

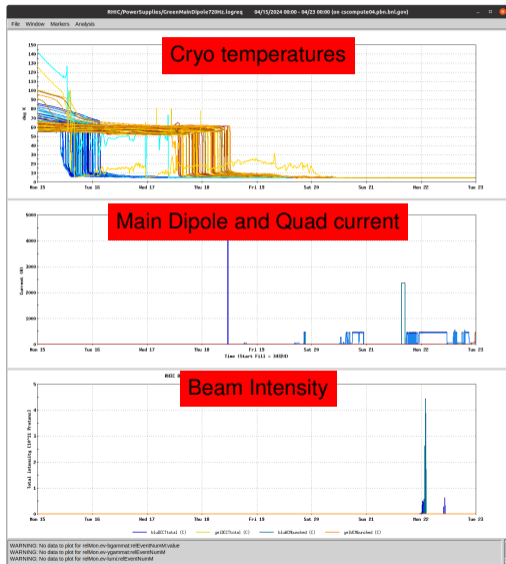
RHIC Run24 Preparations

Kiel Hock

April 23, 2024

RHIC last week

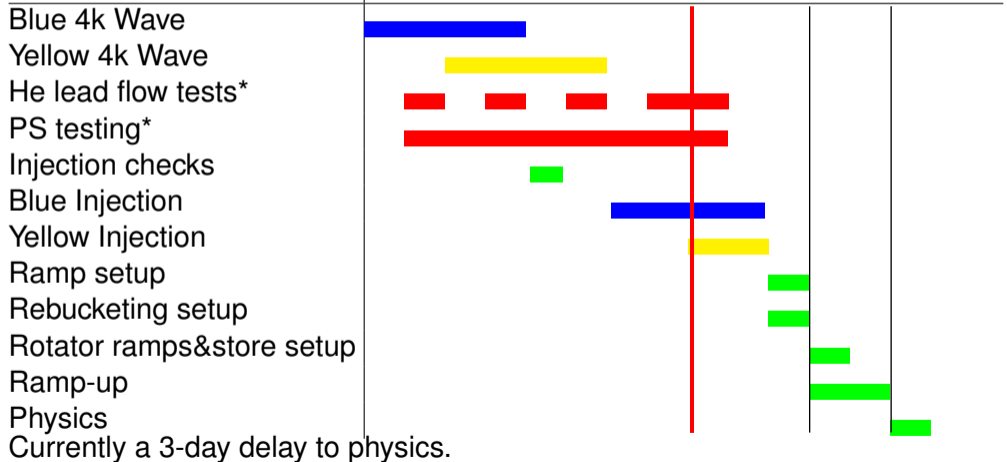
- RHIC cooldown began on Monday 4/15
- Power dip on 4/16 @2300, caused OPPIS to be down for approximately 6 days
- Blue main quad PS current jump at shutoff, causing prolonged investigations.
- Ongoing issue with blue injection kicker, investigations continue
- Blue injection setup (off-hysteresis) complete
- 56 MHz conditioned up to 1.1 MV (now need ~16 hours of time before testing with Au)



RHIC Startup Schedule

Current schedule

April



RHIC Startup Status

- Blue 4k wave started
- Blue PS testing started
- Blue helium lead flow tests started
- Blue 4k wave completed
- Blue helium lead flow tests completed (Okay to ramp blue)
- Blue PS testing completed (Hysteresis complete)
- Injection checks
- Injection into Blue
 - Capture
 - Instrumentation setup
 - Feedback setup
 - Polarimeter targets conditioned
- Blue setup complete
- Yellow 4k wave started
- Yellow PS testing started
- Yellow helium lead flow tests started
- Yellow 4k wave completed
- Yellow helium lead flow tests complete (Okay to ramp Yellow)
- Yellow PS testing complete (Full hysteresis complete)
- Injection into Yellow
 - Capture
 - Instrumentation setup
 - Feedback setup
 - Polarimeter targets conditioned
- Yellow setup
- Ramp setup complete
- Rebucketing setup complete
- Rotator ramps & store setup
 - instrumentation setup
 - collisions setup
 - collimation setup
 - polarimetry setup
 - abort kicker optimized
- Experimenter Setup & ramp up
- Physics, setup complete

Injector Tracker

Injector Performance

OPPIS polarization nominal following weekends maintenance

AGS Polarization is at 63% with 2.0×10^{11} protons with standard JQ setup, tuning for stability and intensity

Two LINAC bunch+Merge setup with snakes, needs more time to study

Booster bunch split+AGS merge setup with snakes.

Skew quad commissioning status

All magnets have been installed and verified.

Commissioning ongoing outside of optimizing normal setup.

Physics Checkpoints

- β squeeze at IP8
- 1.0e11 protons per bunch @physics
- complete low-luminosity run for STAR
- sPHENIX running with nominal store conditions
- 1.7e11 protons per bunch @physics (Run12 maximum)
- 2.0e11 protons per bunch @physics
- 2.4e11 protons per bunch @physics (Run15 maximum)
- switch to alternate AGS setup
- 2.5e11 protons per bunch @physics
- 3.0e11 protons per bunch @physics