RUN 11 RHIC MACHINE/EXPERIMENTS MEETING

21 Dec 2010

Agenda:

•

RUN 11 RHIC MACHINE/EXPERIMENTS MEETING

DECISIONS

11/23/2010

- Agreed to new APEX schedule, 12 hour sessions (0800-2400) every other week away from maintenance days.

http://www.bnl.gov/cad/esfd

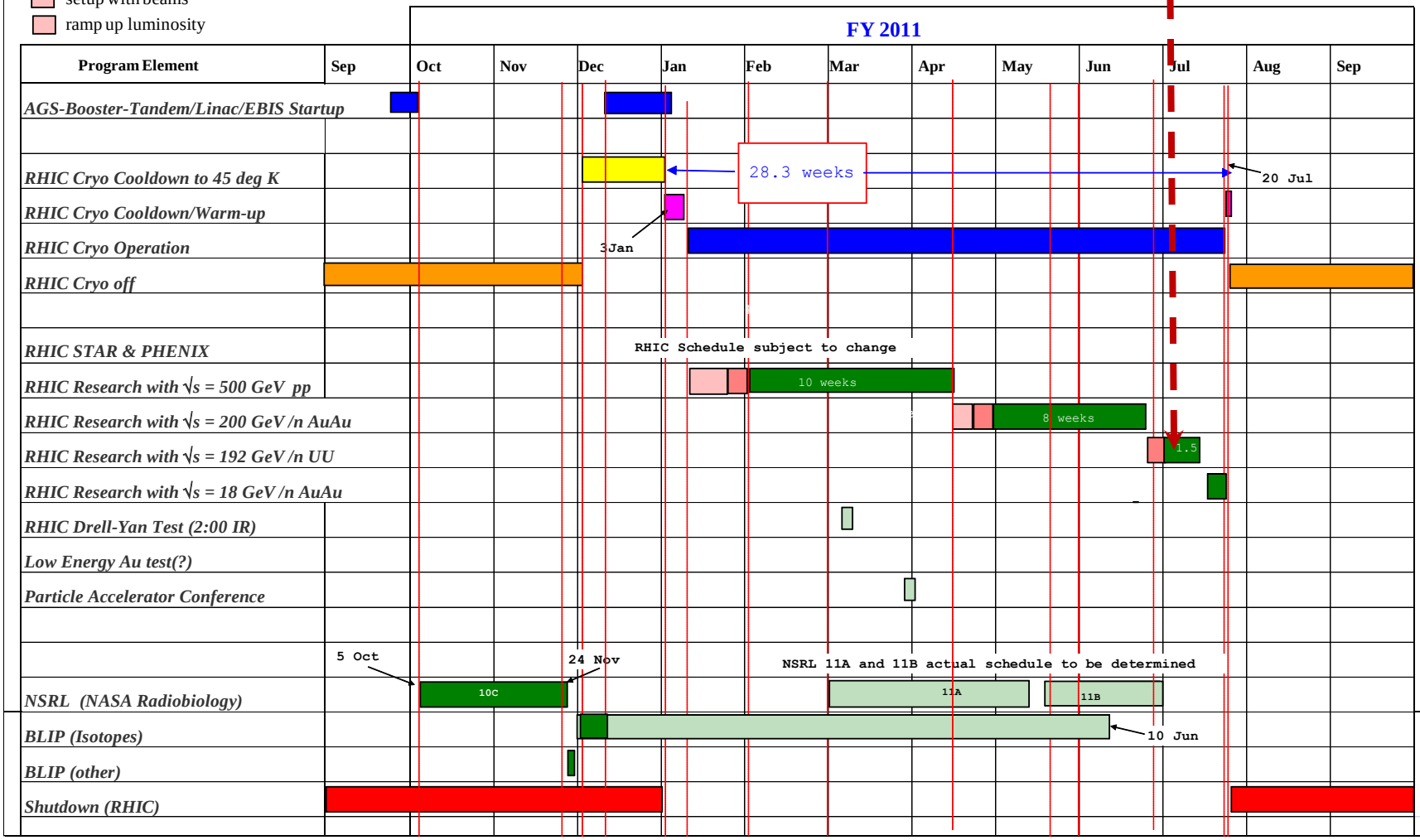
C-A Operations-FY11

23 Nov 10

26 weeks

planned (budget permitting)

concurrent with RHIC
setup with beams
ramp up luminosity

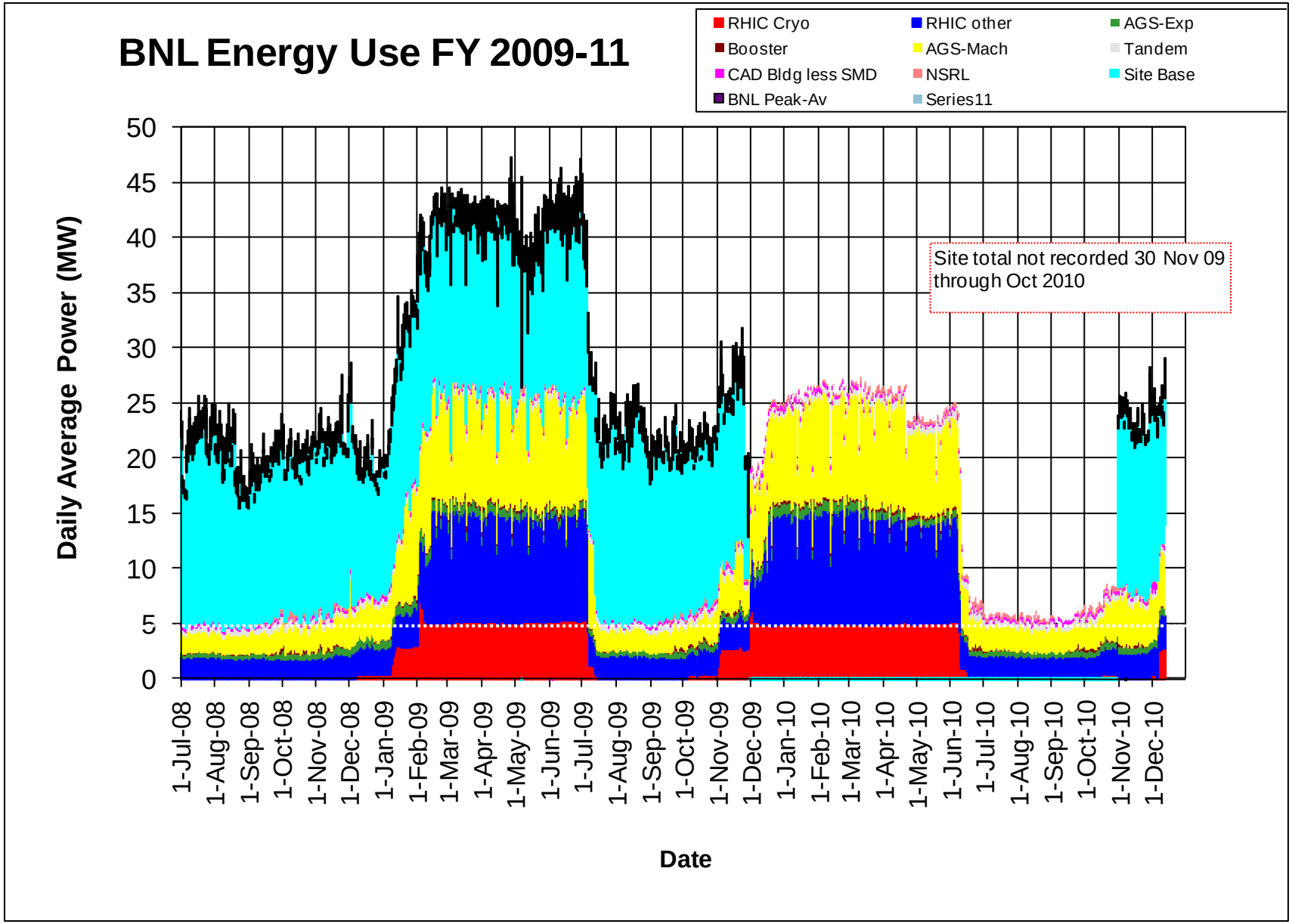


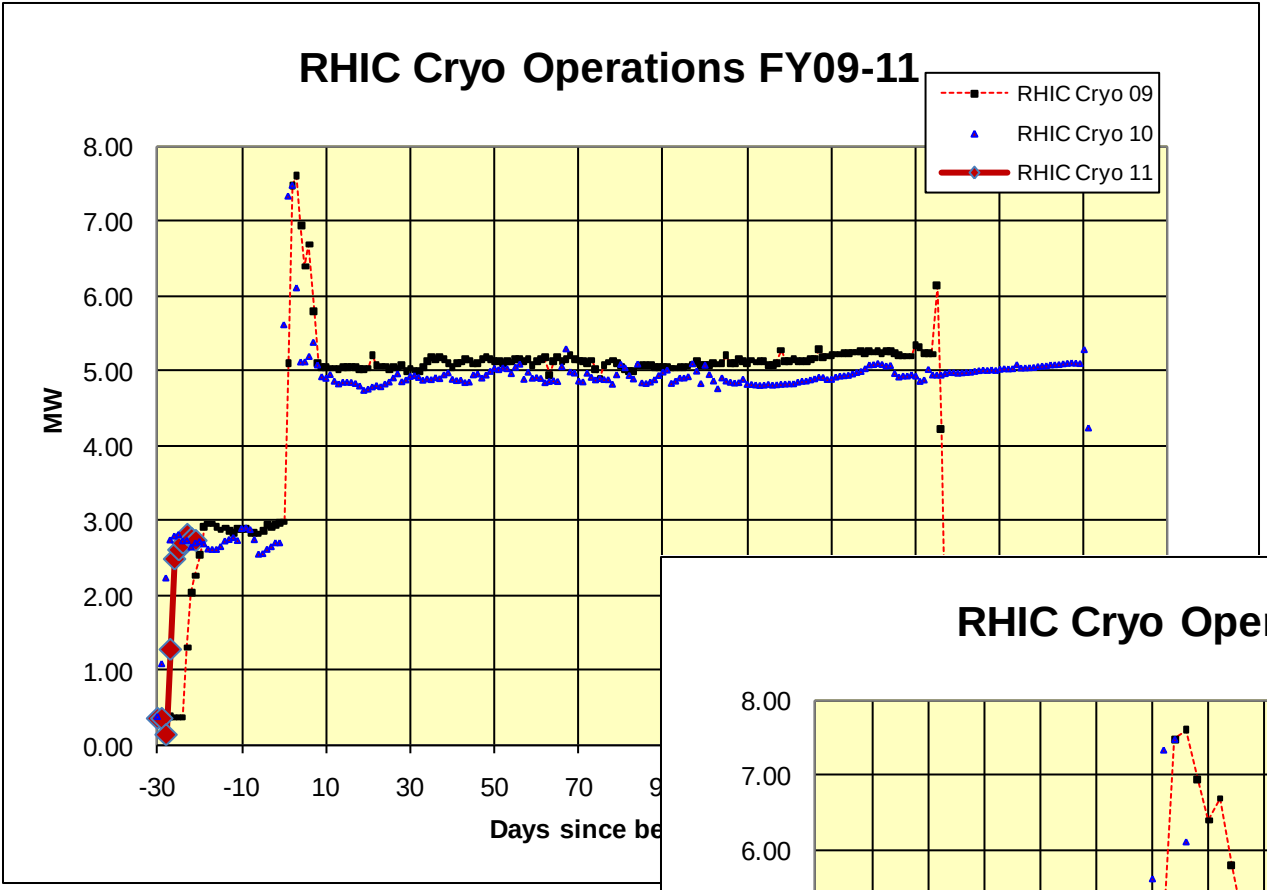
Run 11 Plan based on PAC recommendation/ALD Guidance and 28.3 weeks cryo operation
11/23/10 update

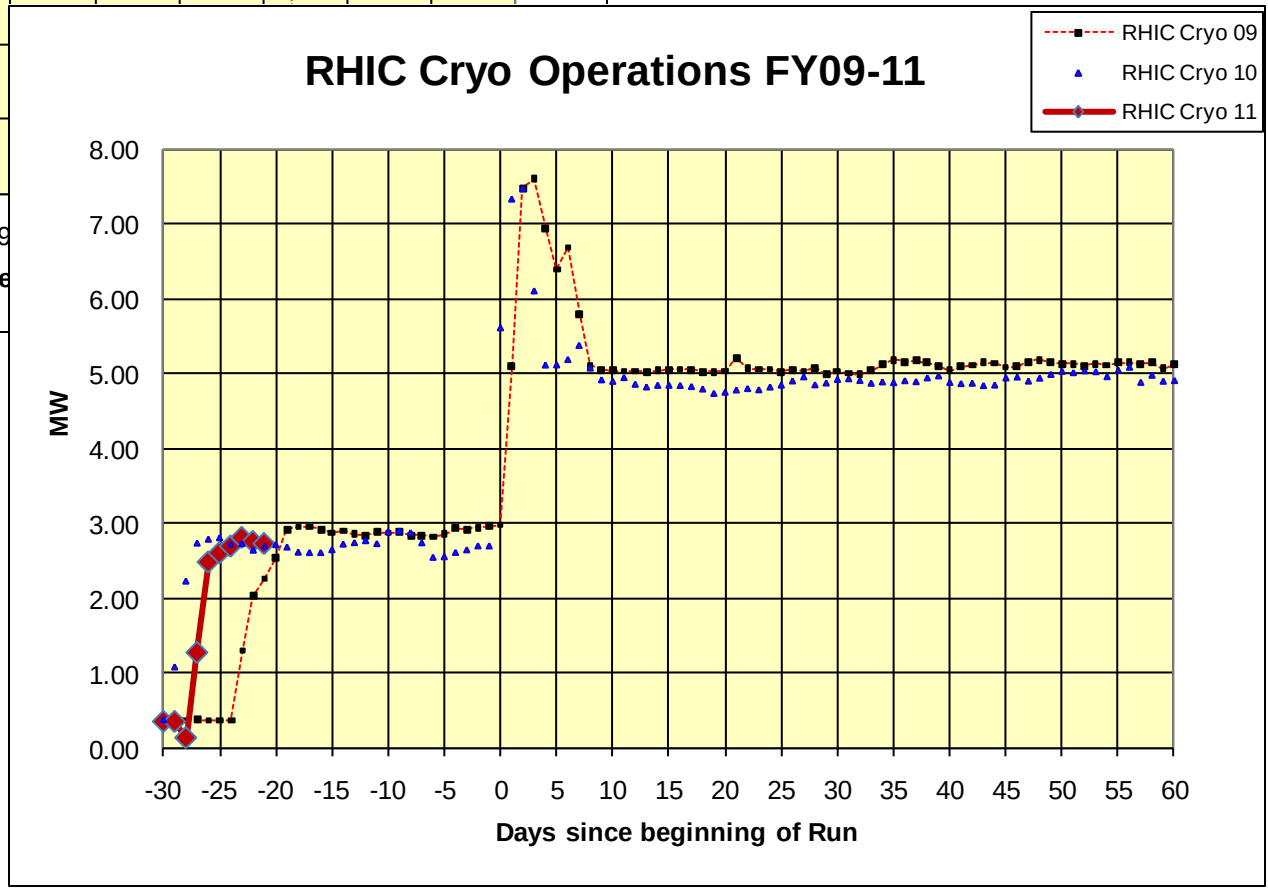
- 3 Jan, Begin cool-down to 4.5K
- 9 Jan, Cool-down to 4.5K complete in both rings
- 11 Jan, 2 ½ weeks beam setup for √s = 500 GeV pp in RHIC begins.
- 27 Jan (Thursday), 1 week Ramp-up with 8 hr/night beam to experiments
- **3 Feb, begin 10 week physics run (√s = 500 GeV pp)**
- **28 March – 1 April, PAC 2011**
- **14 Apr, end 10 week physics run at √s = 500 GeV pp run**
- 14 Apr, begin 1 week setup for √s = 200 AuAu
- 21 Apr, begin 1 week Ramp-up with 8 hr/night beam to experiments
- **28 Apr, begin 8 week physics run at (√s = 200 AuAu)**
- **23 Jun, end 8 week √s = 200 AuAu run**
- 23 Jun, begin setup for √s = 192 GeV UU
- **30 Jun, begin 1½ week physics run (√s = 192 UU)**
- **4 July – completed 26 weeks of cryo operation, may be out of $$'s**
- **10 Jul, end 1½ week physics run at √s = 192 GeV**
- 10 Jul, begin setup for √s = 18 GeV AuAu
- **11 Jul, begin 1 week physics run (√s = 18 AuAu)**
- **18 Jul, end 1 week physics run at √s = 18 GeV**
- 20 Jul, warm-up complete (28.3 weeks)

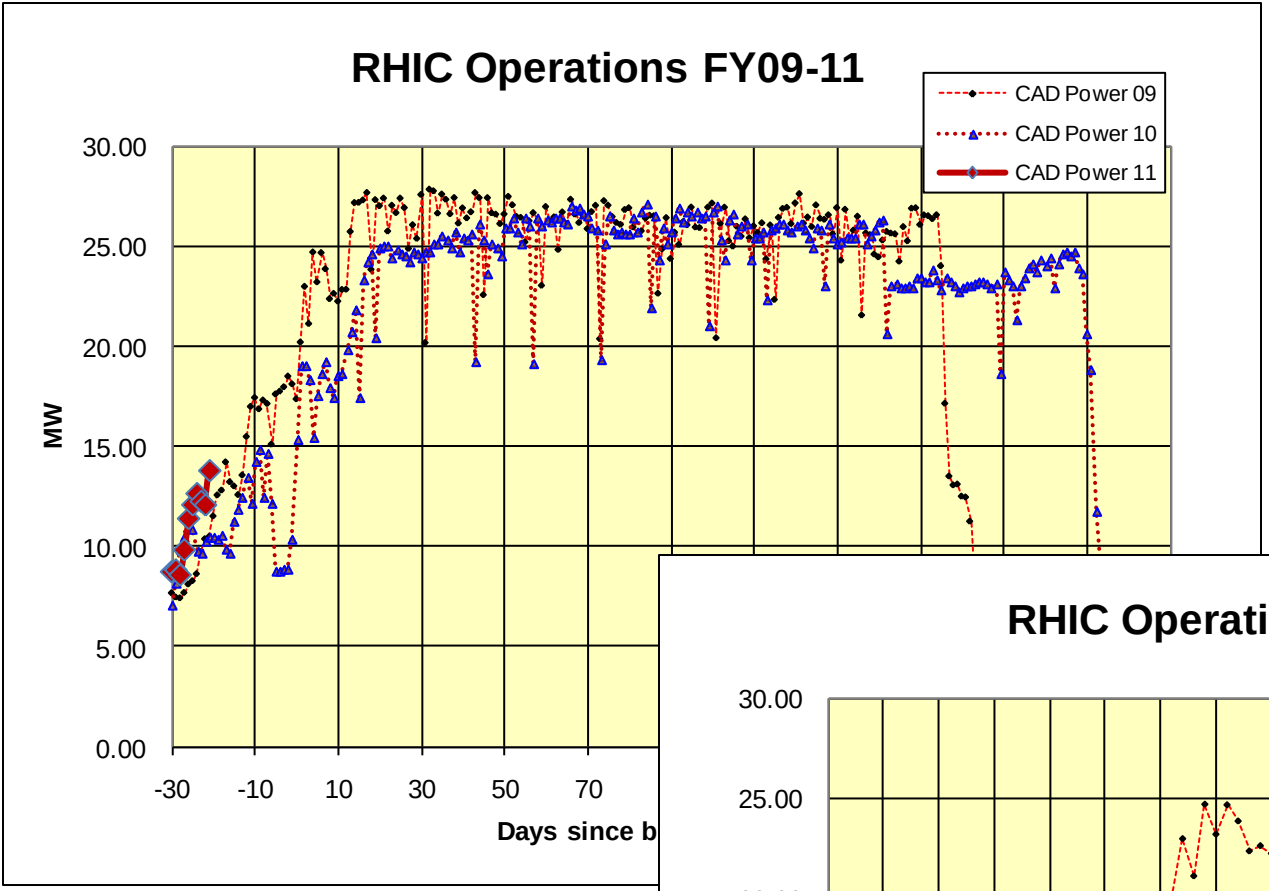
Possible additions:

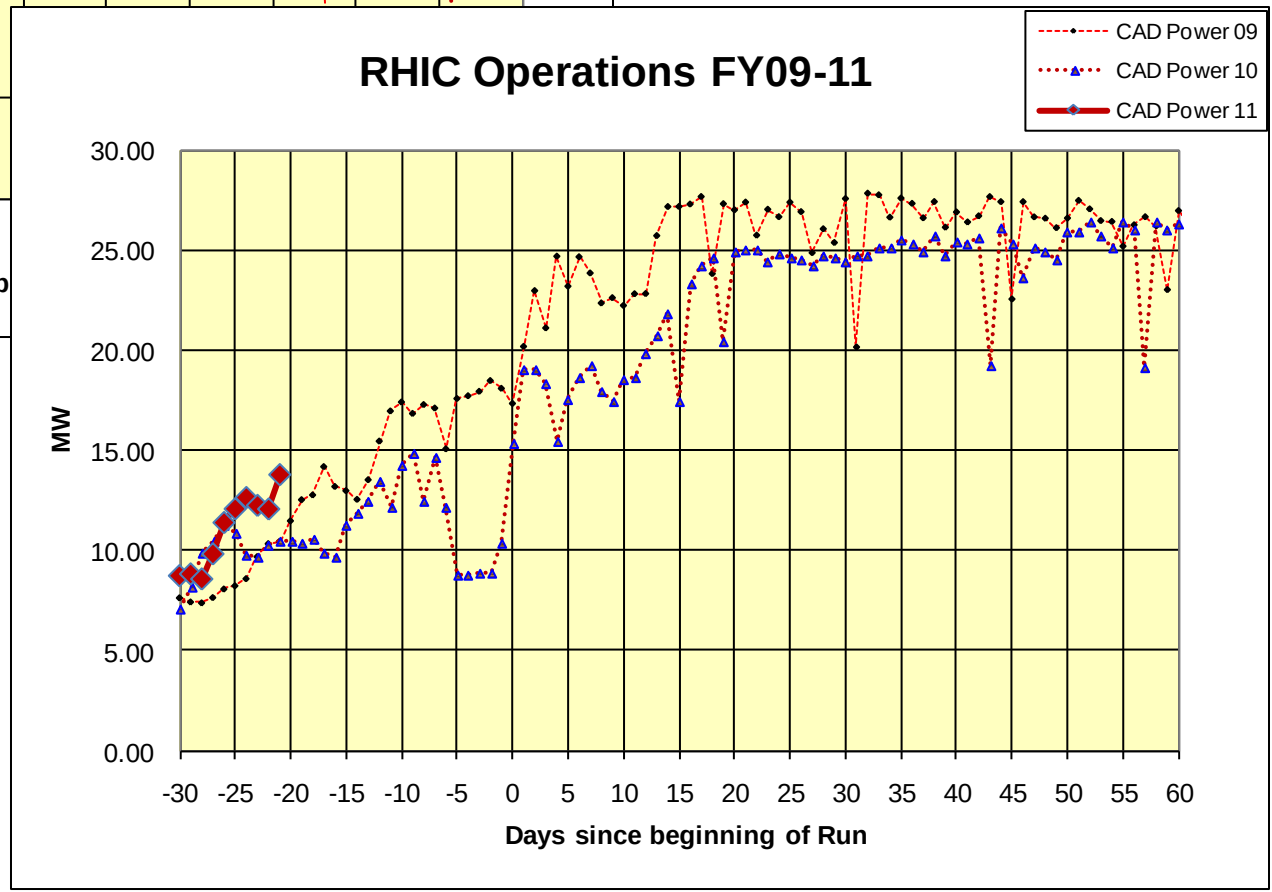
- Low energy test run

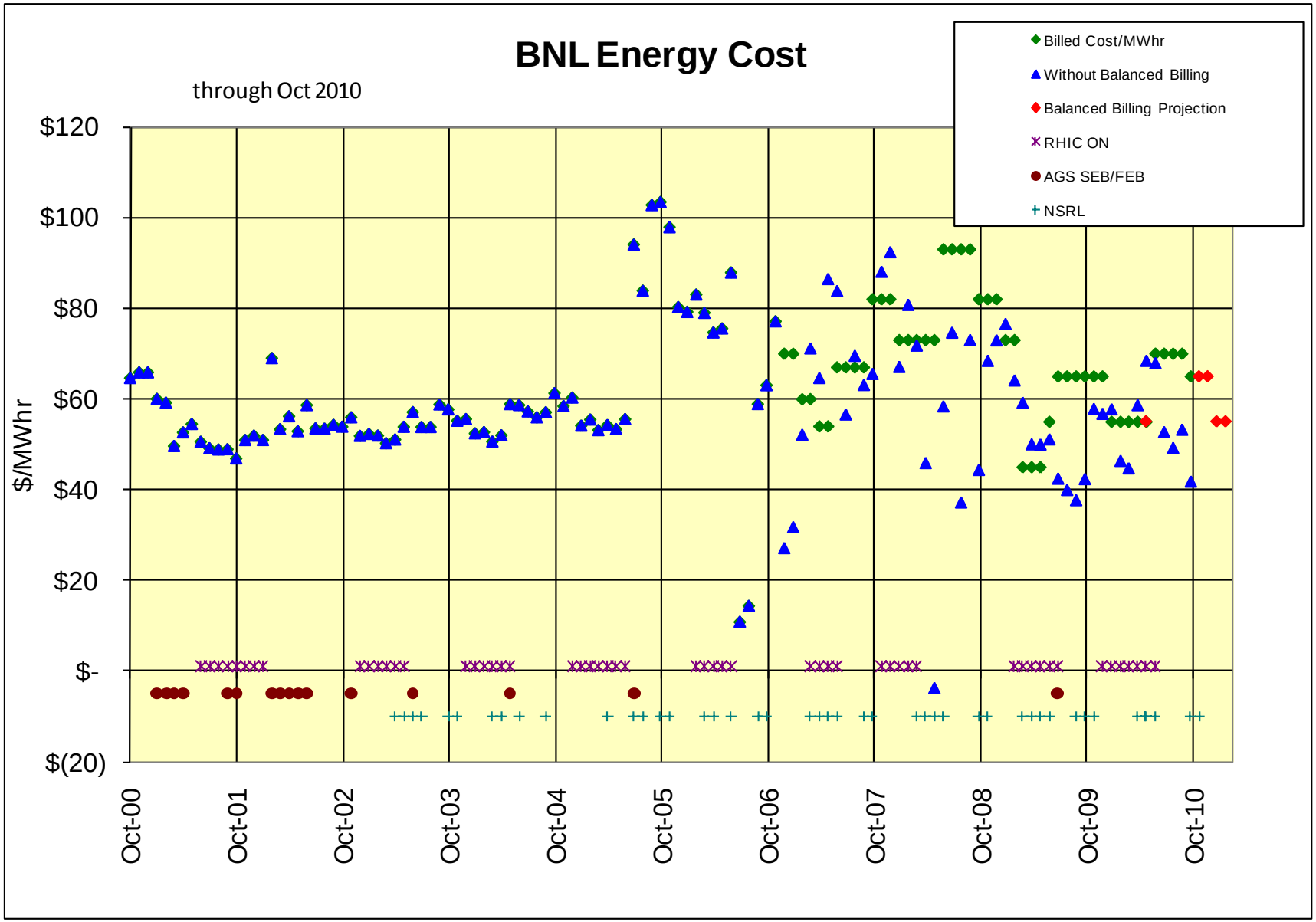

BNL Energy Use FY 2009-11
RHIC Cryo
RHIC other
AGS-Exp
Booster
AGS-Mach
Tandem
CAD Bldg less SMD
NSRL
Site Base
BNL Peak-Av
Series11
Site total not recorded 30 Nov 09 through Oct 2010
Daily Average Power (MW)
50
45
40
35
30
25
20
15
10
5
0
1-Jul-08
1-Aug-08
1-Sep-08
1-Oct-08
1-Nov-08
1-Dec-08
1-Jan-09
1-Feb-09
1-Mar-09
1-Apr-09
1-May-09
1-Jun-09
1-Jul-09
1-Aug-09
1-Sep-09
1-Oct-09
1-Nov-09
1-Dec-09
1-Jan-10
1-Feb-10
1-Mar-10
1-Apr-10
1-May-10
1-Jun-10
1-Jul-10
1-Aug-10
1-Sep-10
1-Oct-10
1-Nov-10
1-Dec-10
Date


RHIC Cryo Operations FY09-11
RHIC Cryo 09
RHIC Cryo 10
RHIC Cryo 11
MW
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
-30
-10
10
30
50
70
Days since be


RHIC Cryo Operations FY09-11
RHIC Cryo 09
RHIC Cryo 10
RHIC Cryo 11
MW
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
35
40
45
50
55
60
Days since beginning of Run

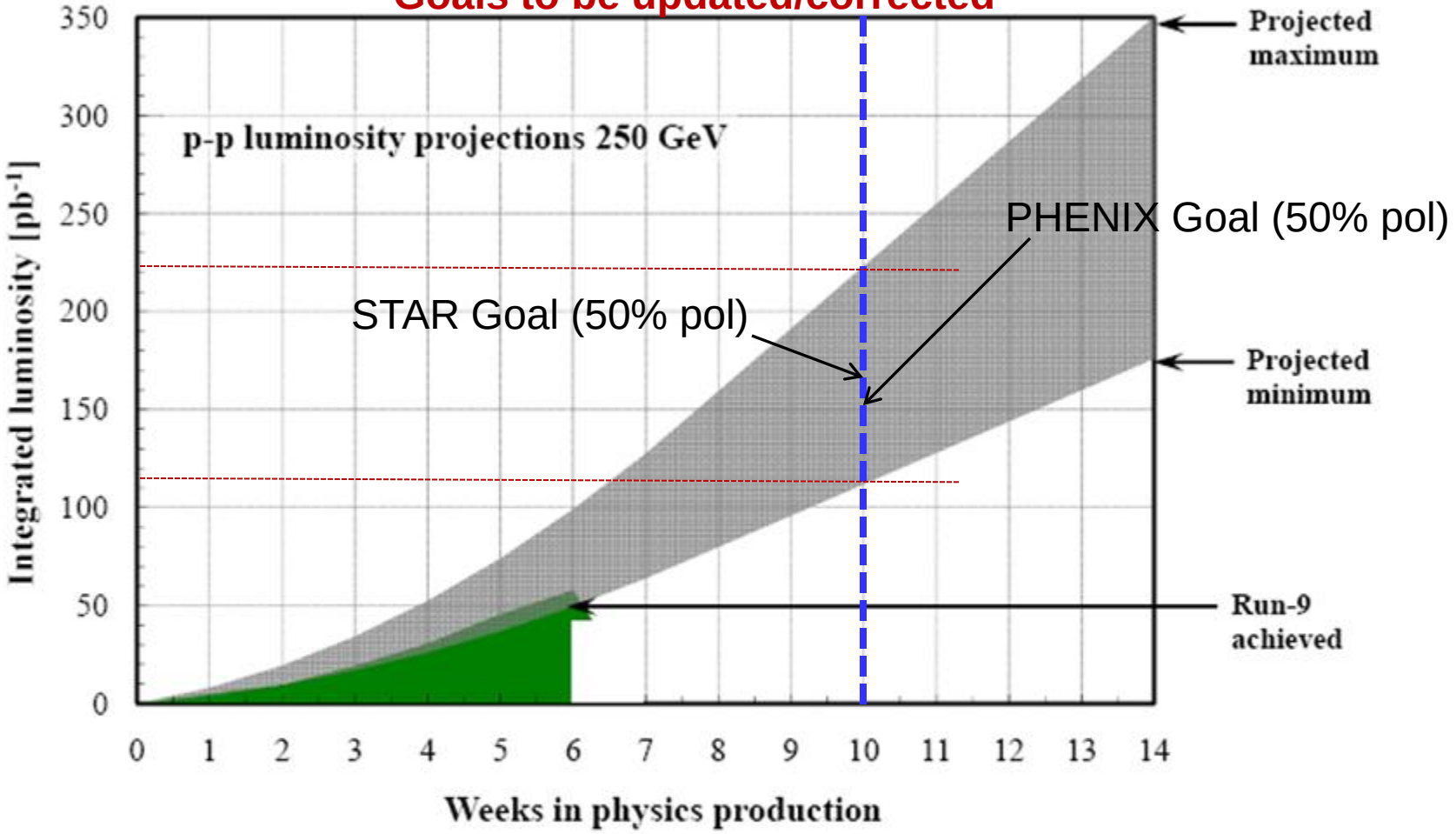

RHIC Operations FY09-11
CAD Power 09
CAD Power 10
CAD Power 11
30.00
25.00
20.00
15.00
10.00
5.00
0.00
MW
-30
-10
10
30
50
70
Days since b


RHIC Operations FY09-11
CAD Power 09
CAD Power 10
CAD Power 11
30.00
25.00
20.00
15.00
10.00
5.00
0.00
MW
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
35
40
45
50
55
60
Days since beginning of Run


BNL Energy Cost
through Oct 2010
Billed Cost/MWhr
Without Balanced Billing
Balanced Billing Projection
RHIC ON
AGS SEB/FEB
NSRL
$/MWhr
$120
$100
$80
$60
$40
$20
$-
$(20)
Oct-00
Oct-01
Oct-02
Oct-03
Oct-04
Oct-05
Oct-06
Oct-07
Oct-08
Oct-09
Oct-10

Run-11 p↑-p↑ luminosity projections

Goals to be updated/corrected



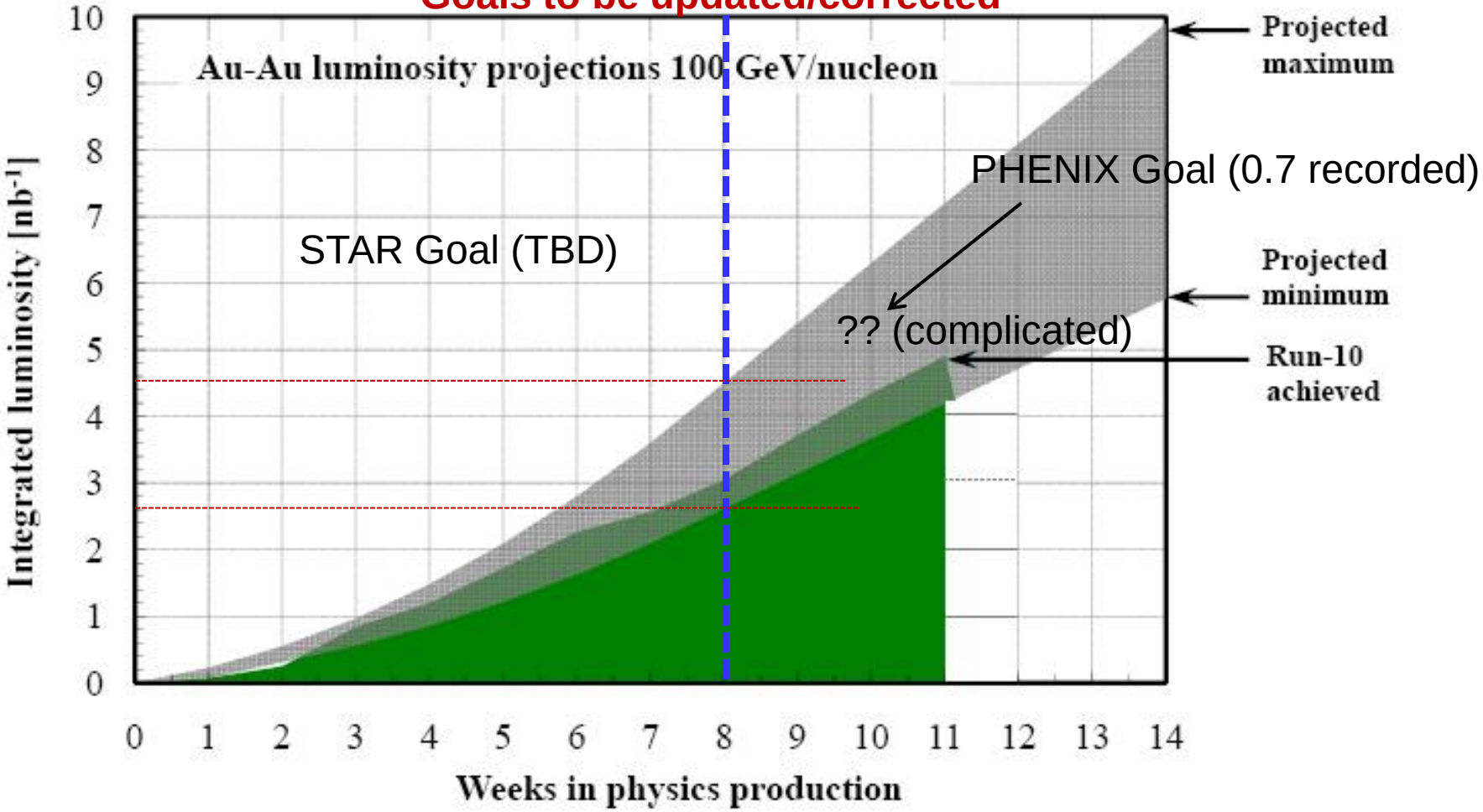
Assume 8 weeks to ramp-up for max.

Expect store P_{avg} = 35-50%, L_{avg} up to 100x10^{30}cm^{-2}s^{-1} (+80%).

[from Run-9 to max projection: β^* = 0.7 → 0.6 m, N_b = 1.1 → 1.4x10^{11}]

Run-11 Au-Au luminosity projections 100 GeV/nucleon

Goals to be updated/corrected



Assume 6 weeks to ramp-up for min, and 8 weeks for max (stoch. cooling re-commissioning).

Expect L_{avg} up to 25x10^{26}cm^{-2}s^{-1} (+25%).

[from Run-10 to max: β^* = 0.75 ➔ 0.65 m, N_b = 1.1 ➔ 1.1x10^9, more cooling]