

Run 16 RHIC Machine/Experiments Meeting

May 24, 2016

Agenda:

- Discussion of change over date from 62 to 19.6 GeV dAu running
- Presentation from PHENIX on 62 to 19.6 GeV change over date
- Request for a CeC Presentation at the May 31st meeting
- AOB

READYTALK LOGIN INFO

Audio Login

Toll-Free (US & Canada): 9-1-866-740-1260

Toll: 303.248.0285

Access Code: 8304505

ReadyTalk link <https://core.readytalk.com/interface/guest.jsp?host=readytalk&an=8667401260&ac=8304505>

The Calendar

January						
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June						
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- Cool down to 4.5K starts on January 19th.
- Physics Running Declared on Sunday February 7th.
- Physics Running halted by Diode at 7 am on Friday March 18th
- Physics running restarted on Wednesday evening, April 6th.
- Gap of ~ 19.5 days
- Original “10 wks” of AuAu physics running would have been concluded on Sunday April 17th.
- Adding 21.5 days to this original end date, one lands on Monday May 9th.
- Setup for 200 GeV dAu on May 9th.
- Start of 200 GeV dAu Physics run May 12th.
- Start of 200 GeV dAu Run May 12th.
- End of 200 GeV dAu on May 20th.
- Start of 62 GeV dAu on May 21st.
- Original date for the start of the Cryo warm up (20 wks) was Friday, June 3rd.
- With 3.3 week extension, Cryo warm up will start on Monday June 27th
- Shown in Magenta is the CeC running.

Run 16 plan based on 20 weeks cryo operation

and Fischer et.al. RHIC Collider Projections (FY 2016 – FY 2022), 19 April 2015

Today, May 24th

- 19 Jan, Begin cool-down to 4.5K
- 25 Jan, Beam in Yellow
- ~~22~~ 26 Jan, Beam in Blue
- ~~29 Jan~~, Feb 3, First Collisions
- ~~5~~ 7 Feb, Begin 10 week **$v_s=200$ GeV/n AuAu** physics run
- 7 am March 18th, RHIC Operations halted for Blue ring Diode issue
- 7 pm April 6th, RHIC Operations resumed (19.5 days offline)
- Decision made to add 19.5 days to the AuAu running to account for the Diode related down time
- 9 May, End 10 week (+ 2 days) $v_s=200$ GeV/n AuAu physics run
- 12 May, Begin 1 week **$v_s=200$ GeV/n dAu** physics run
- 20 May, End ~ 1 week $v_s=200$ GeV/n dAu physics run
- 21 May, Begin 1 week **$v_s=62$ GeV/n dAu** physics run
- 27 May, End 1 week $v_s=62$ GeV/n dAu physics run
- 28 May, Begin 1.5 week **$v_s=19.6$ GeV/n dAu** physics run
- 7 June, End 1.5 week $v_s=19.6$ GeV/n dAu physics run
- 10 June, Begin 1 week **$v_s=39$ GeV/n dAu** physics run
- 17 June, End 1 week $v_s=39$ GeV/n dAu physics run
- 20 June, Begin 7 day **$E=40$ GeV/n Au CEC** physics run
- 27 June, End 7 day $E=40$ GeV/n Au CEC physics run
- 27 June, begin cryo warm-up
- 1 July, Cryo warm-up complete, 23.5 cryo weeks of operation

- Actual physics time for each dAu energy is TBD

Schedule in Magenta is estimate
Schedule in Orange text not updated yet
Schedule in Blue text assumes CeC runs as planned

See <http://www.rhichome.bnl.gov/AP/RHIC2016/> for the Run Coordinator's detailed plan

SCHEDULE FOR WEEK FROM MONDAY May 23rd – MONDAY May 30th

- **Monday:**
 - Physics running
 - Vernier Scans of Experiments
 - Access from 10:30 am to about 12:30 pm for Tour and RHIC PS repair
- **Tuesday:**
 - Physics running all day
- **Wednesday:**
 - Physics running all day
 - EBIS maintenance behind store (?)
- **Thursday:**
 - Physics running all day
- **Friday until Monday:**
 - Physics running until 6:45 am
 - Access from 7 am to ~ 1 pm (6 hrs for maintenance and CeC garage replacement)
 - Physics running
- **Monday (May 30th, Memorial Day Holiday):**
 - 2 hour access to remove Bake out equipment from CeC region

It is expected that the transition from 62 GeV to 19.6 GeV dAu operations will occur in the period from Friday May 27th to Monday May 30th. Will be discussed in next mtg.

Archive

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- Cool down to 4.5K starts on January 19th.
- Physics Running Declared on Sunday February 7th.
- Physics Running halted by Diode at 7 am on Friday March 18th
- ~ 5 5/7's weeks
- Physics running restarted on Wednesday evening, April 6th.
- Gap of ~ 19.5 days
- Original "10 wks" of AuAu physics running would have been concluded on Sunday April 17th.
- If one adds 19.5 days to this original end date, one land on Saturday May 7th.
- Without any extension, the Cryo warm up completes on June 7th.
- *Shown in Magenta is where the CeC running would fall with A TWO WEEK EXTENSION.*
- Original date for the start of the Cryo warm up was Friday, June 3rd.
- 20 Cryo weeks total.

Outcome from the April 12th RHIC Coordination meeting

- A decision that was taken at the meeting was that the earliest end date for the AuAu running would be pushed from April 17th (original end date for 10 weeks of physics running) to the vicinity of May 7th. This accounts for the 19.5 days that RHIC was offline for the diode repair.
- Extending Run 16. Given the funds saved from the reduced power load during the three weeks that RHIC was offline, and the lower cost for power through February of this year (March Power costs not yet known), the funds were deemed to be available to extend the run by at least two weeks.
- Depending on the power cost for March, it may be possible to add an additional week to the run, making for a total of a three week extension. It is expected that the power cost for March will be known soon (this week) and thus a final decision of the length of a possible run extension will be made by/at the RHIC Coordination meeting on April 26th.
- To better understand the implications of the possible options for allocating the RHIC beam time between May 7th (earliest end of AuAu running) and the end date for the run, Berndt asked both collaborations to provide him with input to specific questions.
- The date for detailing all aspects of the plan for the remainder of Run 16 is by or on April 26th.

Run 16 plan based on 20 weeks cryo operation

and Fischer et.al. RHIC Collider Projections (FY 2016 – FY 2022), 19 April 2015

Today, April 12th

- 19 Jan, Begin cool-down to 4.5K
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- ~~29~~ Jan, Feb 3, First Collisions
- ~~5~~ 7 Feb, Begin 10 week vs=200 GeV/n AuAu physics run
- 7 am March 18th, RHIC Operations halted for Blue ring Diode issue
- 7 pm on April 6th, RHIC Operations resumes (19.5 days down).
- ~~15~~ 18 April, End 10 week vs=200 GeV/n AuAu physics run
- ~~16~~ 19 April, Begin 1.4 week vs=20 GeV/n dAu physics run
- ~~26~~ 29 April, End 1.4 week vs=20 GeV/n dAu physics run
- 29 April, Begin 1.4 week vs=39 GeV/n dAu physics run
- 9 May, End 1.4 week vs=39 GeV/n dAu physics run
- 12 May, Begin 0.9 week vs=62 GeV/n dAu physics run
- 18 May, End 0.9 week vs=62 GeV/n dAu physics run
- 21 May, Begin 0.9 week vs=200 GeV/n dAu physics run
- 27 May, End 0.9 week vs=200 GeV/n dAu physics run
- 29 May, Begin 5 day E=40 GeV/n Au CEC physics run
- 3 June, End 5 day E=40 GeV/n Au CEC physics run
- 3 June, begin cryo warm-up
- 7 June, cryo warm-up complete, 20.0 cryo weeks of operation

dAu schedule as proposed by PHENIX,
scaled to 4.7 total physics weeks

- Actual physics time for each energy is TBD

Schedule in Orange
text not updated yet

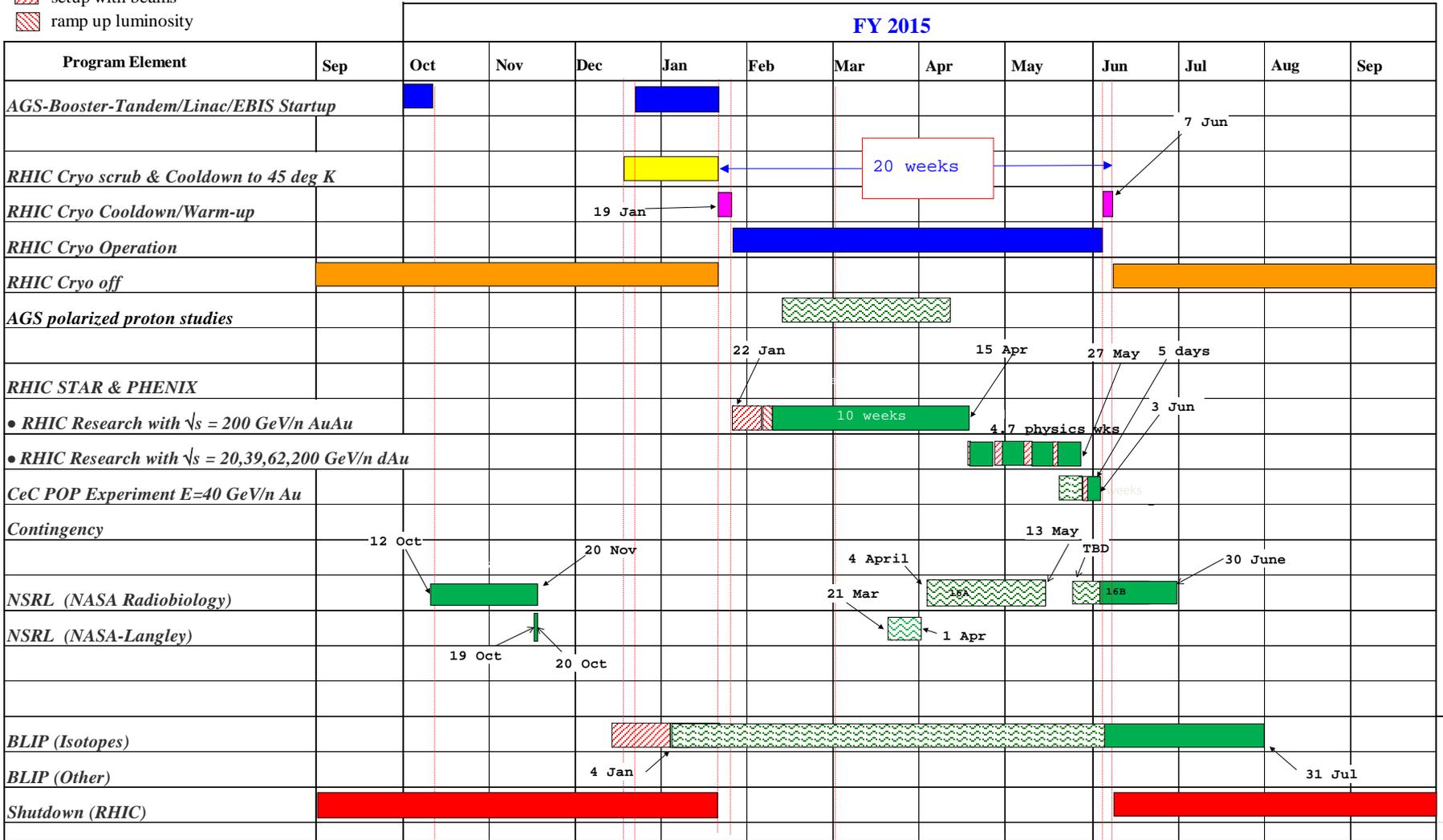
Note that there will be discussions on how the Blue Ring Diode issue and downtime impact the rest of the Run 16 Plan/Schedule after we are back up and running the AuAu program.

See <http://www.rhichome.bnl.gov/AP/RHIC2016/> for the Run Coordinator's detailed plan

C-A Operations-FY16

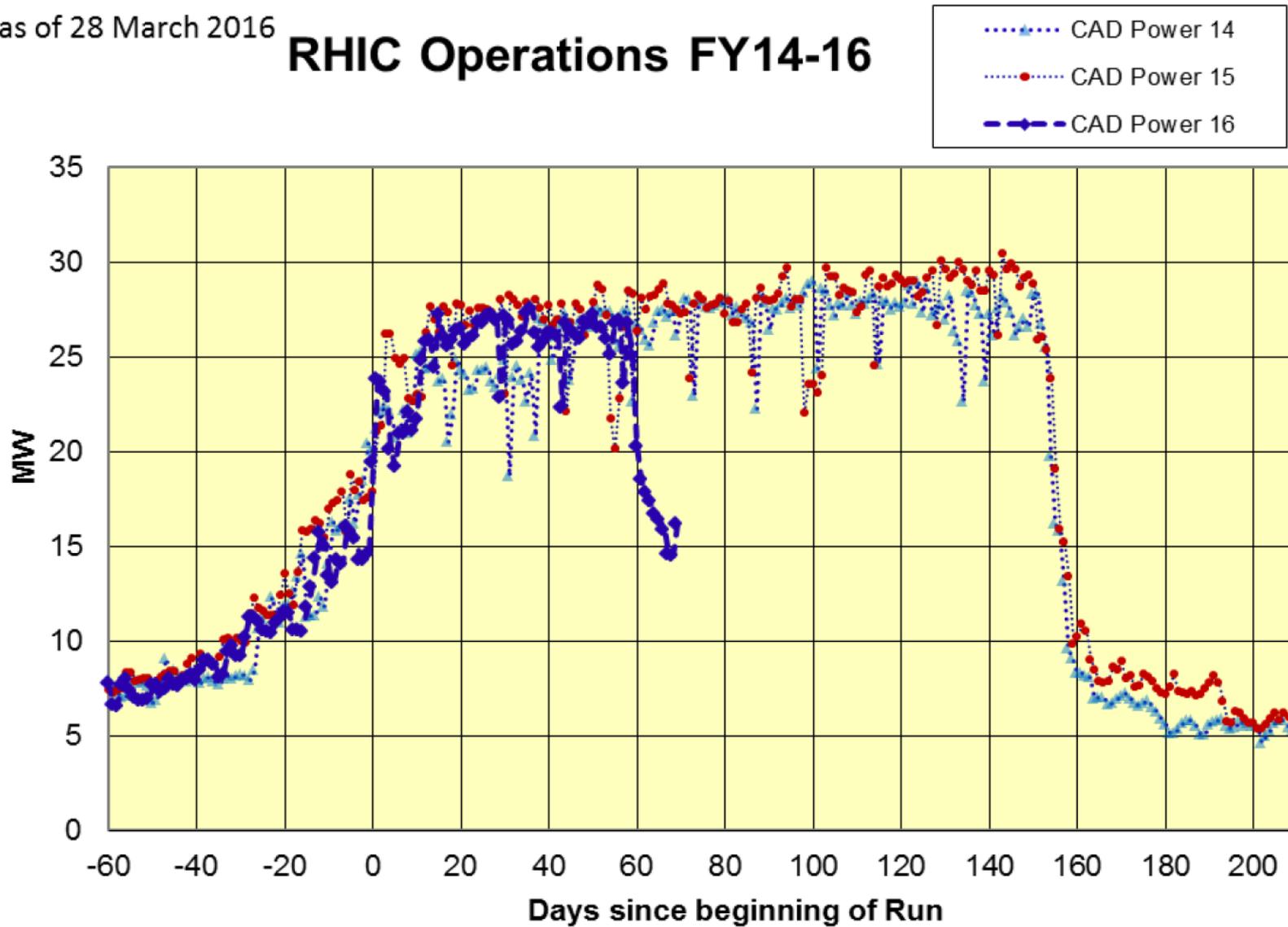
planned

-  concurrent with RHIC
-  setup with beams
-  ramp up luminosity

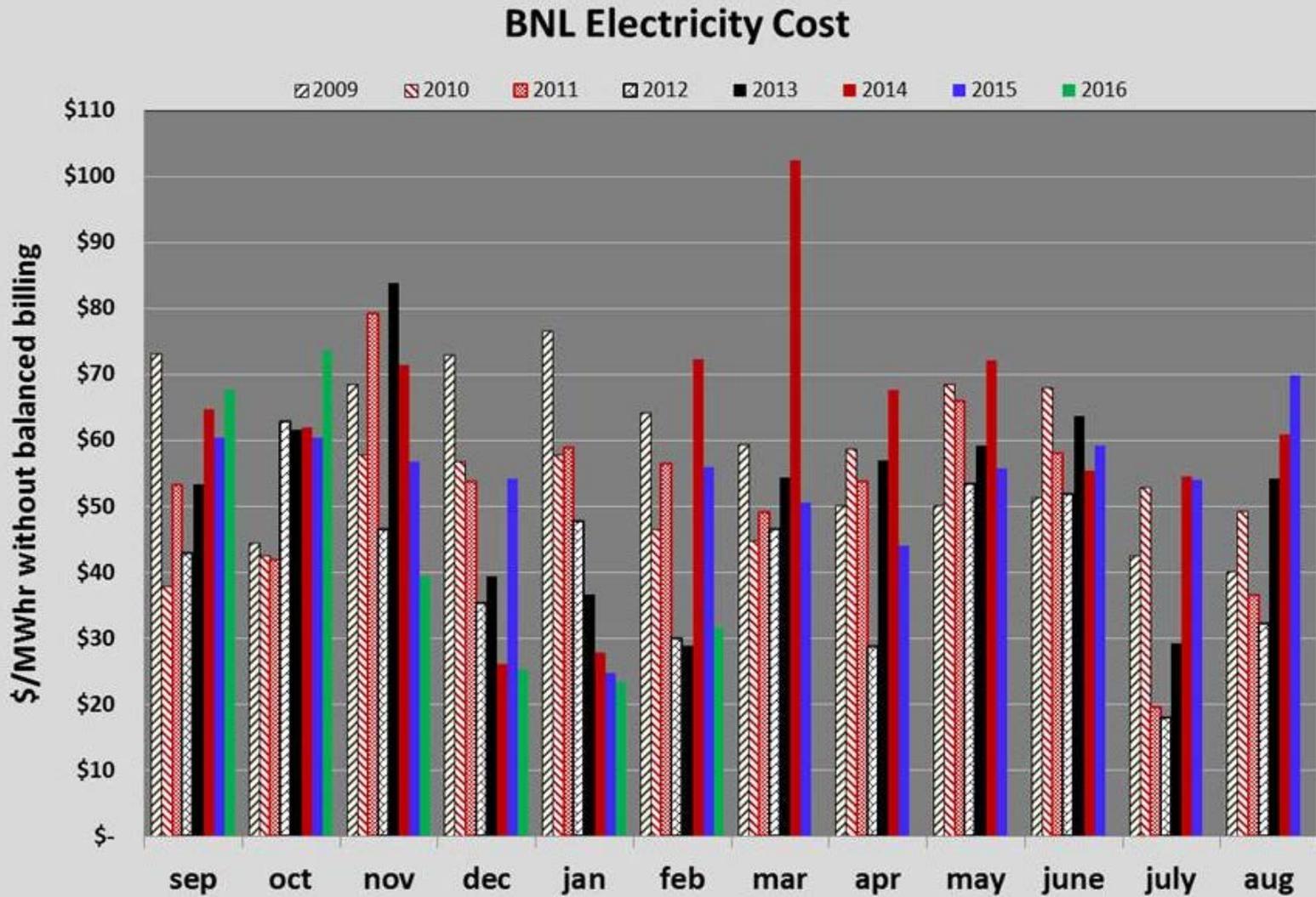


as of 28 March 2016

RHIC Operations FY14-16

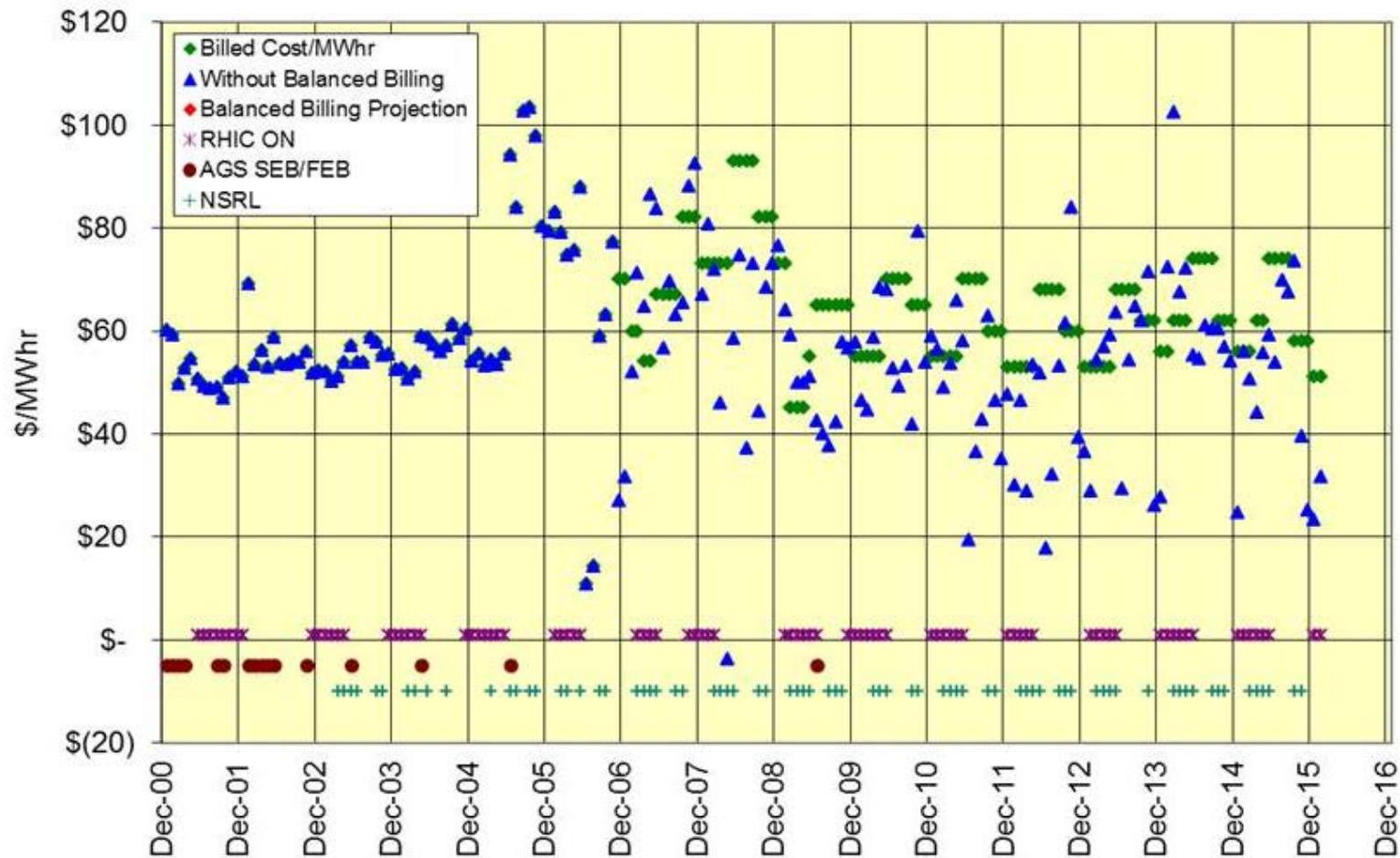


Power Cost through February 2016



BNL Energy Cost

thru Feb 2016



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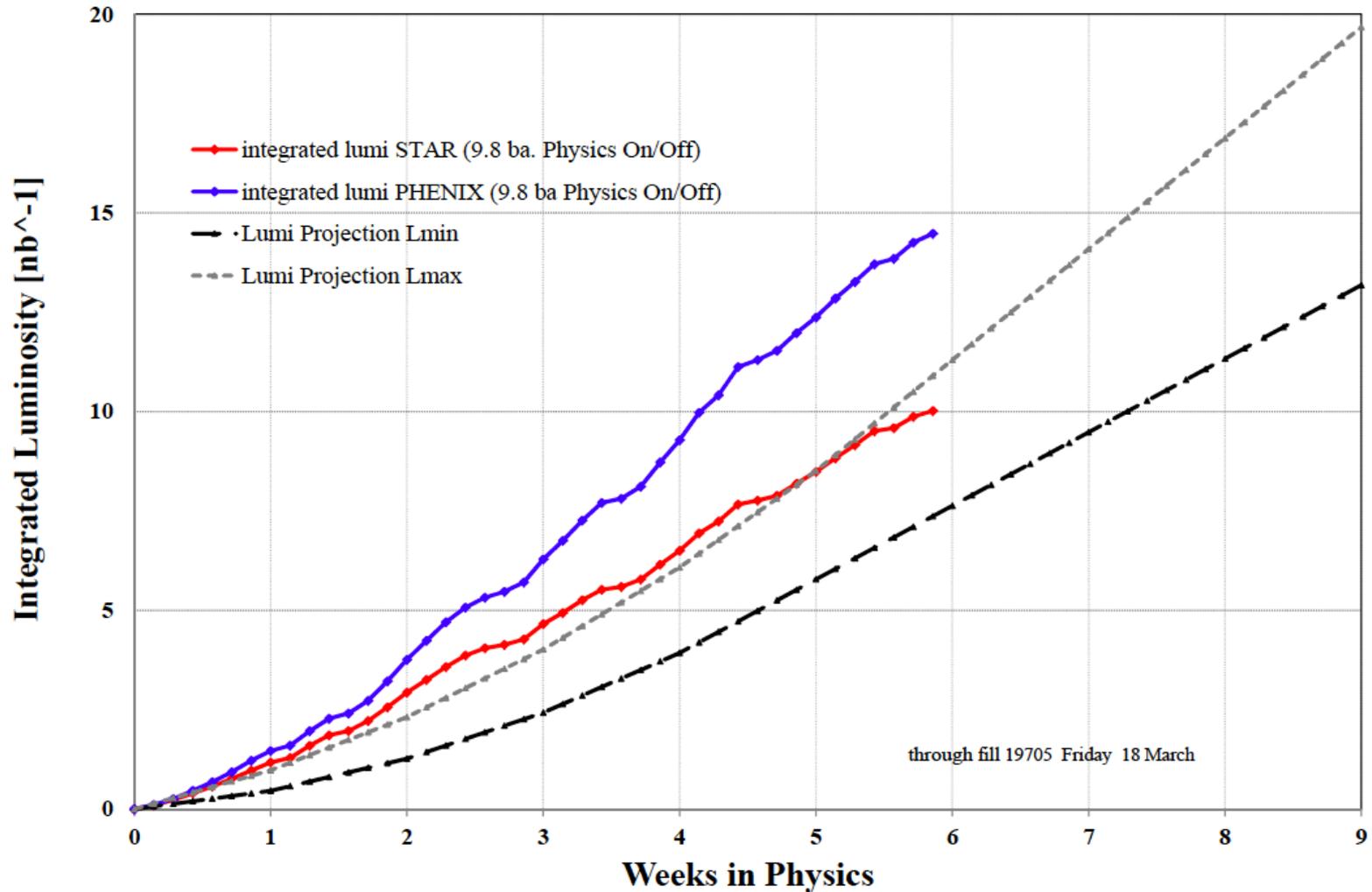
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AuAu Physics running lasted 5 4/7 wks before failure.

If Physics running resumes on April 6th, the 10 wks would end on May 7th

Run16 Delivered Luminosity

Au x Au $\sqrt{s} = 200$ GeV



Delivered Integrated Luminosity through last Physics Fill on Friday March 18th

SCHEDULE FOR WEEK FROM MONDAY March 15TH – SUNDAY MAR. 20TH

MONDAY:

- PHYSICS RUNNING

TUESDAY:

- PHYSICS RUNNING

WEDNESDAY:

- PHYSICS RUNNING UNTIL 7:45 AM
- SCHEDULED MAINTENANCE from 8 am to 4 pm
- RECOVER RHIC and PHYSICS RUNNING, 4 pm on

THURSDAY:

- PHYSICS RUNNING UNTIL 9:45 AM
- MACHINE DEV. From 10 am to 1 pm for Model Corrections
- MACHINE DEV. From 1 pm to 3 pm for 56 MHz
- PHYSICS RUNNING 3 PM ON

FRIDAY:

- PHYSICS RUNNING

SATURDAY AND SUNDAY:

- PHYSICS RUNNING

PHENIX goals: 10 weeks, 1.8 nb^{-1} with 12 billion MB events recorded within $|z| < 10 \text{ cm}$ vertex, request dynamic β^* squeeze.

STAR goals: 13 weeks 10 nb^{-1} sampled for MTD and 2 billion MB events recorded within $|z| < 6 \text{ cm}$ for HFT

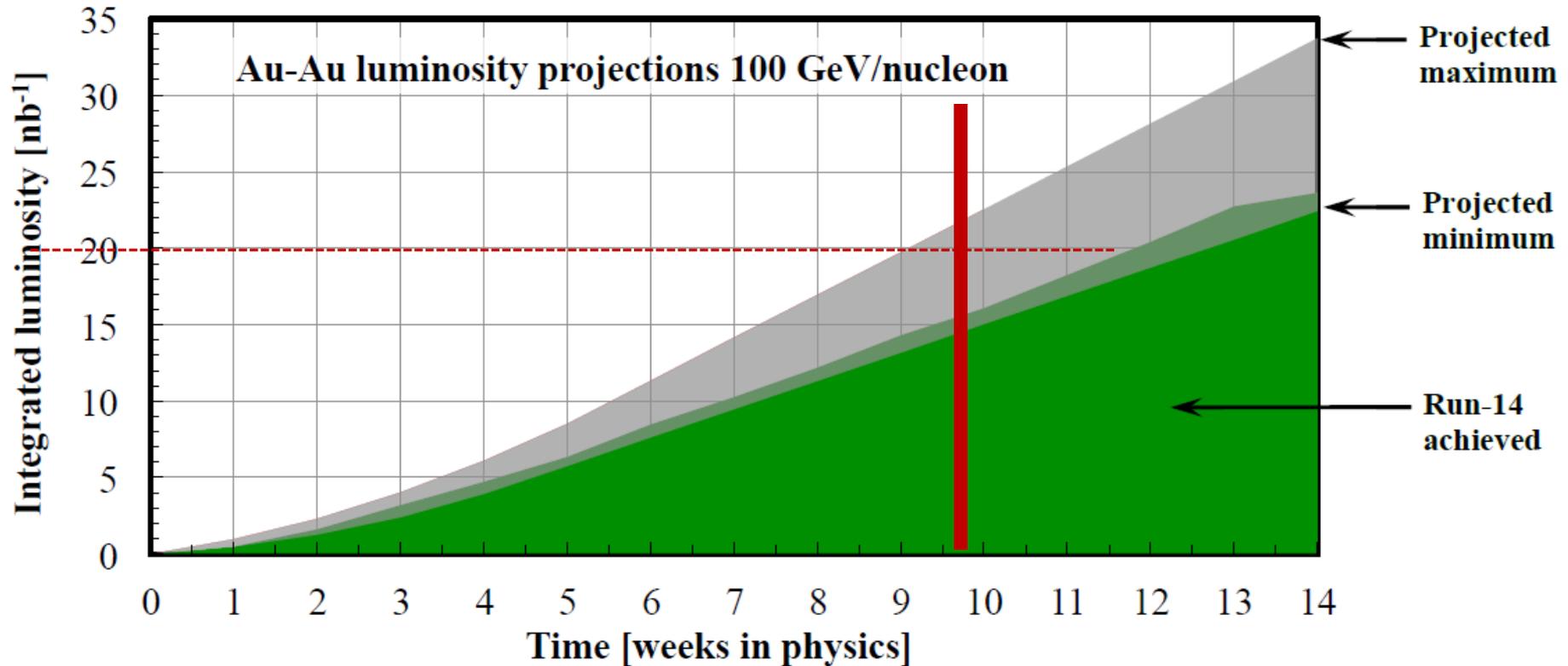
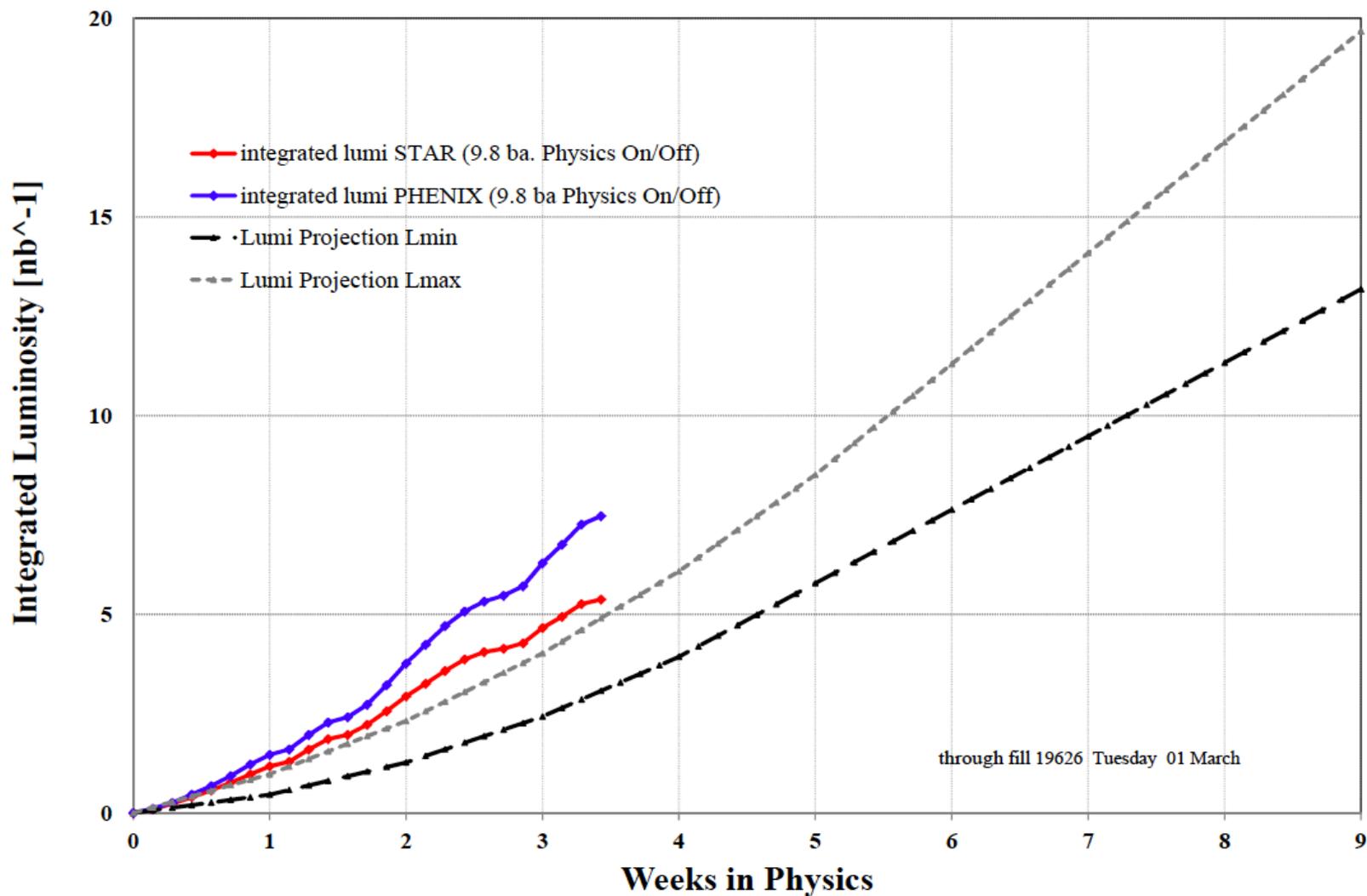


Figure 3: Projected minimum and maximum integrated luminosities for Au+Au collisions at 100 GeV/nucleon beam energy, assuming linear weekly luminosity ramp-up in 6 weeks.

From Fischer et. al., RHIC Collider Projections (FY 2016 – FY 2022), 19 April 2015

Run16 Delivered Luminosity

Au x Au $\sqrt{s} = 200$ GeV



SCHEDULE FOR WEEK FROM MONDAY FEB. 29TH – SUNDAY MAR. 6TH

MONDAY:

- PHYSICS RUNNING

TUESDAY:

- PHYSICS RUNNING until 10:50 am
- RHIC RING ACCESS FROM 11 AM TO 12:30 PM FOR CEC
 - PHENIX AND STAR ALSO GO INTO IRS
- PHYSICS RUNNING FROM 12:30 PM ON

WEDNESDAY:

- PHYSICS RUNNING UNTIL 7:45 AM
- SCHEDULED ACCESS 8 AM TO 4 PM
- 4 PM ON, PHYSICS RUNNING

THURSDAY:

- PHYSICS RUNNING UNTIL 9 AM
- BEAM DEV. 9 AM TO 7 PM (56 MHZ, XFER FTN. CORRECTION, S*, CEC APERATURE SCAN)
- PHYSICS RUNNING 7 PM ON

FRIDAY THROUGH WEEKEND:

- PHYSICS RUNNING

Who's Who for 2016

RHIC 100 x 100 GeV AuAu:

Run Coordinator: Xiaofeng Gu, xgu@bnl.gov, 631-344-5446 (office)

RHIC dAu Energy Scan:

Run Coordinator: Chuyu Liu, cliu1@bnl.gov, 631-344-4431 (office)

Scheduling Physicist: Bill Christie, christie@bnl.gov, 631-344-7137

Assistants through 29 Jan:

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Phil Pile, pile@bnl.gov, 631-344-4643 (office), 631-834-2005 (cell)

AGS Liaison:

Haixin Huang, huanghai@bnl.gov, 631-344-5446 (office)