NOvA Experiment Status

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All Experimenter’s Meeting, September 9, 2013
Far Detector Progress

The Intensity Frontier

NOvA Far Detector Assembly Progress
Status Date: 02SEP13

Block Installed
July 1, 2012
April 12, 2013
April 25, 2013
May 13, 2013

Block Filled
May 21, 2013

Block 20 Assembly Progress
60% Complete

Block 14 Fill Progress
56% Complete

May 24, 2013

Block Instrumented
Instrumentation Progress

Block 3: 8.3% Complete

June 12, 2013
June 27, 2013
June 18, 2013
July 3, 2013

14 kilotons = 28 NOvA Blocks
20 blocks of PVC modules are assembled and installed in place
14.56 blocks are filled with liquid scintillator
4.17 blocks are outfitted with electronics

S. Dixon
FarDet Outfitting

Di-Block Status (9/09/13)


Tuesday 9/10/13: Begin filling block 15 (16th block) horizontals
Diblocks 1,2 (0 -> -850 cm) fully instrumented with APDs
Diblocks 3-7 (-850 -> -3000 cm) have Front-End Boards installed
550 µsec trigger window
FarDet Progress

- Taking data with 2+ ktons of fully-instrumented detector
- APDs running warm, 1 kton at nominal HV (APD gain = 100)
  - Evaluation of detector performance ongoing
  - Studies of noise levels in detector
- APD cooling hardware/firmware/software in final testing stage – ready for on-detector operations this week
- Over half of FarDet filled with scintillator
- 21st Block being installed today
Near Detector On Surface (NDOS)

- NOvA prototype detector still running continuously
- Useful for beam timing measurements, FarDet prediction
- Test Stand (30 APDs) used to study APD noise rates
First ND Block Installed

First PVC Block Installed Aug. 21

- Upstream face was aligned using plumb bob and ruler
- As-build position being measured by alignment now
- Will use it as template to position next block
ND Muon Catcher, First Block

Muon Catcher Access Ladder

- Please read and sign the JHA (docDB 9813)
- Do not block the egress ladder nearby
Near Detector Progress

September Schedule

- Scintillator piping connections: Sept 9-13, 2MT
  - Connection to scintillator distribution plumbing
  - Connection to ISO tanker
  - System under engineering and ESH reviews
- Block #2
  - Assembly: Sept 4-17, 4MT
  - Transfer: Sept 19, 4MT
  - Survey: Sept 23-24
  - Installation: Sept 25-26, 4MT
- Block #3
  - Table and pallet installation/alignment: Sept 19-20
  - Assembly: Sept 23-Oct 4
- Cooling and dry-air installation: 2MT
  - Detail schedule under discussion
- Muon catcher PDB/DCM installation and cabling: Sept 9-13
  - Need network IP assignment
  - Need checkout procedures
  - Electronics cabling and grounding ORC review underway
- Scintillator filing machines delivery to FNAL: Sept 23?
  - ORC review documentation in preparation
Summary

- Currently taking data with 2 kilotons of the Far Detector with full electronics (warm APDs at nominal gain)
  - > 1 million gallons of liquid scintillator in the detector
  - Preparing to start cold APD operations this week
- 24 hour shift coverage started last week
  - High up-time during beam operations
  - Monitoring cooling status
- Close attention to NDOS operations to capture beam timing