

Lab Status/ AEM Meeting Notes

Monday March 27, 2017

<https://indico.fnal.gov/conferenceDisplay.py?confId=14105>

Incidents:

- None.

Accelerator Operations:

- Weekly integrated intensities: NuMI $1.85E19$, BNB $9.42E18$, NMuon $4.05E16$ (148.7 hours), MTest $7.01E14$ (82.4 hrs), MCenter $3.8E+12$ (72.7 hrs).
- All machines running well. Focused on staying above 641 kW with SY. (Booster record set week before last with $2.03E17$ protons/hr.)
- One-day maintenance downtime planned for late April maybe moved up by a week. Interlock safety system tests to be done.
- Future schedule: <http://www-ad.fnal.gov/ops/schedule.html>
- PIP-II Injector test: Beam to the absorber. Characteristics studies ongoing.
- FAST: 300 MeV beamline upgrade continues. UHV chambers being installed.
- CMTS1: Delivery of the cavity scheduled this week.
- Sitewide power outages during summer shutdown being negotiated with ComEd. Will try to schedule these for off hours and short periods (1-2 hours) to minimize impact. Outages to happen at least four times. Stay tuned.
- Please look at the slides available at the agenda link at <https://indico.fnal.gov/conferenceDisplay.py?confId=14105>

MicroBooNE:

- DAQ uptime 96.6% for week, BNB uptime 93.9%. Running stably at 70kV.
- POT delivered: $9.2E18$, recorded: $8.9E18$.
- Computing: Job success rate 68%; bugs in jobs early in the week got fixed. CPU eff 86%.
- CRT top panel installation and ORC completed successfully. Commissioning to finish this week.

MINERvA:

- Uptime 99.8%, with MINOS ND 85.4%; POT delivered = $1.88E19$ (March 16-22).
- Computing job success rate low (79%) due to MySQL database outage on 3/22. Overall CPU efficiency 74 %. Production jobs held to control the number of running jobs. MINOS database identified as the bottleneck.

NOvA:

- POT delivered $18.39E18$.
- POT-weighted Uptimes: 98.8% for FD and 99% for ND (Last 8 weeks)
- Lost 1.5 h beam data on Thursday and 3 h downtime on Friday due to "paused" run (when beam went off) and recovery took time.

- Computing: job success rate 72%, CPU efficiency 87%. Job success rate is low because of trying to reprocess files to salvage data that could not be processed.

SeaQuest:

- Taking good data with liquid targets.
- Protons delivered $3.8E16$; Live proton sum $1.5E16$.

PPD Operations:

- Muon g-2:
 - o Work on beamlines now complete. This work was identified as critical path at the CD-1 review in 2013 and a target date of 31 March 2017 was set to finish the work. Thanks to Jim Morgan and the AD team for pulling it off by the aggressive schedule date.
 - o Work in the hall is progressing on all fronts...kickers, quadrupoles, and NMR trolley systems are all rapidly converging on their final installation and testing.
 - o The magnet was cooled back down after repairing the He leak and extracting the charcoal from the lower coil. The magnet stayed cold for 10 consecutive days with no signs of any He flashlets (prior to repair would have seen one ~daily). The inner coils were heated to 18K to measure the He released from the charcoal panels that are still in the upper coil. A negligible amount of He was released proving the repairs held.
- Test Beam
 - o Gravel was removed from the top of MW7 eliminating the danger of rock falls inside Meson Detector Building. Several new holes were exposed and temporary patches were made. Will work with FESS to make a permanent repair during the summer shutdown.
- SCDMS
 - o SNOLab had a successful Technical Design Review of the Cryogenics on Friday, March 24 at Fermilab. There were two Fermilab reviewers and two external reviewers. The closeout congratulated the cryogenics design team on a sound design that was well presented. There were no formal recommendations, but a list of nine helpful comments for the team to consider in finalizing the design.
- Astro
 - o Members of SCD and PPD are hosting the "BLISS Science Workshop" at Fermilab Mar 27-28. BLISS is a program to obtain imaging in the Southern Hemisphere with the Dark Energy Camera but outside the DES footprint.

- Mu2e
 - o Commissioning of the new 2.5 MHz RF system in the Recycler Ring, needed for both Mu2e and g-2, has started. 53 MHz proton batches from the Booster have been rebunched into 4 bunches required for Mu2e.

ND Operations:

- DUNE:
 - o The US project being revised through May 2017 to mitigate impact from budget CR.
 - o Production Readiness Review of cold electronics feedthroughs held at BNL on March 28.
 - o LArIAT data-taking with wider wire pitch (5 mm) was paused to regenerate the filter which lost efficiency several weeks sooner than expected possibly due to poor quality of LAr delivered.
 - o ProtoDUNE beam window test installed in Blanche and test for purity monitors installed in TallBo. Working to supply LAr dewar to PAB.
- SBN:
 - o Still awaiting completion of the CERN-DOE neutrino protocol addendum. Expected to happen by end of the month. Pre-installation work proceeding at the FD site.

TD Operations:

- Technical Division reorganization will be effective Monday, 3 April 2017.
 - o Sergey Belomestnykh remains Head of TD.
 - o Anna Grassellino replaces David Harding as Deputy Head.
 - o Three Associate Heads will manage three sectors – SRF, Magnets, and Cryo.
 - o Head of the SRF Sector is Alex Romanenko. The current SRF Department will be split into SRF Development and SRF Measurements & Research.
 - o Head of the Magnet Sector is George Velev. The sector will include the current Magnet Systems Department and the magnet measurements arm of the Test & Instrumentation Department.
 - o Head of the Cryogenics Sector is Arkadiy Klebaner. The sector will include the current AD/Cryo Department and the cryo arm of the current Test & Instrumentation Department.
 - o In the Machine Shop, Gary Markiewicz will step up as head.
 - o There is some additional shuffling at the group level, but almost everyone will continue doing their same non-management work in support of projects, programs, and operations.
 - o The full org chart is linked from the TD home page. <http://td.fnal.gov/>

- Tested 11 SRF cavities last week-- a mix of LCLS-II production and general R&D cavities.
- The Mu2e splice test magnet testing continues for another week or two. There has been some disagreement between the old and new resistance measurement systems. These are on the nano-Ohm scale with only a few thousand Ampere running through them.
- Tevatron Test Stand #2 has been decommissioned and removed. Will be relocating the RTD calibration system to that space. (Test Stands 1, 3, 4, and 5 have long-since been decommissioned and the space reclaimed.)
- On the warm magnet testing side, a big effort is underway to review the cross-calibration of multiple rotating coils and to look at the long-term strength stability of our reference Recycler magnets.
- Installation of the Mu2e Transport Solenoid test stand at HAB continues. One dished head (out of two) has been pressure tested. Documentation work continues, with engineering notes being reviewed. All vendors continue to require constant attention.
- As was the case last week, there are three LCLS-II cryomodules in ICB and another in the pipeline at MP9. The schedule shows us approaching the asymptotic rate of one per month over the next few months.
- All the other balls are still in the air. LCLS-II, LARP, HL-LHC-AUP, Muon g-2, Mu2e, PIP-II, accelerator operations, magnet and SRF R&D, and multiple partnerships.

Computing Operations:

CCD:

- Indico down Saturday, Sunday (3/25, 3/26). Investigating.
- On Wednesday (3/22) DB filled up causing outage to GUMS and VOMS (Grid User and Virtual Organization management systems for authentication). Additional disk added within ~1 hr.
- Workday issues on Wednesday with cloud code causing outages for FermiWorks.
- RedHat SLF5 support ends this Friday. All SLF5 machines will be blocked by security. Still 150 machines without upgrade.

SCD:

- Rolling OS update of batch system worker nodes.
- Current version of batch system scheduler (HTCondor) has caused low level of failures for the last couple of weeks.
- There was a short authentication problem that stopped job submissions.
- Opportunistic running of IF jobs on CMS Tier 1 which opened up slots to OSG.
- LPC computing operations normal.

Office of Communication:

- Nominations to the Employee Advisory Board being accepted.
- Special colloquium by Mike Turner and Rocky Kolb this Wednesday, in the auditorium.
- Art gallery opening reception at 5 pm Wednesday.
- DakhaBrakha quartet Saturday, April 1.
- Ask-a-scientist on Sunday; “Building the NOvA neutrino detector” presentation sold out.

Directorate:

- Chris Mossey mentioned that International Neutrino Committee is meeting at the Lab this Thursday and half day Friday.

AOB:

- Outbound Pine Street to close this Friday for one week.