

# RHIC Machine/Detector Planning Meeting

13 Nov 07

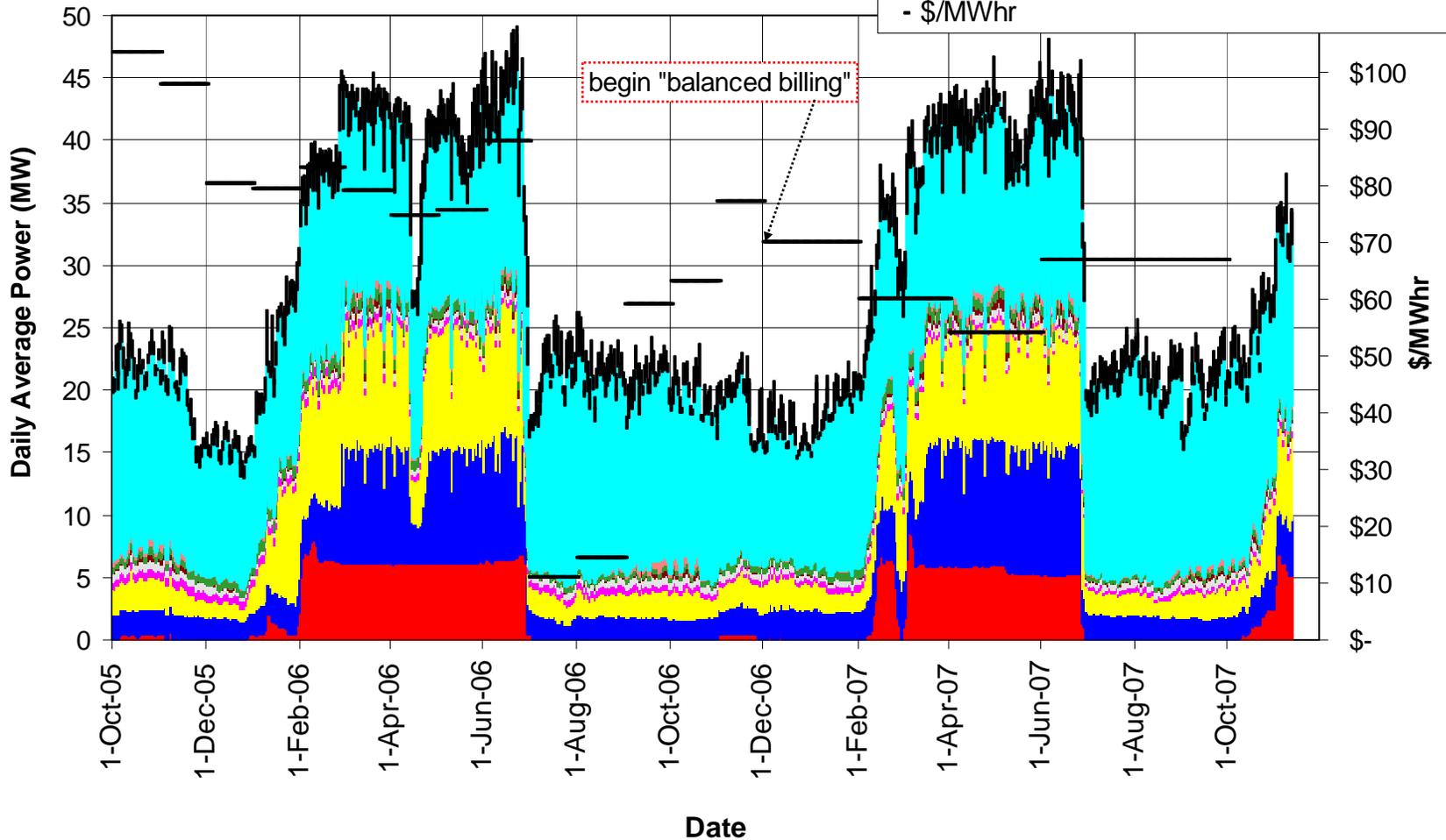
## Agenda

- Power use (Pile)
- Scheduled Maintenance Issues (Sivertz)

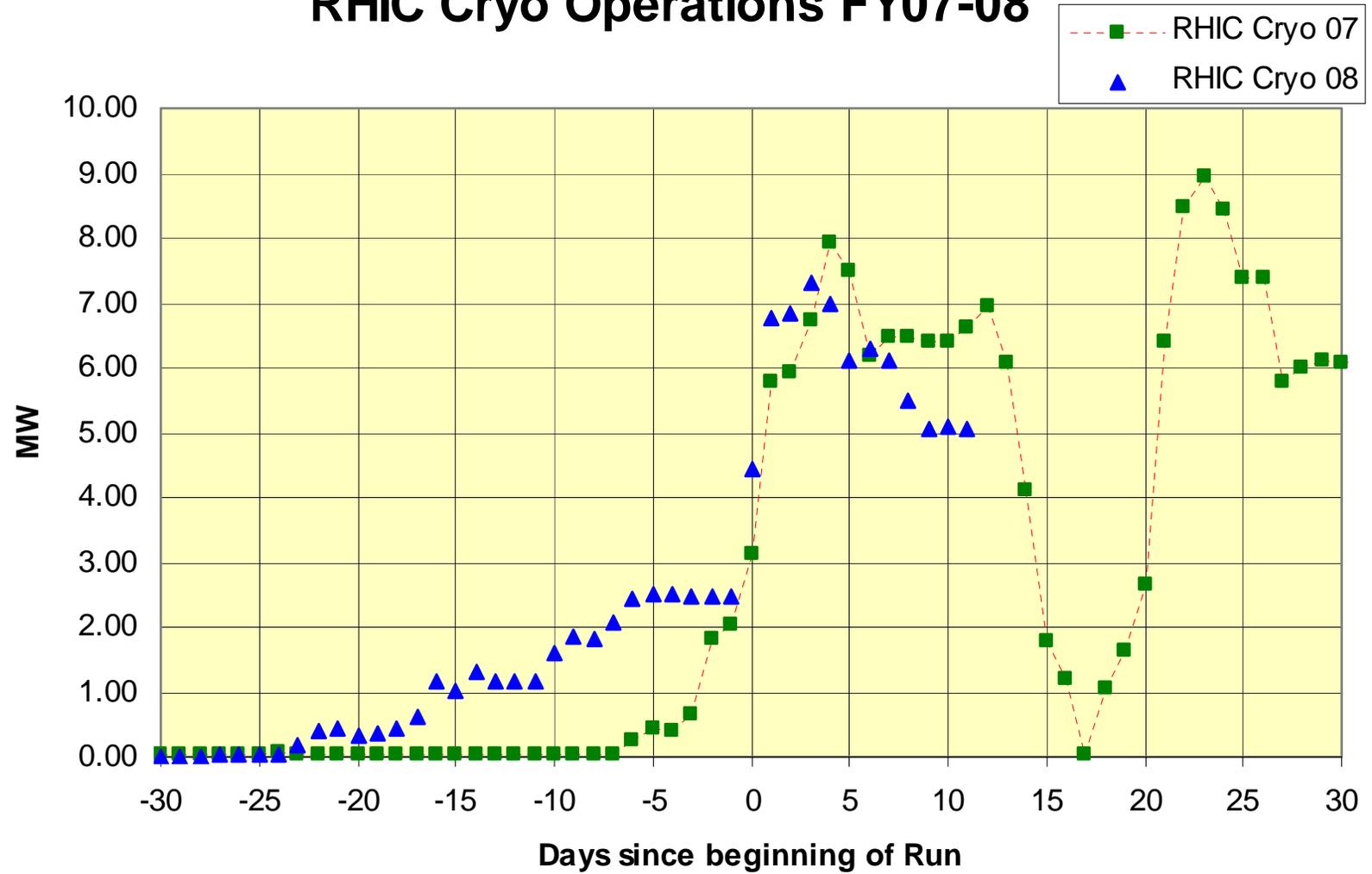
# BNL Energy Use FY 2006-8

(C-AD Bldg 911 power is in AGS-Exp/Mach)

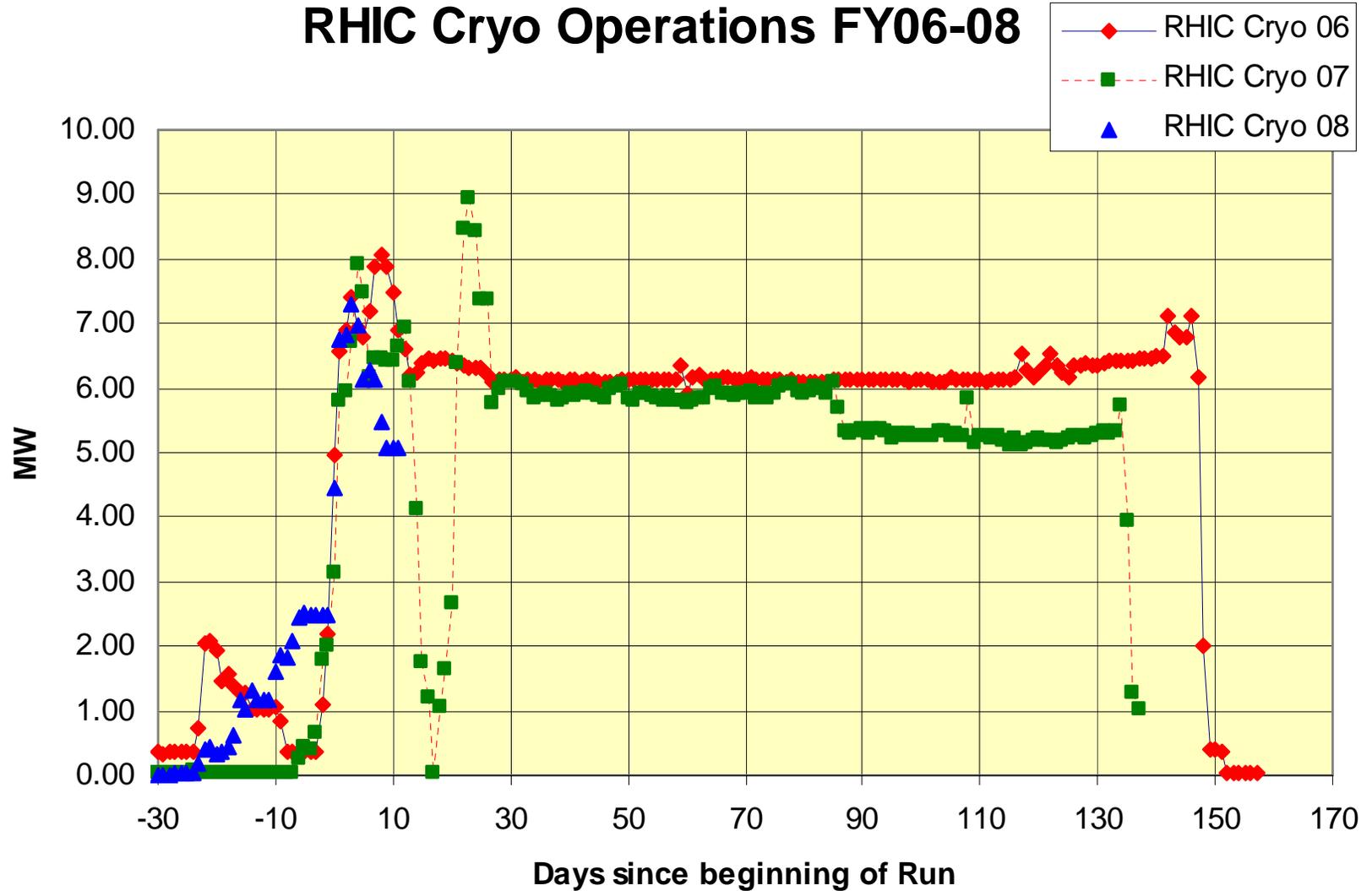
- RHIC Cryo
- AGS-Mach
- Tandem
- AGS-Exp
- Site Base
- \$/MWhr
- RHIC other
- CAD Bldg less SMD
- Booster
- NSRL
- Peak-Av



# RHIC Cryo Operations FY07-08



# RHIC Cryo Operations FY06-08



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13 Nov 07

## Next Meeting

Tuesday, November 20

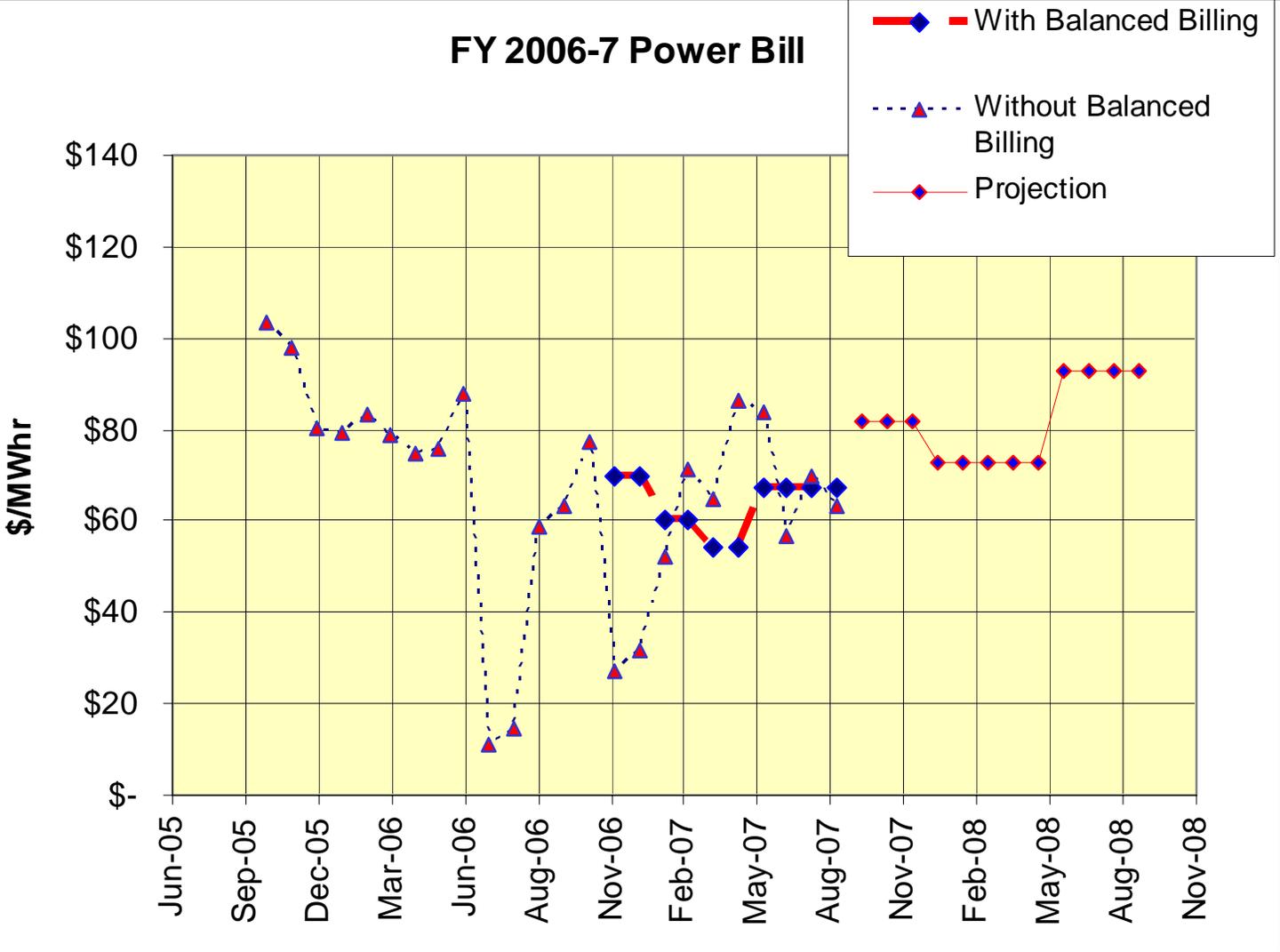
### Agenda items:

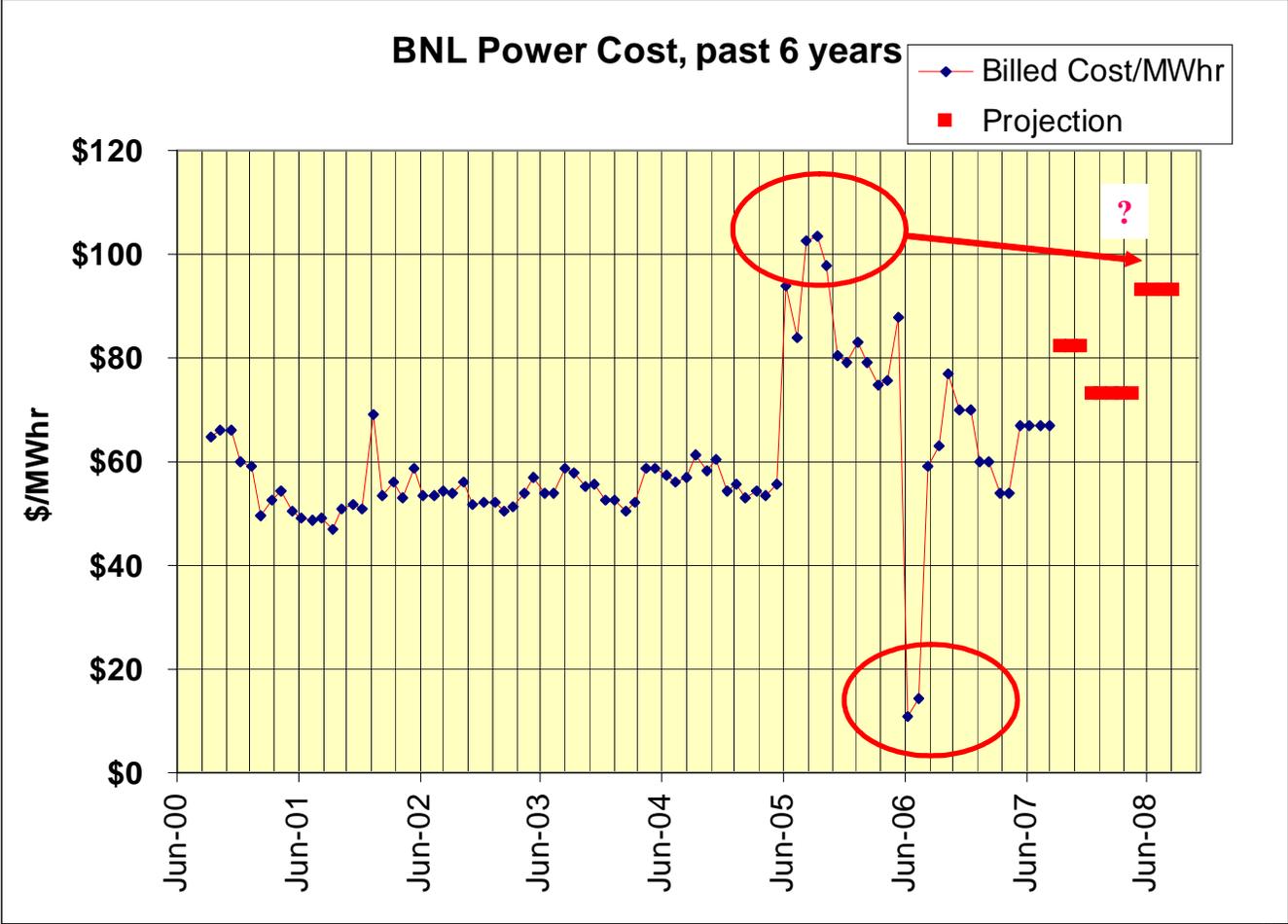
- Open

## Run 8 Log

- **25 Oct, begin 45 degree cold wave (2.5 MW-NEW)**
- **1 Nov, Cooldown Begins**
- **4 Nov, Blue Ring Cold but still Stabilizing**
- **6 Nov, Blue and Yellow Cold and Stable**

### FY 2006-7 Power Bill





8

## Experiments luminosity goals for Run 8, 100 x 100 GeV pp

### – PHENIX

- Delivered luminosity = **140 nb<sup>-1</sup>**
- Recorded luminosity = **35 nb<sup>-1</sup>**
  - Longitudinal Polarization goal: **26 nb<sup>-1</sup>**
  - Transverse polarization luminosity goal: **9 nb<sup>-1</sup>**
- Assumed efficiencies: **48% vertex, 64% up, 82% live → 25% overall**
- Assumed polarization: **65%**
- Approximate physics weeks: **12**

### – STAR

- Delivered luminosity = **90 nb<sup>-1</sup>**
  - Longitudinal polarization goal: **60 nb<sup>-1</sup>**
  - Transverse polarization luminosity goal: **30 nb<sup>-1</sup>**
- Slow detector sampled luminosity (Transverse and Longitudinal) = **30 nb<sup>-1</sup>**
- Assumed efficiencies: **50% uptime, 65% live → 33% overall**
- Assumed polarization: **65%**
- Approximate physics weeks: **12**
  
- pp2pp: **3 days of dedicated running**
- Goals: **20M elastics, 300K double pomeron exchange events**

An issue: In 2006 it took 6 weeks of physics running to get from ~45% polarization to ~60% polarization, above goals assume 65% from physics day 1

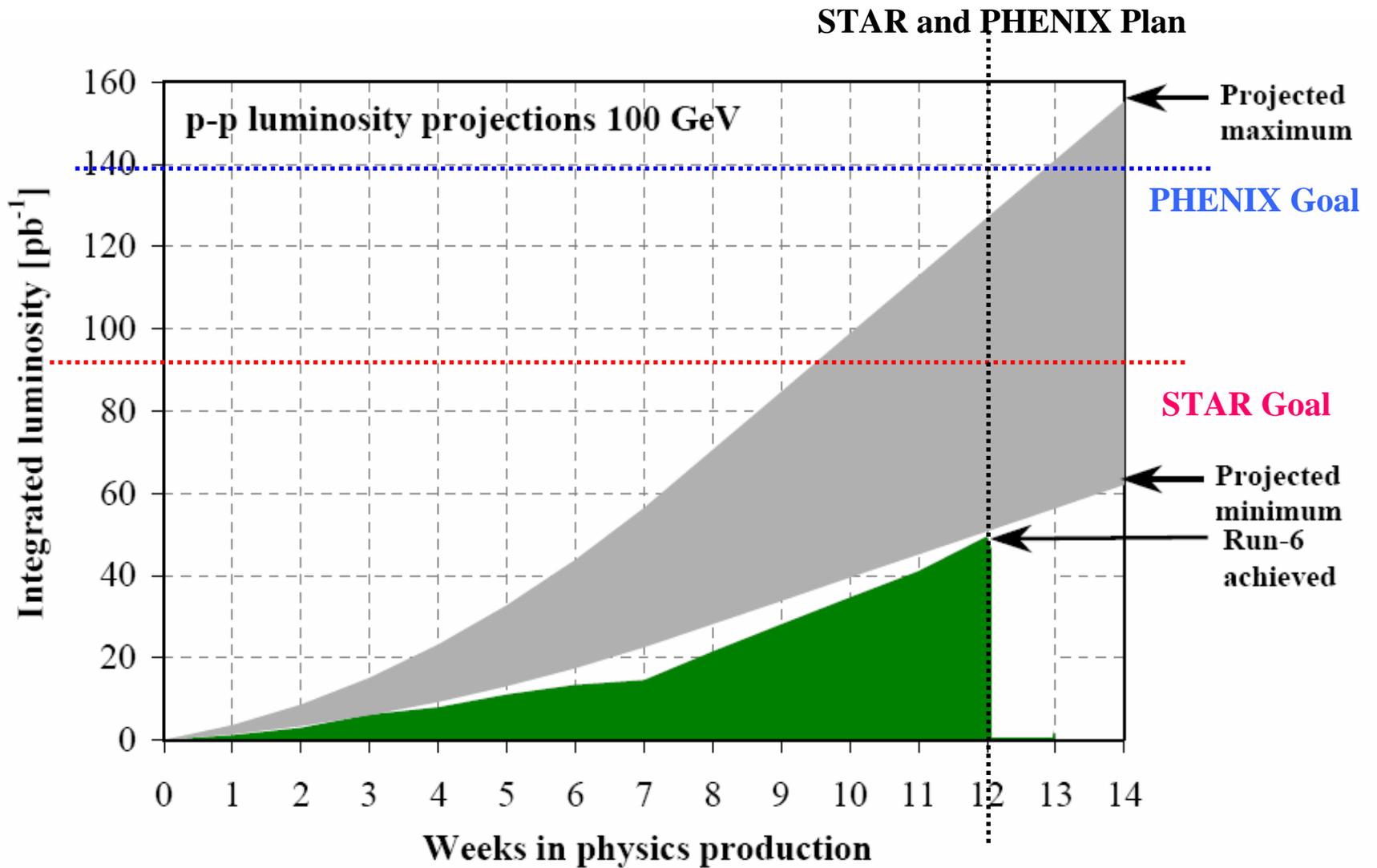


Figure 3: Projected minimum and maximum integrated luminosities for polarized proton collisions at 100 GeV beam energy, assuming linear weekly luminosity ramp-up in 8 weeks. An average store polarization of 65% is expected.

(last update 10/23/07)

## Experiments luminosity goals for Run 8 100 x 100 GeV/n d-Au

### – PHENIX

- Delivered luminosity = **230** nb<sup>-1</sup>
- Recorded luminosity = **58** nb<sup>-1</sup>
- Assumed efficiencies: 48% vertex, 53% live → **25% overall**
- Approximate weeks: 10

### – STAR

- Delivered luminosity = **120** nb<sup>-1</sup>
- Fast Detector sampled luminosity = **60** nb<sup>-1</sup>
- Slow Detector sampled luminosity = **30** nb<sup>-1</sup>
- Fast detector overall sampling efficiency = **50%**
- Approximate weeks: 10

### – Monopole Proposal – Detector Tests

- Once ~ 20:1 signal to background is achieved in building 902, move to 10:00 IR, reestablish good signal to background and then request collisions

## STAR and PHENIX Plan

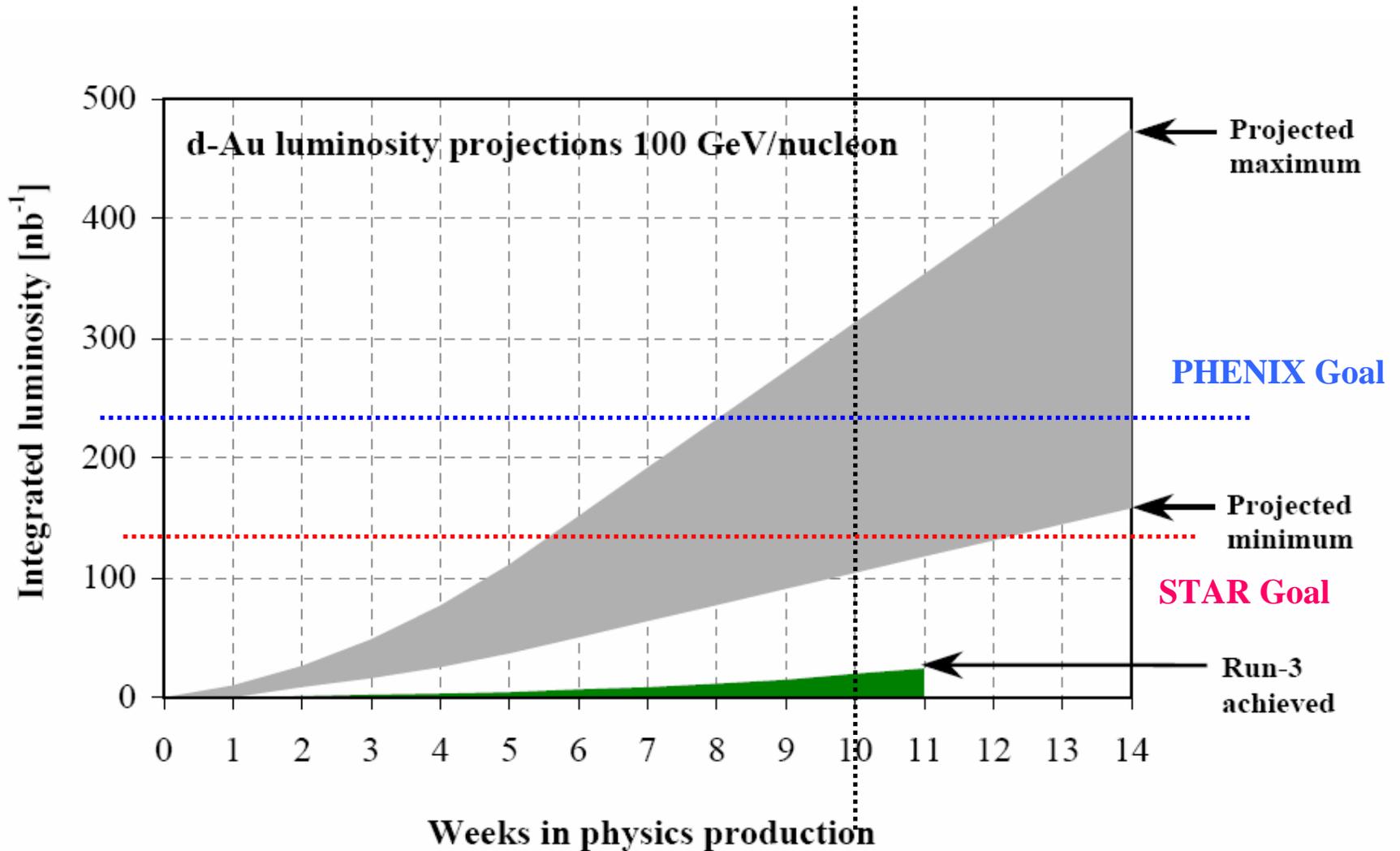
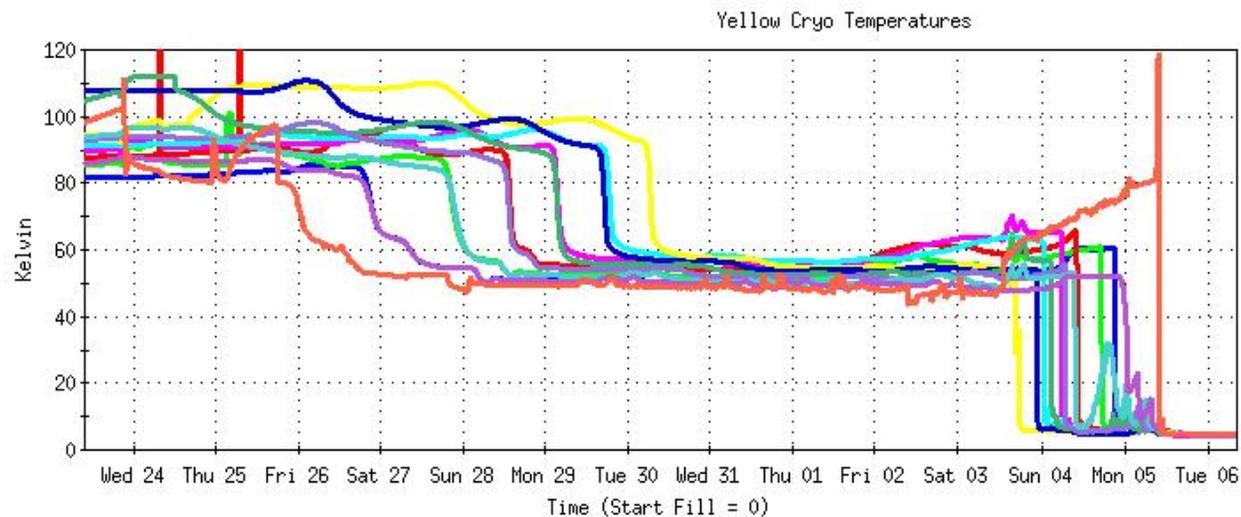
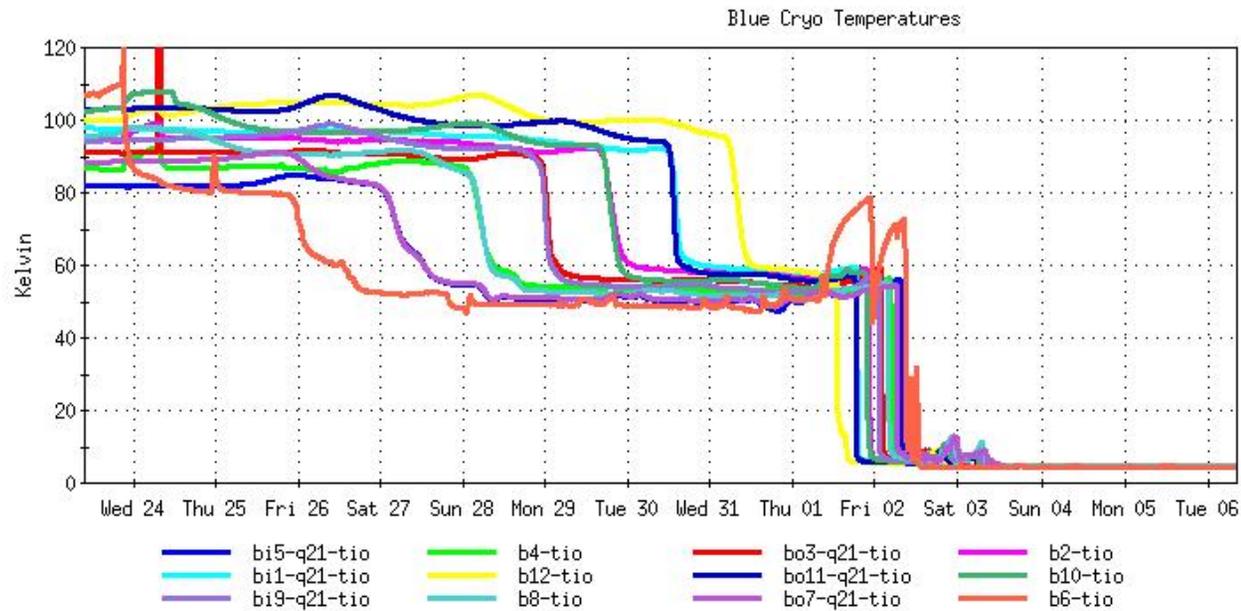


Figure 2: Projected minimum and maximum integrated luminosities for deuteron-gold collisions at 100 GeV/nucleon beam energy, assuming linear weekly luminosity ramp-up in 6 weeks.

# Cryogenic Blue & Yellow Rings (14 days)

[Ring Summary \(1 day\)](#) [Sector Plots \(1 day\)](#) [Sector Plots \(14 days\)](#)

Window Markers Analysis

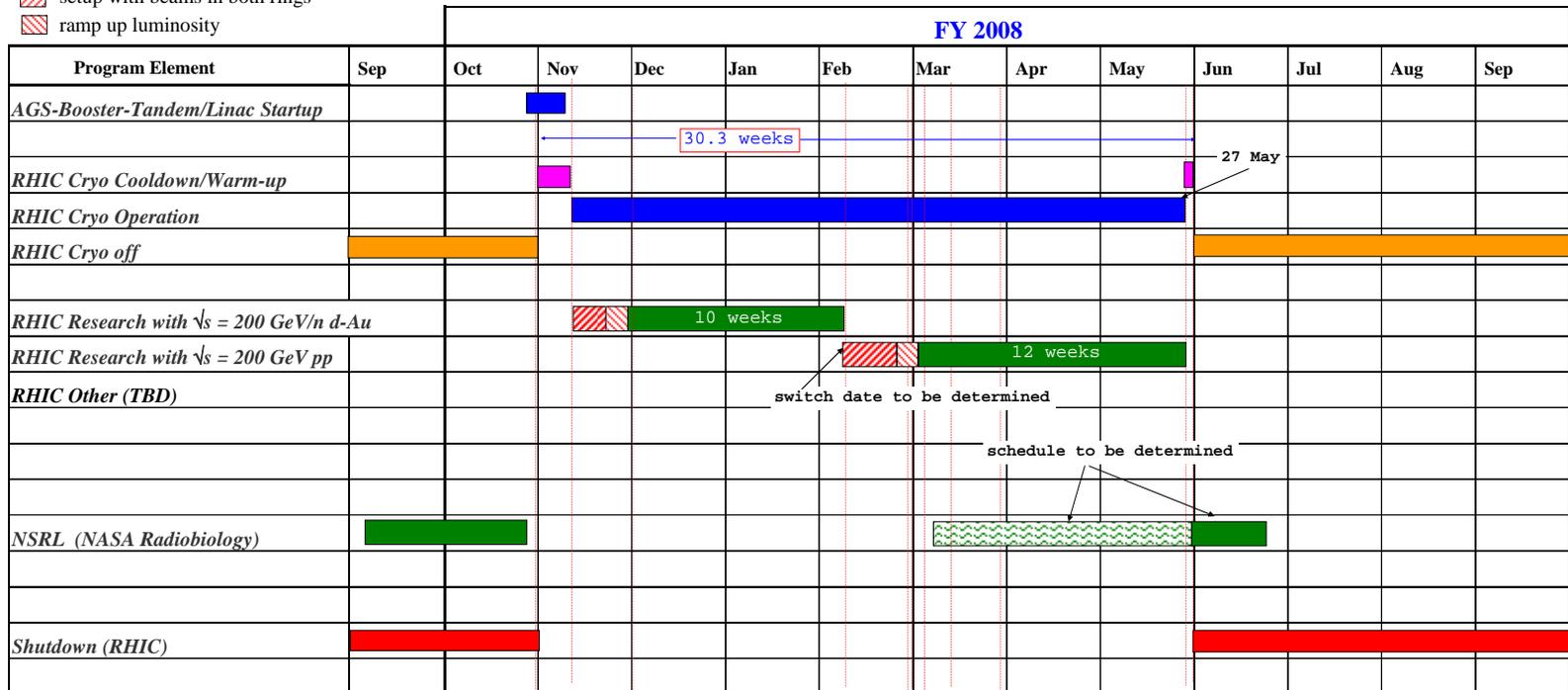


# C-A Operations-FY08

1 Oct 07

*Planned, subject to change*

-  concurrent with RHIC
-  setup with beams in both rings
-  ramp up luminosity



# Fischer et.al. Possible 30 week run schedule

Cool-down from 80 K to 4 K	1 ½ week
Set-up mode 1 (d-Au)	1 ½ weeks
Ramp-up mode 1	1 week
Data taking mode 1 with further ramp-up	11 weeks
Set-up mode 2 (p↑-p↑)	2 ½ weeks
Ramp-up mode 2	1 week
Data taking mode 2 with further ramp-up	11 weeks
Warm-up	½ week