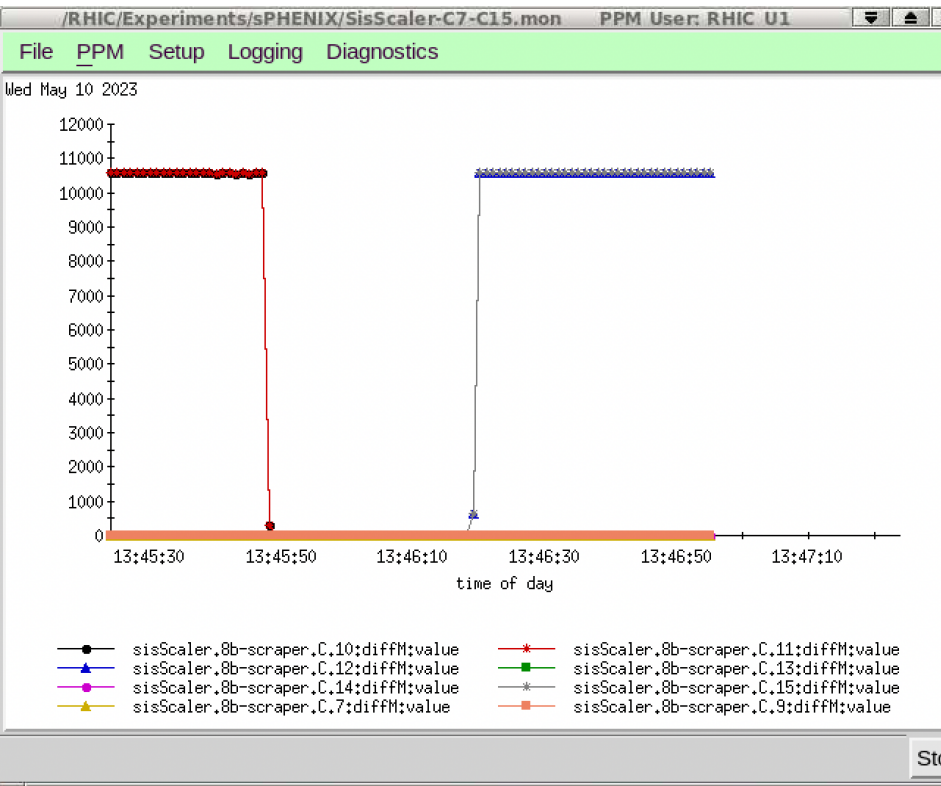


# Waiting for BHSO to approve sPHENIX routine operation



- By ~6:40 pm (May 9), Alex Tulio approved all inspections.
- ORE report was signed off in the afternoon of May 10.
- IRR approval memo (from Bob Lee) arrived on May 11 (afternoon) and an email was sent on behalf of C-AD Chair to Mike Clancy (Interim ALD, ES&H) ~1:40 pm.
  - ❖ May 12 (Fri.), M. Clancy asked for ORE documents and then ORE chair for confirming that all pre-start items were completed.
  - ❖ May 15, H. Gao et.al. met with the BHSO who had a few minor questions. The questions were addressed by mid-afternoon.
  
- May 15, M. Clancy's approval letter was received ~4:47 pm. H. Gao (ALD of NPP) sent the request (for sPHENIX routine operation) to BHSO ~5:57 pm.
  
- After we are approved to operate,
  - ❖ To cool down sPHENIX Superconducting Magnet (~10 days)
  - ❖ To flow gases to TPC/TPOT (5-7 days before we may operate TPC/TPOT)
    - At the beginning, we need 2-4 hour access to turn on/adjust N<sub>2</sub> flow meter.
    - After a day or 2, we need 4 hour access to hook the detector hoses to the gas panels.
  
- As soon as collisions are available, we will start commissioning with the triggers and all detectors (except TPC/TPOT), even without magnetic field.
  - ❖ All detectors are actively optimizing their data acquisition systems.

# ZDC's (at both sides of IP8) have been set up



With a signal generator



Nominal situation without collision

# 12 week sPHENIX Commissioning Plan



- 2 weeks of stores with 6-28 bunches @ zero crossing angle ( $<2$  kHz) for initial tune-up of timing and trigger.
  - The magnet doors will be closed and the magnet ramped at the earliest at one end of this period.
- 2 weeks of stores with 111 bunches @ zero crossing angle (1-5 kHz) for optimizing trigger, plus data analysis & diagnosis.
  - The trigger developed in the first two weeks will provide physics triggers for all other detectors
- 1 week of machine studies of optimizing crossing angle.
  - The major goal of this period will be to demonstrate the narrower vertex distribution and reduced rates in the TPC allowed by the crossing angle. The evidence for this will come from the vertex distribution from the trigger and hit distribution in the TPC and the silicon detectors.
- 1 week of 111 bunches @ non-zero crossing angle for calorimeter timing/tune-up.
  - As the luminosity nears the design, the experiment will continue to collect data from as many of the sub-detectors as possible, and the radiation damage to the silicon photomultipliers will be carefully monitored.
- 4 weeks of 111 bunches @ non-zero crossing angle (1-5 kHz) for operating tracking detectors including TPC.
  - This running period is designed to collect data from all detectors which will asymptotically approach physics data at modest rate. Any detectors which are having problems taking data or keeping up with the rate will be debugged during this period.
- 2 week of 111 bunches @ non-zero crossing angle with increasing collision rates (15-20 kHz).
  - This period is a dry-run of operation for physics which will develop software and procedure for physics data taking, which immediately follows this period.