Lab Status/ AEM Meeting Notes

Monday Nov. 27, 2017

https://indico.fnal.gov/conferenceDisplay.py?confId=15810

Incidents:

- None.

Accelerator Operations:

- MI only beam to NuMI. ~270kW w/o switchyard.
- Linac running well; LRF3 sparking being investigated. Booster tuning continues. RR ready for slip-stacking.
- NUMI: 7.56E18; BNB:1.33E19; Muon: 2.48E16 p; MTest: 9.33E12, MCenter: idle.
- NUMI currently down due to LAM61 power supply problem.
- PIP-II injector test shutdown since Nov. 13. Expecting beam upstream of RFQ today.
- CMSTS1: LCLS-II F1.3-05 installing for cooldown and testing.

MicroBooNE:

- Stable physics running with 70kV drift HV.
- 97% BNB uptime, DAQ uptime 97.3%. POT recorded: 1.25E19.
- Router issue resolved.
- Job success: 96%; CPU efficiency: 51%.

Minerva:

- Minerva live time 98.7%; Minerva with MINOS 98.3%.
- Job success rate 94%, CPU efficiency 47% due to one anlayzer's many jobs accessing conditional DB concurrently.

NOvA:

- ND running well; 7.49E18 delivered and recorded.
- FD stability issues reported last week now largely resolved by rebooting all buffer nodes. Uptime: 91.5%; recorded 6.88E18 of 7.49E18.
- Job success rate 92%; CPU efficiency 45%, inefficiency due to user jobs copying large numbers of input files to dCache.

g-2:

- Inflector operating, significant work on kickers and quads last Wednesday- Sunday. Currently running low beam triggers.
- Work continues on commissioning of detectors.
- 19/24 calorimeters; 16/16 trackers installed, some services to be completed.
- No trolley runs, some probe hardware problems fixed.
- Several controlled accesses made during holidays.
- Cyber-attack on the gateway machine during the holidays; incident opened.
- A measure of stored beam vs inflector magnet current shown; max around 2780 A.

PPD Operations:

- Safety: No incidents.
- PPD division-wide cleanup day is Wednesday. All departments and technical groups have made plans for the day.
- SiDet
    - ATLAS: Completed profile measurements of several pixel sensor modules. More boards completed.

- CMS Tracker: First CO_2 cooling cycle completed for the outer tracker 2S thermal prototype module. 2S micro bonding fixture quantified feasibility tests are successful.
- CMS HGCAL first cassette setup on CMM for inspection.
- CMS Forward Pixel: procedure evaluated for removing and replacing failing DC to DC converters.
- Finished verifying the dimensions of the micro strip slots in a MKIDS device
- SPT: completed, packaged, and shipped second batch wafers and electronic readout boards.
- DESI: completed another perfect package.

- Experiment Installation
  - LAriaT inner flange was installed and leak checked. The side flange needed torqueing to pass leak check. The outer flange was then installed and leak checked. Cryo review will take place today.
  - 10" stainless spool piece from Mu2e dewar was removed and modified. Ready for pressure and leak test.
  - Task managed SiDet banner installation.
- Experiment Operations
  - MC-1 fridge room pneumatic air lines and manifold installation nearly complete.
- Astro
  - SuperCDMS: SNOLAB will have a Directors Review for CD2/3 at SLAC on December 5-7, in preparation for the DOE/NSF CD2/3 review scheduled for January 24-26, 2018. If all goes well, fabrication will occur during 2018 and 2019, with installation in 2019 and commissioning/operations in 2020.
- CMS
  - The 2017 pp run is over. Roughly 50 fb^{-1} delivered in 2017. A 5 TeV pp reference run was also recently completed, and between Wednesday and Sunday, 11/22-26, there were 4 long, low-pileup (PU~3) fills for W mass studies. The LHC is doing machine development now, with the year-end technical stop scheduled to begin next Monday.
  - Installation readiness review for Endcap calorimeter electronics approved. Installation in the year-end technical stop with the caveat that they would halt if any new issues with DC-DC converters are found that would affect this system.
  - Successful production readiness review for Phase 1 upgrade for the barrel hadronic calorimeter.
- The Electrical Engineering Department has made progress recently on the Silicon Muon Scanner project where we are partners with NSTec which manages and operates the Nevada National Security Site.
  - A delivery is expected soon for the remaining HDIs (High Density Interconnect Boards) needed to make eight full layers, 4 X and 4 Y, for the prototype detector. The HDIs have a slightly improved layout.
  - The schematic is finished for the "Lid Board" which interfaces the HDIs to the ZED FPGA Board. Begin layout this week.
  - Cosmics seen in the first layer.

- Test Beam
    - MTest: Current experiments took data over the Thanksgiving weekend. All went smoothly. Beam down for a day on Nov 29 for an ORC of the next 2 groups: T1409 - CMS timing experiment, and T992 - a CMS outer tracker test. T1410 will also install in the SY120 Dump (not associated with FTBF, but impedes our beam).
    - MCenter: PixLAr is preparing to take beam in MCenter for the next month. Passed cryo review and having an ORC tomorrow.
    - After the various installations and ORCs on Nov 29, will take data until Dec 13, and then a changeover day.
- Mu2e
    - Calorimeter had an internal review of the Front-end digitizers and interfaces last Monday and a PCB review of the boards last Tuesday.

ND Operations:

- Joint SBN DAQ development: Network setup for the new server at MI-60 complete. Configuration to be completed soon. Latency between ICARUS & MI-12 White Rabbit nodes ~160 microseconds. When servers at MI-60 and SBND are installed, the whole network latency can be measured and early beam signal can be configured.
- SBN:
    - The protoAPA test frame completed wire winding at Daresbury with three wire planes. The third plane has higher wire tension (7N instead of 5N) for a test. Frame to undergo a cold test in the coming week.
    - The SBND TPC HV feedthrough delivered to Yale.
- DUNE:
    - The first full CPA module was moved into the ProtoDUNE cryostat last week.
    - It is anticipated that the second APA will be unpacked and moved into the clean room later this week.
    - 12/15 bridge beam trolleys were installed in the cryostat last week. The remaining 3 trolleys will be installed after the first drift volume is complete. The 3 bridge beam trolleys supporting Bridge beam C were visually inspected by CERN safety.
    - Near IR test in LAr taking data.

LBNF Project:

- No report.

TD Operations:

- No report.

Computing Operations:

CCD:

- Good week.

SCD:

- Good week.

Office of Communication:

- No report.

Directorate:

- No report.