

NOvA Operations Report

November 2020

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Proton PMG Meeting
December 3, 2020



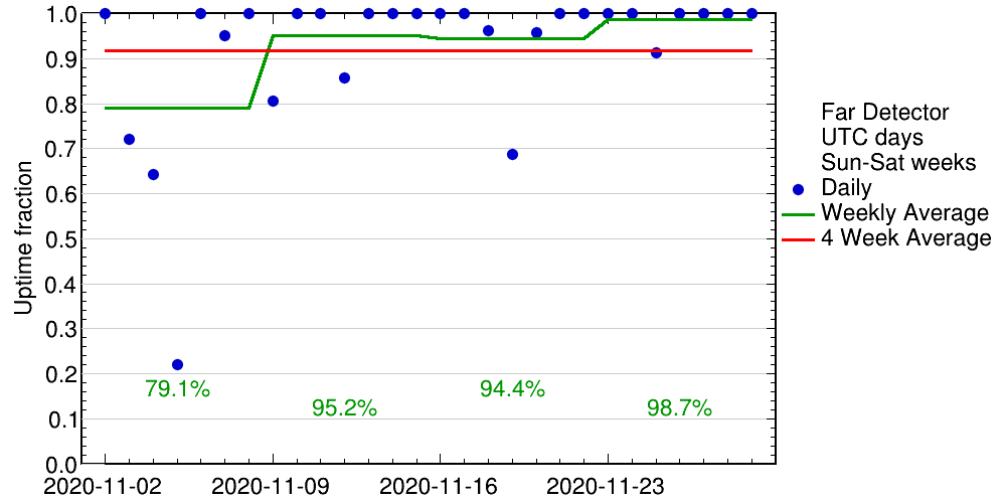
NOvA Status and Plans

- NOvA has been taking non-beam data since March 2020 to minimize hardware loss due to power cycling and maintain sensitivity to non-beam physics
- We have been doing web-based checklist shifts with shifters monitoring the detectors through screenshots of the DAQ VNC sessions from their laptops or home computers
 - Relies on 24/7 on-call expert support and automated alerts.
 - Less than 5% impact on detector uptime and less than 1% impact on data quality
- We have applied to continue web-based checklist shifts after beam returns
- Busy summer shutdown, focused mostly on SL7 upgrade.

NOvA Testbeam Status and Plan

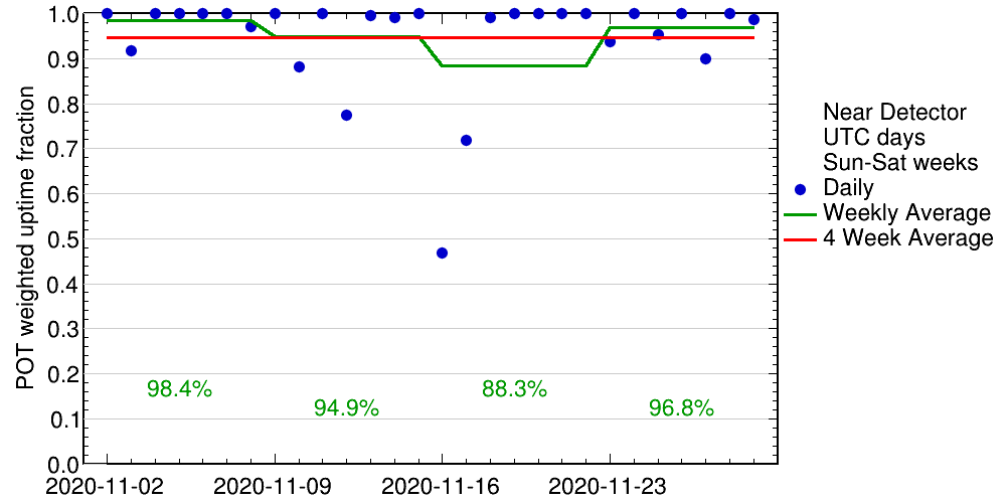
- Expecting beam back at MCenter the week of December 14
- New 'merged' shifting model invoices combining monitoring of Test Beam with regular NOvA operations with a single shifter completing 'checklist'-style shifts
 - Experienced experts with site access on-call 24/7 to access experiment
- Plan to begin operations again this week to collect cosmic data.
 - Carefully transition and validate our new shifting model.
 - Enable us to show we can maintain the required uptimes and communications to operate this way with beam.
- Currently coordinating final work in MC7 before collecting further beam data:
- Tilting detector to correct the slope of the horizontal cells (this week/next week);
- Installing new shielding to improve the quality of beam at the detector (work ongoing);
- Re-commissioning detectors in our beamline, lots of work to improve wire chamber grounding;
- DAQ is ready for data-taking following upgrades to SL7.

Far Detector Operations



- Most downtimes are related to the SL7 transition. Planned downtime: ~48 hours
 - DAQ SL7 and DDT work: 11/4, 11/5, 11/9, 11/12, 11/19
 - FD electronics maintenance: 11/3
- Unplanned Downtimes: ~6 hours
 - DAQ Crash 11/7, 11/18, 11/20
 - AR Power Bump 11/9

Near Detector Operations

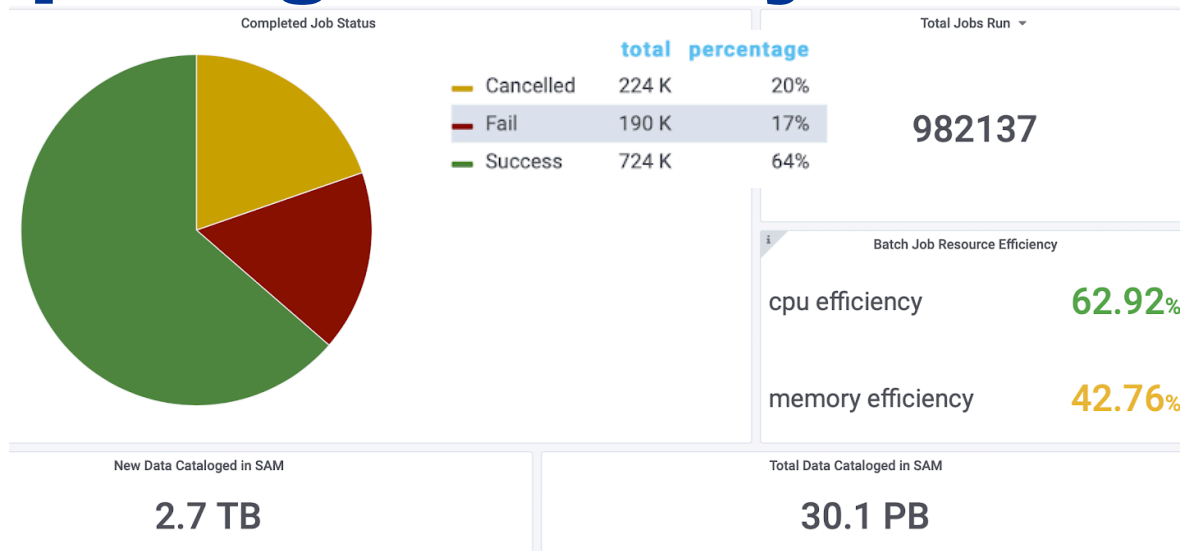


- Most downtimes are related to the SL7 transition. Planned downtime: ~21 hours
 - DAQ SL7 and DDT work: 11/2, 11/10, 11/12, 11/17, 11/18
- Unplanned Downtimes: ~16 hours 45 minutes
 - DAQ Crash 11/11, 11/16, 11/23, 11/25, 11/27

Shutdown Work

- Summer shutdown work continues with a focus on upgrading NOvA DAQ systems to SL7
- FD / ND:
 - All machines actively being used are SL7!
 - Still have a few backup machines that need to be upgraded
- Electronic channel swaps
 - Tom Wieber is currently at FNAL and all electronics work on the ND and Test Beam has been completed.
 - Both detectors look good for beam data taking.
- Working on upgrading all Data Quality monitoring software and machines to SL7 currently

Computing Summary



- Between Nov. 2 and Dec. 1, NOvA ran 980,000 jobs, of which production ran 550k jobs
- Production 5.1 is ongoing, rock sample is generated for the 4x POT desired by the end of the year, over half of the detector simulation has been produced
- MiniProduction 5.1 is now complete and is being validated. We have a tag for running Production 5.1 reconstruction
- All offline machines (except 1) are now running SL7

NOvA In The News

- If you're interested in NOvA's non-beam based physics you can read recent Fermilab Today article: <https://news.fnal.gov/2020/11/nova-turns-its-eyes-to-the-skies/>