Lab Status / AEM Meeting Notes
Monday December 11, 2017

https://indico.fnal.gov/event/15905/

Incidents:
- None reported.

Accelerator:

- NuMI: 1.33E19 POT
- BNB: 9.81E18 POT.
- Muon: 103.7 hours.
- MTest: 29.3 hours.
- MCenter: 20.5 hours.
- Septum wire shorted on Tuesday. We have 3 broken wires on downstram end of tank 1, MI52 septum. Scrubbing gas before turning back on.
- LINAC: Investigating LRF3 Mark trips. Booster: Tuning. NuMI at 670 kW. BNB: Stable operation at 5Hz.
- Muon: Tunnel work wrapping up.
- PIP-II Injector test: Came back up on Nov 27.
- FAST: Commissioning 300 MeV beamline successful.
- LCLSII Prototype Cryo Module: F1.3-05 testing under way.
- Schedule: http://www-ad.fnal.gov/ops/schedule.html

MicroBooNE:
- POT weighted uptime: 97%.
- Data Management: Collaboration is reducing event size.
- Accepted publication: https://arxiv.org/abs/1707.09903.
- Testing modified software trigger settings to increase bandwidth.

MINERvA:
- Uptimes: 92.42% (76.6% with MINOS ND)
- Nov 30 – Dec 6: MINOS DAQ frequently stopping – fixed Dec 6.
- Spill gate problem caused by unplugged cable on morning of Dec 6 prevented data taking.

NOvA:
- Used downtime to investigate FD DAQ instability. Tweeks in error handling improved stability.
- Uptimes: ND/FD = 97.4%/100%

Muon g-2:

- Network issues. Lots of connections between control room & experimental hall dropping out.
- Trolley removed for repair.
- Main focus this week: Commissioning cryopumps & tracker gas system.
- Stable operations for beam tuning work evenings/owl shifts.

PPD:

- Mu2e: (i) ASG completed dry runs of Transport Solenoid coil insertions. Insertion for TS first article expected to be completed today (12/11/17). (ii) Last week General Atomics was waiting for replacement resin pump to arrive & be installed on VPI system. VPI-ing of model coil rescheduled for 12/12/17-12/13/17. (iii) Final batch of straws for Mu2e Tracker wound last week. If initial yield measurements hold up, will have significantly more straws than we need. (iv) First production calorimeter crystals in transit to Fermilab and should arrive today. (v) Completed work to build out room at Lab A for testing CsI crystals & prepping them for installation in calorimeter assemblies. (vi) Mu2e-II upgrade workshop last Friday at Argonne
- CMS: (i) Installation of HE, still looks good. End of run DCDC torture test shows no failures after ~6k cycles (ii) Production of HB ensues, SiPM procurement (NSF, through Notre Dame) underway, cheaper than expected, 320k rather than 400k. (iii) No resolution on the Pixel DCDC problems, but they are preparing to extract the detector. FPIX +Z end scheduled for removal December 20-22. (iv) Completed the parimetric measurement of several HGCal base plates at SiDet, and continuing work on cold box for testing CO2 cooling of cassette mockup. (v) Sandro Marchioro of CERN/CMS visited Fermilab and the ASIC group on December 7-8 to discuss collaborative effort with CERN on design of ECON data concentrator ASIC.
- Astro: (i) At SiDet installed motor, for optical lens rotation, in middle section of DESI barrel. Also completed another CCD package. (ii) MAB team Installed, aligned & tested first harmonic drive for DESI. (iii) SuperCDMS SNOLAB: Pre-CD2/3 Directors Review at SLAC went well last week, clearing the way for the DOE/NSF CD2/3 review in the last week of January 2018. (iv) DES Y5 is going great guns. 74 nights into Y5 we've been on sky (including bad weather) 93% of time. Y5 projects to be well-above average season, perhaps almost as good as Y4. 10 ½-nights have been added to Y5 in February to make up for 35 hours dedicated to following up LIGO targets early in Y5. (v) Alignment & Metrology Department very busy.
- Test Beam: (i) MTest and MCenter have been down for almost 5 days due to a broken wire in the Septa. AD trying new method to bring us back from these failures, so taking more time than usual. Hoping this will allow us to learn something about these failures. (ii) T992 has lost the most time, but they will try to finish the tests tomorrow. (iii) PixLAr had some LAr purity problems

earlier, but is recovering & ready to take beam. (iv) ORC for incoming groups on Wednesday (T1409 and T992).

- Cleanup: ES&H removed a large quantity of chemicals from DAB. The scrubbing machine in Lab 8 was completely removed from building and area cleaned up.

ND:

- First SBND APA frame getting set up on wire winding table at Daresbury. Results of cold tests on the test frame are being evaluated to finalize wire tensioning procedure. The final component necessary for wire winding, the wire geometry boards, are in transit to Daresbury and should arrive within a week.
- LArIAT Run-IV: No beam to FTBF yet, due to septa repair. Taking cosmics and special light collection runs for Arapuca and ArcLight devices in TPC.
- Near-Infrared test in LAr: Taking data.
- DUNE: APA#1 moved into cryostat last week at ProtoDUNE-SP. Photon Detector bars integrated into APA #2 last week. Cold Electronics for APA#2 have been delivered to EHN1.

LBNF:

- No report.

TD:

- Magnet Sector: (i) HL- LHC, AUP – Selva winding machine used again for winding. Coils 107-108 in different stags of production. QXFA106 packaged in crate for shipment to LBNL. Coil readiness review last week in preparation to 2nd prototype MQXFAP2 assembly. (ii) LCLS II – test & qualification of quadrupoles continues, SPQ119 cold test completed. 121 preparing testing next week. Half of all 40 magnets tested. (iii) Mu2E - Mu2e HAB Test Stand: reached target 2100 A, captured splice resistance & coil inductance data, completed system commissioning – warm up started Thursday. First production unit of TS expected before end of December. DS/PS model coil being prepared for vacuum impregnation, now expected this week. Final assembly of two CDAs in progress. (iv) LBNF - IDS001, beamline trim dipole prototype, AC power thermal tests finished. Review last Friday. Preparing for production in IHEP China. (v) AS - Final measurements in preparation for debonding of IQB310 & IQB169 taken this week. Accelerator support is performing multiple repairs to debonding oven. Tooling for MLAW spare magnet & coils being installed in IB2. (vi) MDP 15-17 T dipole R&D – Inner coil winding in progress. 1st layer of inner coil CL-001 successfully cured in IB3, winding outer layer started. Outher coils prepared for impregnation. (vii) Infrastructure (IB1) – Preparing to receive & install Klystron for SRF R&D in VTS3.
- Cryogenic Sector: (i) Operations: CMTF: LCLS-II F1.3-05 is at 2 K. RF testing proceeding followed by 80 g/s fast cooldown; NML (FAST/IOTA): At room temperature Warm up completed last week; MDB: HTS: cooled down & at 2

K; STC: warmed up on Thursday. Testing LCLS-II Split Quad Magnet SPQA119 completed. Three LCLS-II cavities tested (CAV0141, CAV0142, CAV0143). Three single cell cavities & two 9-cell cavities tested as part of Fermilab R&D efforts. One PIP-II 5-cell cavity tested. Temperature sensor calibration run completed. Quantum Lab: dilution refrigerator testing continues. (ii) Projects: LCLS- II Cryogenic Distribution System (a) Production of surface transferline started (b) Distribution Box fabrication proceeding well (c) Supporting Tunnel Components installation. PIP2IT cave transferline Production Readiness Review this week; Fabricating external transferline; SuperCDMS-SNOLAB SLAC Director's Review completed; Supporting procurement of dilution refrigerators for Axion detector R&D; Mu2e cryogenics project work; PIP-II Cryogenic.

- SRF Sector **LCLS II Activities :** CM03 – Disassembly continues will be @ WS3 (no change). Disassembly of cryomodule to re-test individual cavities prior to re-assembly. All instrumentation removed (coupler sensors secured – cannot remove). CM05 @WS5 (to test after CM06); cooldown/test started . CM07 @WS5 instrumentation installation is underway. CM08 @ WS3 Magnet lead soldering. CM09 @ WS2 (SPQA is from CM03) – LL Probe due to exposed wires in can; Solution suggested & tried. Procurement of instrumentation for 2 spare cryomodules (one 1.3 GHz set and one 3.9 GHz.

Computing Operations:

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

Office of Communication:

- All-hands meeting on Dec. 19 at 9:30 in Ramsey Auditorium. This will be live streamed; employees must be on-site or connected via VPN to watch.
- Members of the Fermilab Ham Radio Club are broadcasting on W9F from Dec. 2 – 17 to celebrate Fermilab's 50th anniversary.
- News publication hiatus from Dec. 23 - Jan 2. Employees/users can continue to submit announcements and classified ads as usual.

Directorate:

- No report.

AOB:

- None