 3.9 9-cell dressed cavity 3HRI03 completed vertical testing. Performance is verified after cavity dressing. It proceeds to horizontal test preparation.
 - CM03 was moved to ICB, waiting for tooling to dis-assemble.
 - CM04 was transported to CMTF for testing.
 - CM05 broken HOM feedthrough was replaced and back to work flow.
 - CM06 is in WorkStation3 completed tuner installation and magnet installation. Instrumentation continues.
 - CM07 now has six qualified cavities. There are now 5 qualified cavities with borderline Q0 of 2.5×10^{10} . These be used if no high Q0 cavities are available from the next few vertical tests.
 - Next test slot is Saturday (7/22/2017) with three fresh vendor cavities.
- **PIP-II**
 - B9A-AES-007 (low Q) chemical re-processing (20 um EP) completed
 - B9A-AES-008 60um EP (FE mitigation) again on 7/25.
 - Spoke cavities will all be vertical tested before horizontal test.
 - S1H-NR-110 vertical test ready. Test is in progress since 7/20.
 - S1H-NR-107 HF local swabbed, clean room prepared for vertical testing. Waiting for test slot.

- **LARP-HL** - QXFA104: instrumentation in progress; QXFA106: preparation for Nb₃Sn reaction, MQXFS1c test done; data analysis in progress, Prep for CD-1/CD-3a Review.
- **LCLS II** – SPQA109 completed cold dunk test; SPQA110 in preparation for test, electrical checkout; SPQA111 waiting for cold test; SPQA112 shipped from the vendor.
- **Mu2e** - The focus has been on the DOE annual review which is this week, July 25-27.
- **HAB Test Stand:** He leak to insul. vacuum found and fixed. Start cooling in a week.
- **Muon g-2** - The first Pulsed Septum (MSE001) welded in preparation for additional vacuum outgas. Modified parts for MSE002 returned from VMS; assembly begun. Modified parts for MSE003 from VMS today. Inflector test coil winding in progress.
- **LBNF** - IDS001 (Large LBNF dipole corrector from China) undergoing thermal tests.
- **AS** - IQBB401 strength cross-check measurements completed; IQBB402 (2nd rebuilt MI quad) in progress. Nine IDV trim magnets from Buckley System, New Zealand, in transit.
- **MDP 15-16 T dipole R&D** - Fabrication of 15 T dipole coils in progress: L4 of outer coil (HFD-CL-004) is completed. Work on coil stress management for 16 T dipole continues. Design and parameters of a Nb₃Sn undulator prototype were discussed with ANL APS, MOU sent back to Argonne for signatures.
- **Infrastructure (IB1)** – decommissioning of the old Tevatron testing infrastructure is in progress, rigging for CPS-1 power system components removal.
- **CRYO Sector**
 - LCLS-II Distribution Box: Face-to-face meeting with president of the company to discuss the fabrication schedule. Assured deliveries to meet schedule.
 - Removed LCLS-II F1.3-03 and began installing F1.3-04 on cryomodule test stand
 - Building PIP2IT external transfer line in-house
 - Building bayonets for the Mu2e Feed Boxes
 - MDB and NML cryogenic systems ready for cool down later in July and beginning of August, respectively. Warmed up, secured MTA cryogenic system.

Computing Operations:

CCD:

- Good week.
- Updated timecard system rollout on July 27, training on July 25 (Video recorded).

SCD:

- Good week.
- Data Management system (SAM) down for NOvA during part of the weekend because a specific query caused excessive memory usage.
- CMS and FIFEMON have GCCA scheduled outage Thursday. Overlaps with dCache planned outage.

Office of Communication:

- LBNF groundbreaking ceremony at SURF on July 21 went very well.
- Community Advisory group meeting this Thursday evening.

Directorate:

- First round of funds for starting the design work on IERC have been received at the Lab.
- PAC report from the meeting held July 6-9 is now available on the PAC website.