Lab Status/ AEM Meeting Notes

Monday February 19, 2018

https://indico.fnal.gov/conferenceDisplay.py?confId=16452

Safety Incidents: None.

Accelerator Operations:

- NUMI: 1.96E19; BNB: 1.15E19; Muon: 8.32E16 (15.4 hrs);
  MTest: 35.2 hrs, MCent:0 hrs
- Linac: Laser notch operational.
- Booster, MI/RR: tuning continues
- NUMI: 650kW w/o SY.
- BNB: Stable operation.
- SY: Meson Test—Magnet MT3U-1 replaced.
- Muon: g-2 had an incident. See g-2 status below.
- PIP-II injector Test in shutdown.
- FAST: 300 MeV commissioning successful; IOTA installation underway.
- CMTS1: LCLS-II F1.3-07 Tests complete. Instrument and prep to ship to SLAC. F1.3-09 will go to cave Wednesday.
- Schedule: http://www-ad.fnal.gov/ops/schedule.html

MicroBooNE:

- 1.1E19 of 1.17E19 to tape
- POT weighted uptime 94.6%.
- DAQ became unstable due to disk failure on an event builder machine. Runs crashing frequently, unstable for about 12 hours. Now fixed.
- Computing -- Job success: 67%; CPU efficiency: 63%; Improvements to workflow and implementation of best practices ongoing.

Minerva:

- Minerva DAQ live time 99.8%. Trying to understand anomalous live time for Feb. 12-14.
- MINOS DAQ down for ~3 hours. Reset from ROC-West.
- Job success 100%, CPU eff. 45%, user analysis jobs, staging data culprits for low cpu eff.

NOvA:

- Smooth running, Four week DAQ rate average: 99.9% (ND), 99.3% (FD).
- Job success rate 84%; CPU efficiency 73%.
- Successful maintenance work on the dry gas system at Ash River, replace a compressor
- Total POT delivered: 124.06E19 (nu), 60.06E19 (anti-nu)

g-2:

- Performed SRV access Mon- Thurs.: Worked on trolley motion problems, calibration probe, kickers, magnet/inflector cryo
- Q1 vacuum incident: Accidentally connected 1 atm cryo pump reservoir to the ring which was at 10^-4 atm, at Q1short location in vacuum chamber. This caused fair amount of damage to the Q1S inner electrode, and broken ceramic on outer electrode and bent cage strut...
- The experiment went to stand-down mode; investigating and developing options and plans – in-situ repairs or extraction of chamber for repairs or turning-off quads on both sides. Will have more info by Thursday.

PPD Operations:

- Deadline for ICHEP 2018 abstracts is February 28, 2018.
- CMS: Phase 1 -- HE readout box upgrade installed, sourcing campaign ends this week. HB production in full swing.
- Mu2e: Submitted Expression of Interest for Mu2e-II to Fermilab PAC (arXiv:1802.02599). Collaboration meeting at Fermilab 28Feb - 03Mar.
- Astro
    - DES: The last block of nights for Year 5 observing Feb 17-22.
    - SCDMS: Design for the NEXUS facility in the NUMI near detector hall nearing completion. Space being cleared for the cleanroom.
    - SPT: South Pole austral winter observing season began last week. A CMB-S4 collaboration meeting is taking place March 5-7 at Argonne.
    - DESI: CCD packaging is waiting new contract from LBNL.
    - Dark matter (1) DAMIC-100 running. Box with new DM result to be opened soon. (2) CONNIE-100 collecting data. Shutdown started at the reactor; data looks excellent. (3) SENSEI : Reorganized space in MINOS to accommodate needs for NEXUS. Fabricated at PNF (UChicago) the new Si board for the skipper package. Tests of Cryo, LTA electronics and skipper detectors all ongoing.
- Test Beam: Magnet repairs for MT3U-1 completed on Friday. Septa back in. T992 and T1224 took beam over the weekend. T1068, T1044, and T1429 preparing for installation
- Mechanical Engineering: Closed the D-Zero Detector east Central Field iron last week. The Detector is back in its preferred configuration for tours.
- Advanced Detectors:
    - Extruded scintillator: Mu2e CRV - scintillator production started on Jan 16, 2018; 1,000 m extruded the week of Feb 12. 7,000 m total, ~20% of production total
    - Optical fibers: CMS - 50 CMS L-1 cables shipped to CERN.
    - Scintillator: Preparations for EDIT continue in Labs 6 and 7.
    - Thin films: ProtoDune R&D – Cleaned, baked 1st OMEGA dichroic filter for coating.
    - Wire-winding: Started work on chambers for Mu2e requested by AD; 5 out of 24 chambers finished
- Experiment Installation: (1) Assembling and welding 8" vacuum lines for Mu2e PS and TS systems. (2) Assist HAB with rigging on cave wall not under crane.

ND Operations:

- DUNE/ protoDUNE: 4th US APA winding in progress at U Wisconsin; tension testing for x-plane complete. 2nd UK APA winding in progress. Delivery of these final two APAs demonstrate the critical path for installation of ProtoDUNE-SP.
- All ProtoDUNE-SP CPAs are now in the cryostat.
- HV tests at 35t cryostat done. Emptying the cryostat begins this week.
- At ProtoDUNE, end wall #1 assembled; will move into cryostat this week.
- APA 4 (PSL #3) en route to Prevessin. #3 to move from cold box to cryostat this week.
- Cold Electronics boxes for APA #4 en route to CERN. 4 CE Boxes have been replaced on APA#3 at CERN, to be sent back to BNL for debugging/repair.
- Near IR tests ongoing here. Taking calibration data for SiPMs and IR PMT with a NIR LED.

- SBN:
    - DOE has put a hold on welding doors on ICARUS cold vessels and on rigging them into the building. This hold time will allow DOE to clarify ownership, permissions with CERN and INFN. SBN project continues with preparations for these activities.
    - Fermilab welding group working with CERN to complete the procedure for welding the ICARUS cold vessel doors. Goal is to be ready for a first test week of Feb 26.
    - The Yale wire winding facility for SBND TPC anode planes nearly complete. First APA frame set up on the machine. Winding at Daresbury paused for QC test results investigation.
    - First production of cosmic ray tagger (CRT) module for the far detector (top) in progress at INFN-Bologna.

LBNF Project: No report.

TD Operations:

Magnets:

- AS – Work on MLAW, MI spare magnet. Coil winding complete.
- HL- LHC, AUP – Producing coils.
- LCLS II – Tests and qualifications of quads continue.
- Mu2e : Work on solenoids progressing. Mu2e physicists visiting vendor to inspect module splice procedure.
- G-2 – Winding of the Inflector; inner coil done, outer authorized.
- Infrastructure (IB1) – VMTF/VTS switchboard upgrade: installation done, SRF testing resumed

Cryo Sector:

- PIP-II spoke cavity cooldown starting yesterday at Meson Detector Building
- LCLS-II cryomodule tests continue
- In IB1, LCLS-II magnet testing, VTS plant maintenance during switchboard power outage.
- Engineering working on LCLS-II, Mu2e, PIPII procurements; HL-LHC AUP and sub-K cryo

SRF Sector :

- R&D on highQ high gradient N2 infusion; quantum computing cavities tests.
- LCLS-II CM0n cavities (n=3, ... 11) in various stages of processing.
- PIP-II: Spoke cavity tests.

Computing Operations:

CCD: Good week. No issues.

SCD:

- Intermittent RAID failures in dCache hardware being investigated.
- CMS usage has been down the past few days, draining for rolling upgrade of nodes to Linux SLF7 which supports docker images.
- Continue to work with experiments to address inefficiencies and improve workflows.

Office of Communication:

- Celebrating National Engineers week with Keynote Address by Sean Stackley, former Acting Secretary of the Navy and current advisor to the Under Secretary of Defense, Tuesday at 1pm in the auditorium. Everyone invited.
- First engineering symposium, Friday. Feb. 23 at 2pm in One West. Guest Speaker: Bradly Verdant, SpaceX Aerospace Company. All welcome to attend.

Directorate:

- LBNC meeting in progress.