Shutdown Goals

- **Improve reliability and performance of the detector**
  - Improve isolation of calorimeter ground to reduce sensitivity to outside noise sources
  - Study disabled HDI's
  - Attempt recovery of unresponsive VLPC channels
  - Continue studies aimed at optimizing readout rate
  - Continue trigger development
  - Perform routine maintenance
    - Power supply, cooling systems
    - Individual channel recoveries
      - A layer MDT
- **Preparations to facilitate Run IIb upgrade installation**
  - Verify aperture for Silicon L0 detector installation
  - DAQ/Online upgrade
  - Infrastructure modifications for L1CalTrack, L1CTT
  - Install SVX4 HDI string to test mixed mode SVX2/SVX4 readout

Shutdown Status

- General: Remove beam-pipe to quads – **done week 1**
- General: Install backup power for the VLPC cryostats and cryo controls – **done week 1**
- Grounding problems elimination / noise studies – **ongoing**
- Solenoid warmup for He leak repairs – **ongoing**
- Complete the toroid magnet sensor wire connections
- Muon systems
  - South A-layer MDT broken wire work – **done week 1-2**
  - PDT repairs – **ongoing**
  - PDT noise studies – **ongoing**
  - Damaged insulation on a few muon cables when closing South EF on Aug 26 – **fixed**
- Surveyors on schedule
  - Pre-opening survey, South A-pixel layer, Quad through to tunnel

Incidents…

- Major goal of the first week was North & South beam pipe spool removal. Accomplished by AD with D0 mechanical support.
- Had to be flexible, things didn't go exactly as planned

  (+) Beam pipe was able to be removed without opening EF's

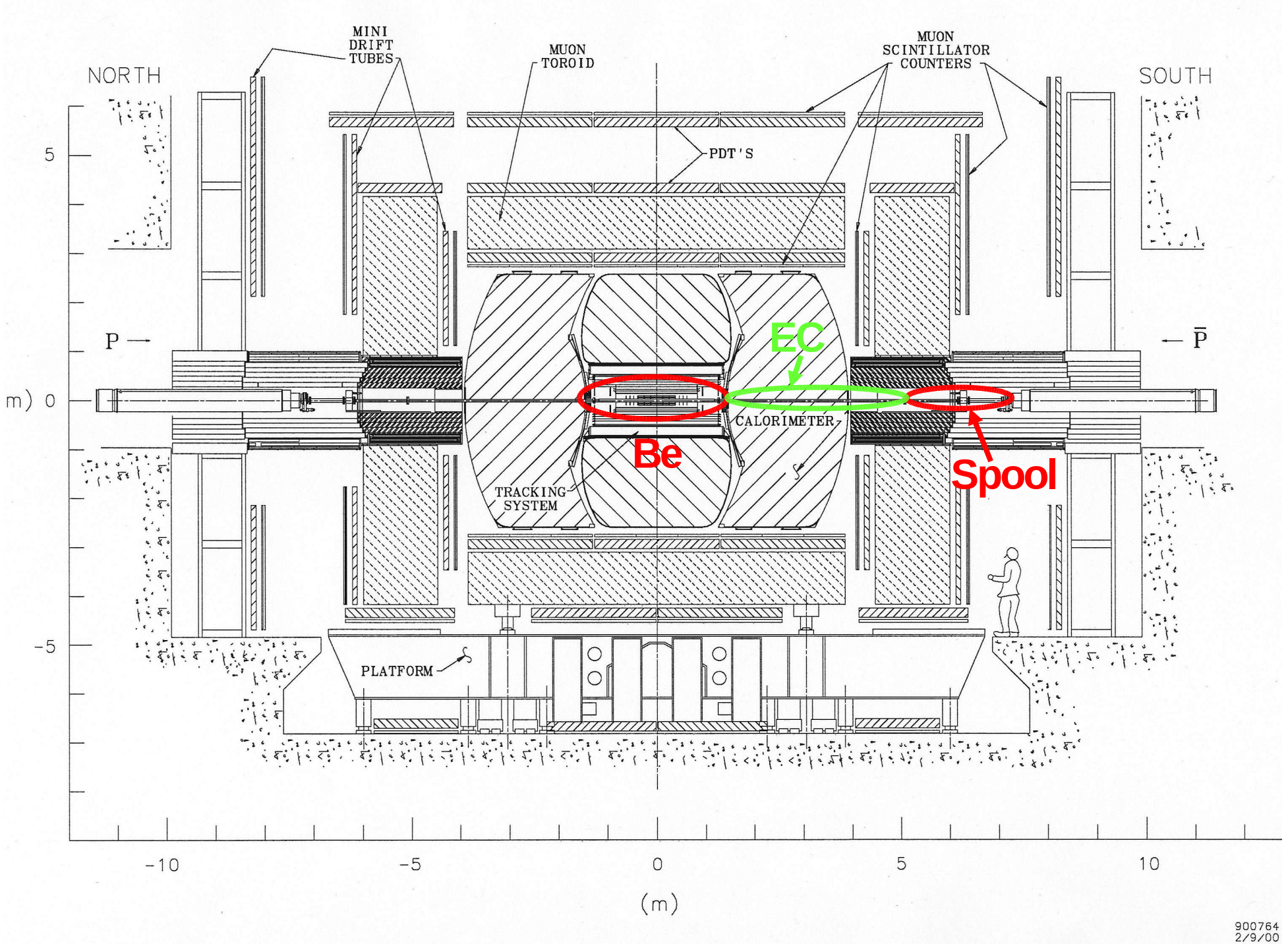
  (-) Opening EF South for Pixel survey, SEC beam pipe end got caught up on the bottom BLM. Pushed BLM off its mount

  (-) Added a day of leak checking beam pipe before proceeding (+)

  (+) Able to fix known platform ground short w/o lifting platform

SEC beam pipe (stationary)

BLM moved this direction with EF (until it meets the flange.)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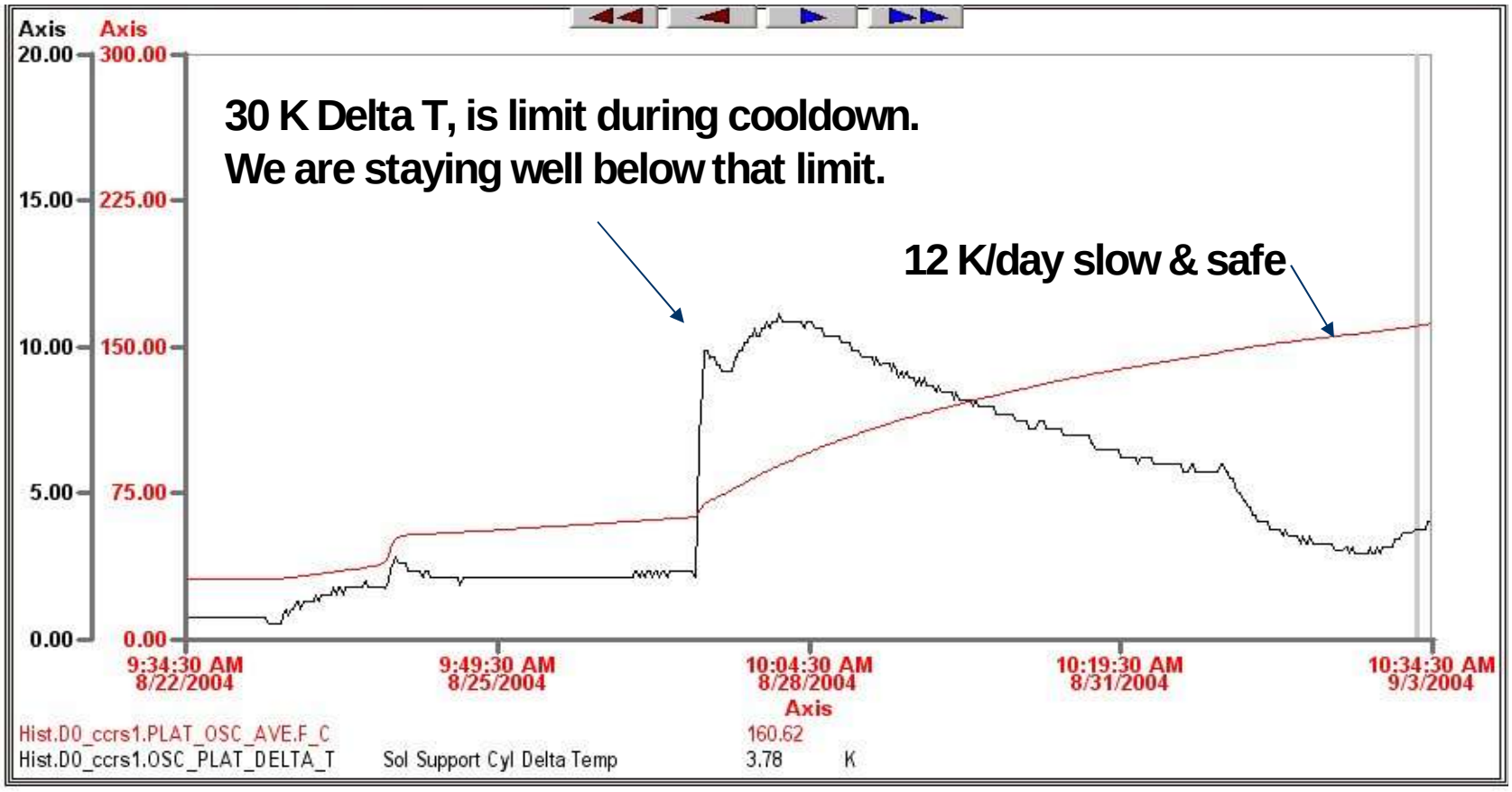
Solenoid Warmup –

Started small warming flow Friday, Aug 27



Grounding Improvements

- Goal is to **reduce noise in calorimeter, improve calorimeter performance, and reduce vulnerability to outside noise sources**
- **Found (and fixed) seven grounding violations so far**
- Platform transformer grounding fault and replacing shim packing under southwest pedestal already reduced rate of a special “noise” trigger from >1kHz to below 1Hz in the presence of welding activity
- Since Thursday, disconnected AC power to the detector, removed safety ground, and use a high current power supply to energize the detector ground relative to the building earth ground
- ODH system: screws touching platform iron – fixed
- Raised the platform on Friday
  - Southwest platform stand: metallic lock washer instead of insulator – fixed

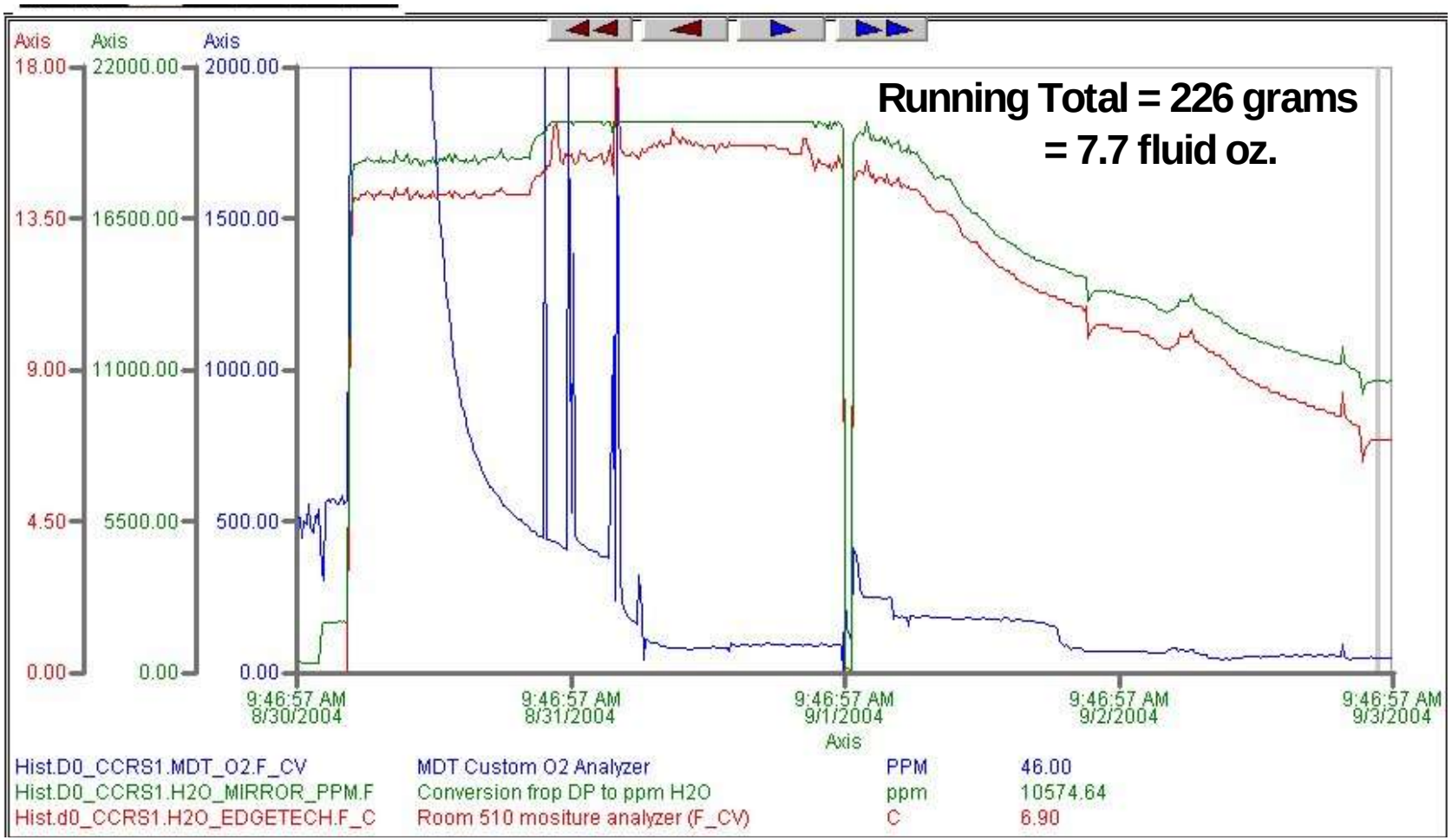
Shutdown Status

- Calorimeter
  - BLS power supply upgrades – ongoing
  - BLS Harness improvements
  - Preamplifier power supply tests – ongoing, cathedral access
  - LAr monitoring cable termination – ongoing
- ICD: Upgrade LV PS cable connections (cathedral work)
- CFT
  - **VLPC cryostats warmup, drying etc – ongoing**
    - **East VLPC cryostat at room temperature. Removed any contamination, esp. water by monitoring it, purging it and doing pumps and backfills. CFT will add cassettes. Will then do final checks, and cool down.**
  - AFE power supplies cable upgrades
- Online: migrate Alpha cluster to Linux
  - NFS, DAQ / LUM, DB, Services
- Controls
  - Epics upgrade to R3.14, VxWorks upgrade to 5.5, Comics upgrades

East VLPC Cryostat Drying

East VLPC cryostat cassette space drying:

Hygrometer on exhaust of a GN2 purge allows water removal to be trended and quantified. **(10 scfh purge rate)**



Shutdown Status

- SMT
  - Gap access for HDI recovery – beginning next week
  - Firmware upgrades for Front-End Busy improvements – ongoing
- CTT (Track Trigger): Reestablish air flow to PW03 (broken large blower) – **done**
- CTT trigger upgrade
  - Install DFEB crate (including splitters and cabling)
  - Optical ethernet links to the platform
- Preparation for Layer 0 upgrade
  - **L0 clearance measurement – end of September / early October**
  - Install LV PS in M209
  - Install cables from M209 to East and West Cathedral
  - Install fuse panels in East/West Cathedral
- L1Cal trigger upgrade: electronics and infrastructure installations – ongoing
- Cal-Trk Match trigger upgrade: install cables – ongoing

Shutdown Plans

12 Week 4	13 6:00 Loss of cooling water 7-7:30 POWER OUTAGE Ground short hunting/fixing	14 Ground short hunting/fixing	15 Ground short hunting/fixing Install cassettes in East cryostat	16 End ground short hunting/fixing Adjust detector position if necessary Install cassettes in East cryostat	17 Open EF's, CF's, Cathedral Leak checks,final P&P's East VLPC cassette space	18
19 Week 5	20 Open & secure both EC gaps Start East VLPC cool down	21 Both EC gaps open for work	22 Warm Silicon above dewpoint Open up tracker membrane, prep Disconnect Beryllium beam pipe Replace Cal Pre-amp water valves	23 Install survey platform in gap (2 days)	24 6:00 Loss of cooling water 7-7:30 POWER OUTAGE He Refrig Off 8 hrs, Electrical 46b work Pump refrig. VJ's Mycom Maintenance Expander maintenance Hold East VLPC cryostat at LN2 temp	25 East VLPC cryostat cooled to operating temp
26 Week 6	27 HLS level installation starts Survey L0 beam pipe aperture #4931	28 Fix Solenoid Lead flow GHe leak Survey L0 beam pipe aperture #4931	29 Fix Solenoid Lead flow GHe leak Begin West VLPC cryostat warm up Survey L0 beam pipe aperture #4931 VLPC test stand warm up	30		

Conclusions

- Shutdown is on schedule
- Planning for a 13-week shutdown, the weekends are available as contingency
- Search for grounding problems is scheduled to be completed by the end of the week
- Five and a half weeks of gap access follow