
sPHENIX
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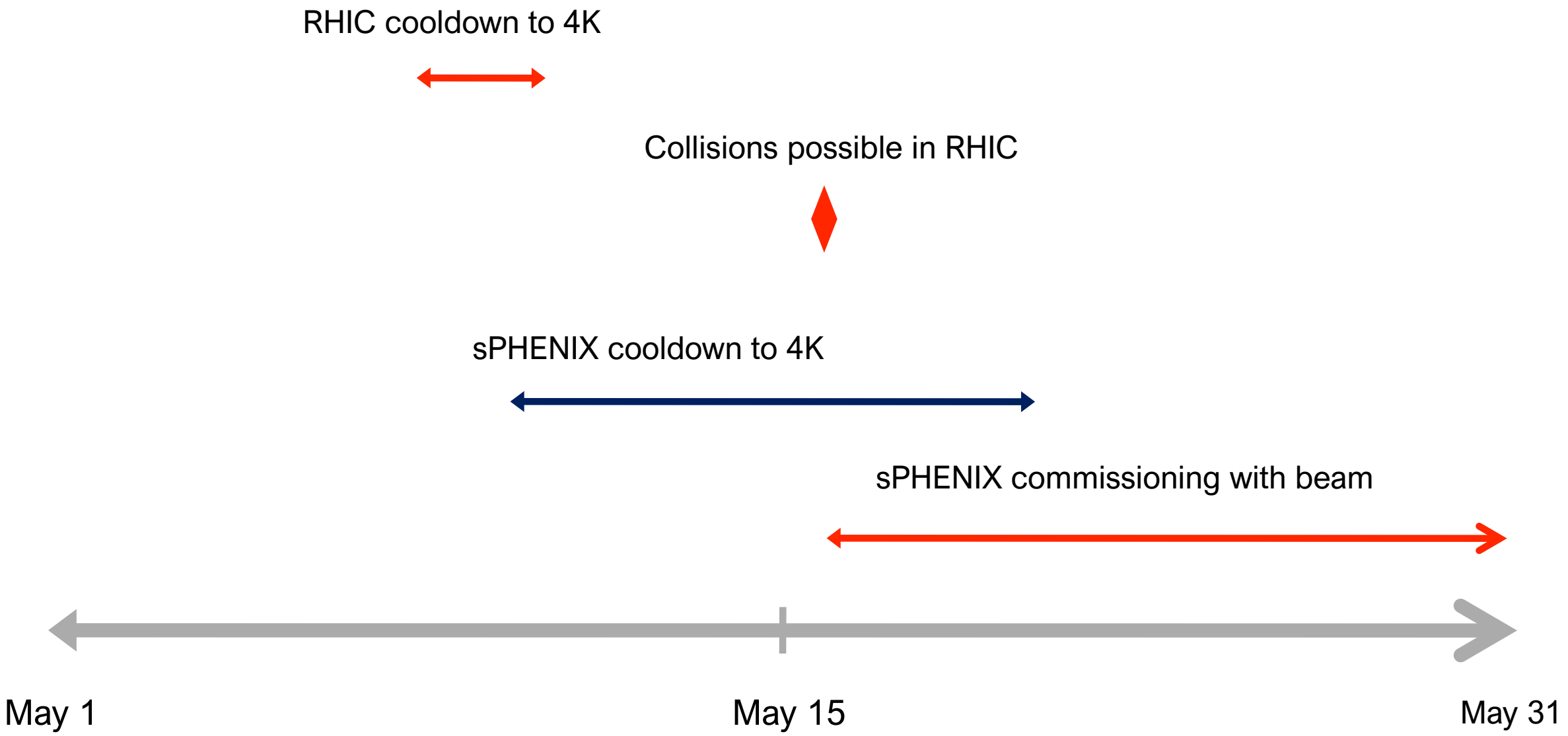
What sPHENIX has gone through …

- On Apr. 24, there was a ESRC (Exp. Safety Review Committee) and ORE (Operations Readiness Evaluation) walkthrough.
  - It's generated 60+ items and ~16 of them were considered "pre-starts", including the wooden planks needing fire-retardant paints (as they're considered as combustible).
  - We thought we completed all items by Apr. 28, except that the "paint" we ordered didn't arrive.
  - As the paint didn't arrive on Monday (May 1), we decided to take the wooden planks out so that we could say that the "hazard" was removed. (The paint arrived ~ May 2.)
  - Nevertheless, Alex Tulio (on vacation in the week of May 1) found some EMII (electrical material and installation inspection) incomplete and he included the legacy equipment. IRR Chair wouldn't approve before A. Tulio is happy with all the inspections.
  - By May 5, we submitted all the inspections to A. Tulio and Jon Sandberg wrote a memo about the legacy equipment to A. Tulio.
  - After some discussion with ESSHQ (C-AD), we put back the wooden planks on May 5 after P. Rosas and his team did the warm Magnet Power Supply test and the wooden planks were painted --- with the evidence being accepted.

Current status of sPHENIX

- SPHENIX construction and installation is done.
- Awaiting IRR and BHSO approval.
- Then …
  - sPHENIX superconducting solenoid needs ~10 days to cool down.
  - P. Rosas and C. Schultheiss need ~2 days to test the magnet.
  - We need 5–7 days to flow gas through TPC and TPOT before they can be operated.
- However, as soon as collisions are available, we will start commissioning with the MBD and the calorimeters – no magnetic field is necessary.

Initial timeline



sPHENIX Commissioning Plan

- 2 weeks: 6-28 bunches, zero crossing angle (<2 kHz) – initial timing and trigger tuning
- 2 weeks: 111 bunches, zero crossing angle (1-5 kHz) – optimizing trigger, initial data analysis and diagnosis
- 1 week: machine studies to optimize crossing angle.
- 1 week: 111 bunches, non-zero crossing angle – further calorimeter timing/tune-up
- 4 weeks: 111 bunches, non-zero crossing angle (1-5 kHz) – operate tracking detectors
- 2 weeks: 111 bunches, non-zero crossing angle – increase collision rates (15-20 kHz)

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.