

Lab Status / AEM Meeting Notes

Monday Sept 25, 2017

<https://indico.fnal.gov/conferenceDisplay.py?confId=15341>

Incidents:

- None reported.

Accelerator Operations / Shutdown Report:

- Shutdown on track.

COMPASS:

- High performance COMPuting for Accelerator Science and Simulation.
- At Fermilab since ca. 2000.
- Significant simulation efforts in Booster, Muon Delivery Ring, MI, recycler & Tevatron.
- Funded by DOE SciDAC (Scientific Discovery through Advanced Computing.)
- SciDAC4 call spring 2017. COMPASS4 proposal (led by Fermilab) did well with 8M\$ awarded over 5 years.
- COMPASS4 Objectives (i) Physics: Beam dynamics including simulation support for PIP II and IOTA, Plasma-based acceleration including simulation support for FACET-II. (ii) Enabling tools: Synergia combined with MARS, Advanced Solvers, Parameter Optimization System, and Full plasma-based acceleration simulation.

LArIAT:

- Liquid Ar in a Testbeam, collected data in FY15-17 (Runs I, II and III).
- Pion cross-section paper in preparation.
- Analyses focus on positive pions, kaons, antiprotons, and Michele electrons.
- Run III had improved ToF and investigated different wire pitches: 5mm (DUNE-like) and 3mm (ICARUS-like). Also tested Arapuca light trap idea.
- Planning new run for November with the wire planes replaced by a pixel anode plane – a candidate for the DUNE ND.

PPD:

- Mu2e :
 - (i) Accelerator: AC dipole for extinction system: Power draw is higher than expected. Vacuum is not as good as spec (10⁻² and need 10⁻⁷). Suspect outgassing of the ferrites, but busy doing electrical tests. Will investigate this later.
 - (ii) Tracker: Motherboard developed a short, which is now fixed. Panel production fixtures are not yet in. First batch of straw production (Aluminum only) was fabricated last week at PPG. Once this test is done, PPG will begin with the Au over Aluminized mylar straws. Last batch of Au over Aluminized

mylar material was shipped from Sheldahl last week. This was replacement for material that was rejected. This batch still needs to pass inspection.

(iii) Upcoming Construction Readiness Reviews: Protection Collimator -

10/2. Instrumentations & Controls/Beamline/Rad Safety - 10/16.

Trigger/DAQ Rack and Rack Protection - 10/18. HRS Vacuum Vessel/Lifting Fixture/Installation Fixture - 10/31-10/31

- CMS: This is CMS week in Rio de Janeiro
- Muon g-2: (i) Last week focused on testing quads and kickers after repairs. With major loads removed, vacuum is 5×10^{-7} torr. One kicker was operated at nominal voltage. The other two are still conditioning and are near nominal. The quads are also conditioning and near nominal voltage. (ii) The prototype cryo pump was successfully tested. (iii) Repairs were completed on the NMR trolley, collimator, and IBMS systems. 4 of 5 collimators are 100% functional. The fifth will be done shortly.

ND:

- DUNE management visited to University of Wisconsin to see progress on APA#2 winding & board assembly, APA#3 frame assembly.
- DUNE: DAQ for pLAPPD cosmic tower is up and running.
- ProtoDUNE-SP : Leak-testing of cryostat ongoing.
- SBND: Successful review of US APA wire winding at Fermilab.
- SBN Far Detector: External LN2 cryogenics completed.

LBNF:

- Notice to proceed with the CM/GC contract issued.

TD:

- No report.

Computing Operations:

- CCD: Good week.
- SCD: (i) CMS – 12% jobs at NERSC, continued demo with HEPCloud. (ii) FIFE Operations – extended downtime Tuesday/Wednesday. Isolated user problems found after refactoring – fixed by weekend. Efficiency data not being reported since downtime – being investigated.

Office of Communication:

- Sept 23rd Open House was successful with 10K visitors and good feedback.
- Community Advisory Board meets Thursday.
- West DuPage Chamber of Commerce Chair visits Tuesday.

Directorate:

- U.S. - U.K. Science & Technology agreement signed, and it was announced that the first big project to receive U.K. funds via this agreement is LBNF/DUNE!

AOB:

- FESS: (i) Credit Union refurbishment contract awarded. (ii) A culvert that passes under the road on the way to D0 must be redone ... there will be some traffic disruption.