

Lab Status / AEM Meeting Notes
Monday January 22, 2018

<https://indico.fnal.gov/event/16167/>

Incidents:

- None reported.

Accelerator (Weeks of Jan 8 & 15):

- NuMI: 1.76E19 & 1.81E19 POT
- BNB: 5.32E18 & 6.12E18 POT.
- Muon: 125.5 & 125.6 hours.
- MTest: 73.1 & 80.0 hours.
- MCenter: 106.5 & 101.9 hours.
- LINAC: Investigating LRF3 Marx trips. Booster & MI/RR Tuning. NuMI at 640 kW with SY120. BNB: Stable operation.
- PIP-II Injector test: 3-4 weeks shutdown starts today.
- FAST: IOTA installation under way.
- Schedule: <http://www-ad.fnal.gov/ops/schedule.html>

MicroBooNE:

- POT weighted uptime (2 weeks): 97% & 96.1%
- Steady running.
- Switched to LAr pump #2.
- Large scale MC production continues.

MINERvA (Jan 4 – 16):

- Uptimes: 98.2% (97.7% with MINOS ND)
- On Jan 19, one of MINOS's log files filled up the MINOS data disk. Was not caught & resulted in 6 hours downtime. Procedures updated to avoid this in future.

NOvA (2 weeks):

- Uptimes: ND/FD = 100%/95.5% & 99.2%/98.9%
- Steady data taking.

Muon g-2:

- Achieved PEMP goal of 5000 muons/sec on Jan 13.
- Now at about 10000 muons/sec. Anticipate getting above 30000 muons/sec by March.
- 3 recent trolley runs show field uniformity close to goal.
- Ring running stable, detectors in good shape.
- Planning a production test run late next week and anticipate physics running starts early/mid Feb.

PPD:

- CMS: Preparing for HL upgrades Director Review in April.
- Mu2e: (i) Solenoids. PS/DS progress at GA (TupeloCoil machining complete. (ii) ASG first TS unit to be tested next month.
- Test Beam: Both MTest and MCenter busy with several experiments taking data.
- DES public data release.

ND:

- DUNE/ProtoDUNE: PSL APA#3 winding complete. UK APA#1 arrived at EHN1. UK APA#2 mesh installed; prep for winding to commence. Photon bars for CERN APA#3 are at EHN1. Cold test of CERN APA#2 completed.
- Beam Plug shipping to CERN for installation into ProtoDUNE.
- 35-ton HV test has TPC quality liquid argon and testing has begun.
- SBN-FD: Specifications being verified with crane manufacturer for upgrade of Far Detector building cranes to 33 tons. Goal is to have PO in place by Jan 26. The crane upgrade should be completed by beginning of April.
- Delivery of ICARUS cold shields to Fermilab from Europe expected in March.

LBNF:

- No report.

TD:

- (i) Cryogenic Sector.
 - FAST. Warmed to 300K during IOTA completion
 - Meson Detector Building. PIP-II cavity test completed
 - Cryomodule Test Facility. LCLS-II F1.3-07 testing to be complete this week
 - IB 1 Stand 3: LCLS-II mag. testing. VTS: SRF cavity R&D & LCLS-II production cavity testing
 - Muon Campus. Supporting g-2 operation
 - HAB. Completed test run. First Mu2e TS prod. sol. to be delivered end Jan.
 - MuCool Test Area. Cryogenic system permanently shut down.
- (ii) SRF Sector
 - R&D. Several 1-cell & three 9-cell cavities tested since last report. Continue to get statistics with various recipe of N-infusion. One experiment on 1-cell cavity study showed flux trapping happens more off equators. Counter-intuitive - repeat test in progress to verify result. 2nd 3.9 GHz heavy doping cavity showed great promise with 1.5e10, but lower quench field (10 MV/m). Nb/Cu equipment relocated, installation in progress. Quantum computing cavities: one 2.6 GHz cavity being tested.
 - LCLS-II. 1.3GHz cavities – qualification continues. 3.9 GHz. 3HRI02 dressed, waiting test prep. 3HRI03 HTS in progress. Cavity found locked due to support mis-alignment. Tuner test showed one piezo locked, other. Cavity support will be fixed & test resumed. CM03 repair - Dis-assembly almost finished. CM04 pending final mods (cryo-valve gas guard, CAV1 support) before shipping to SLAC. CM06 shipped – milestone for project. CM05 Test completed. It's at ICB. FE was moderate despite in-situ repair of HOM

- feedthrough. Cryomodule met most specs., likely to be shipped to SLAC Jan. CM07 at CMTF. A repeated fast cool down showed better performance at $2.5e10$ vs. previous $2.2e10$. CM08 in WS5. Helium circuit leak check in progress. CM09 in WS3. HOM tuning in progress. CM10 in WS2. Preparing to move to ICB WS3. CM11 WS0 completed, WS1 started this week.
- PIP-II: Spoke cavity S113 test in STC completed, conditionally qualified.
 - (iii) Magnet Sector
 - HL- LHC, AUP – Producing coils: QXFA107 in impregnation stage. Short coil QXFS09 cleaning after impregnation. Production area in IB3 being reconfigured to accommodate rotating coil winding table & cable tensioner as backup to Selva winding machine.
 - LCLS II – test & qualification of quadrupoles continues, SPQ122 prepared for test, Quadrupoles 123-125 in different stage of incoming inspection.
 - Mu2e: TS prototype removed from dewar. Post-test inspection in progress. This prototype will be used at HAB-west for commissioning of tooling, then sent to IB2 for stretched wire measurements. TS production module fabrication well underway. Expected to be shipped early February. PS/DS model coil still on large in-house lathe at GA, machining of outer coil performed last week. Insertion in shell & then LN2 testing towards the end of this week.
 - AS – Refurbishment of another two IQB magnets started. IQB310 & IQB169 were “burned” last week.
 - G-2 – inner coil winding activity resumed on Inflector
 - MDP 15-17 T dipole R&D : Outer coil 002 impregnation complete. Some dents found on coil outer surface next to midplanes; coil declared damaged. Modification of impregnation tooling for outer coil 004. Preparation for MDP collaboration meeting.
 - Miscellaneous: – New proposal on "Fast Ramping Nb3Sn Superconducting Dipole Magnet" prepared & submitted to DOE PAWS for Electron Ion Collider.

Computing Operations:

- CCD: Good week. Errors in underlying storage systems cause localized disruptions to EBS, TeamCenter and SharePoint.
- SCD: Worked with experiments to determine impact of related security patches. Testing indicates the performance impact of mitigations is small.

Office of Communication:

- New artist in residence (photographer Jim Nadel) will give a talk at 2:30pm Friday.
- Community Advisory Board meets Thursday.

Directorate:

- Secretary of Energy Rick Perry visit this month was successful with some good follow up.

AOB:

- None