

# RHIC Machine/Detector Planning Meeting

5 Jan 05

## Agenda

- **Schedule Issues – (Montag)**
- **General Remarks (Pile)**
- **Report from Accelerators (Pilat)**
- **Polarized Proton Update (Bai)**
- **Report from experiments (STAR,PHOBOS,PHENIX,BRAHMS)**
  - **When will experiment be ready make use of high luminosity?**
- **RCF Issues (Throwe)**
- **Other business**

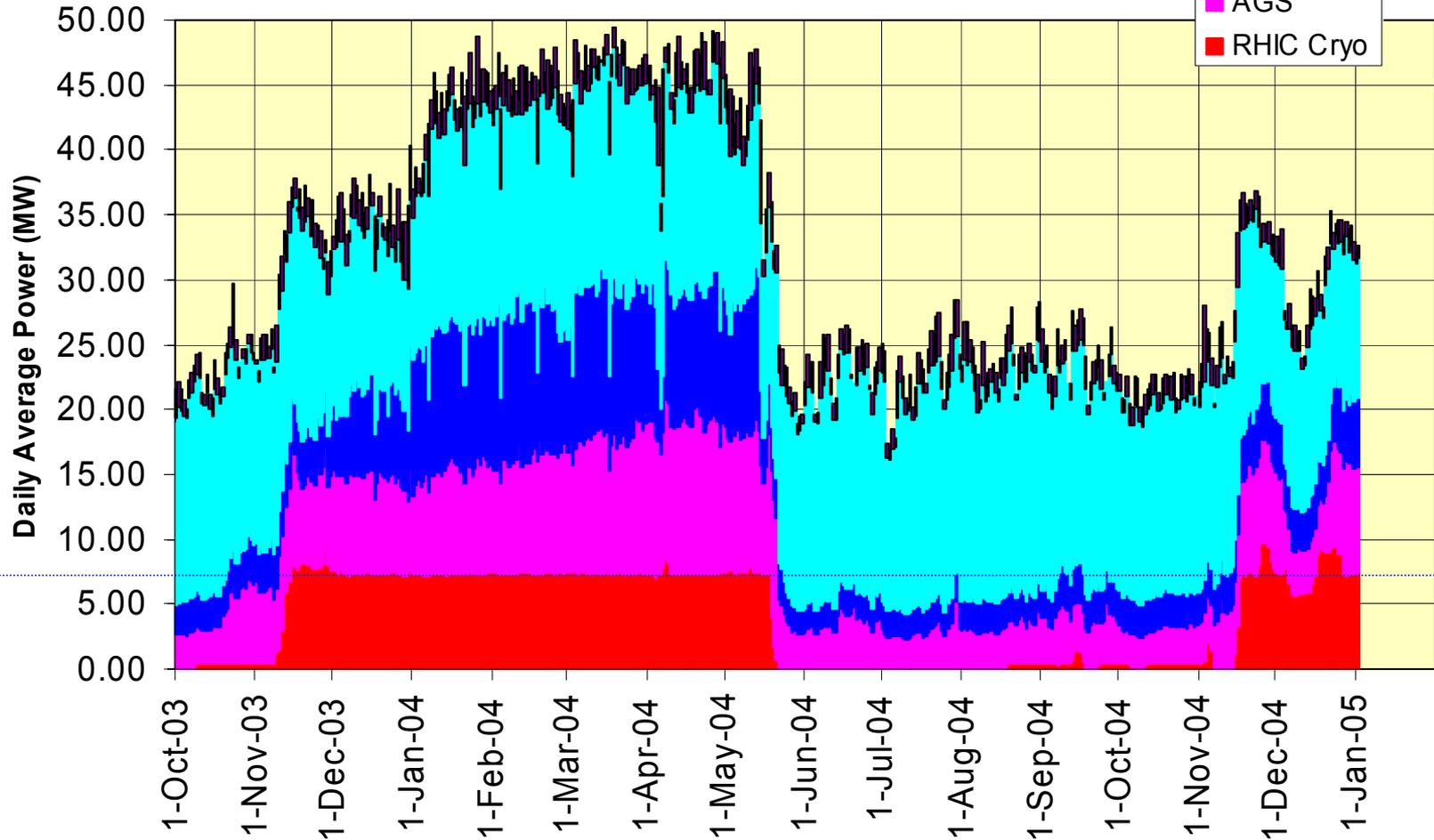
Planning Meeting Web Site: [http://server.c-ad.bnl.gov/esfd/RMEM/rhic\\_planning.htm](http://server.c-ad.bnl.gov/esfd/RMEM/rhic_planning.htm)

as of 2 Jan

# BNL Energy Use FY 2004-5

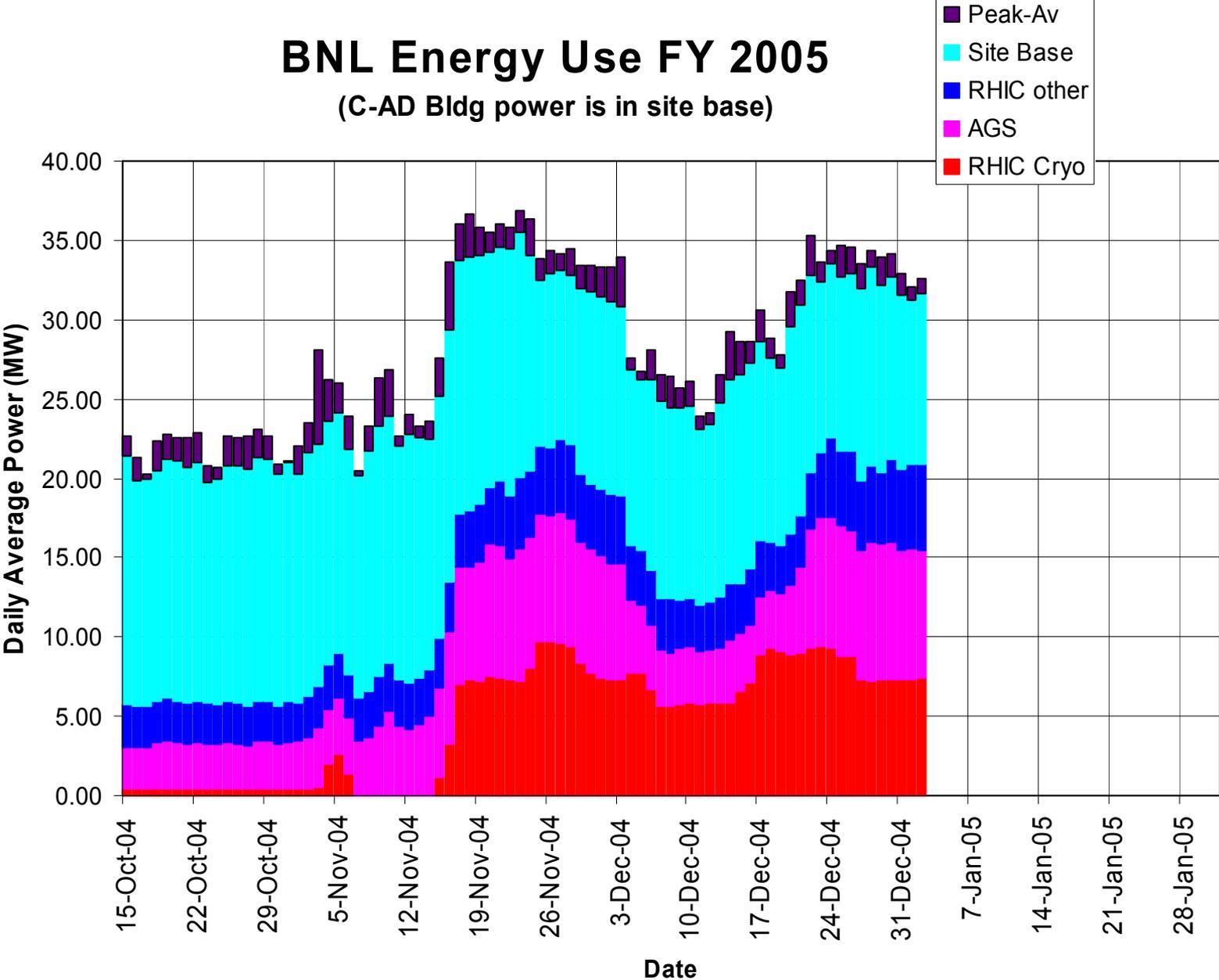
(C-AD Bldg power is in site base)

- Peak-Av
- Site Base
- RHIC other
- AGS
- RHIC Cryo



# BNL Energy Use FY 2005

(C-AD Bldg power is in site base)



## Translating the short fix time into lost running days...UPDATE

- Shutdown from 3 Dec-27 Dec (24 days) for short repairs
  - Energy use during this period, above the 5 MW RHIC/AGS base
  - 9162 MWhr (actual use) – (5 MW\*24 days\*24 hrs/day)=6282 MWhr
  - Cost:  $\$59.72/\text{MWhr} * 6282 \text{MWhr} = \$375\text{K} + \$35\text{K for lost helium} = \$410\text{K}$
- Full RHIC Program runs at ~23 MW above the 5 MW base –  
So cost for 24 days is:
  - $\$54/\text{MWhr} * 23 \text{MW} * 24 \text{hrs} * 24 \text{days} = \$715\text{K}$
  - Lost days =  $24 * 410 / 715 = 13.8$  days
- Our initial rough estimate of 1 day lost for every 2 shutdown days was about right.
- So we can add 10 days to a nominal 30 week run

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- **Details – as run/planned** (*based on DOE expectation of 30 cryo weeks*)
  - **18 Nov 04 – Cool down begins**
  - **23 Nov 04 – Blue Ring Cold**
  - **28 Nov 04 – Yellow Cold**
  - **29 Nov 04 – Short in D6-D8 dipoles Yellow Ring, schedule delay**
  - **3 Dec 04 – quad bus-bus short in sector 12, shutdown to repair**
  - **27 Dec 04 – short problem resolved, rings at 4 degrees again**
  - **27 Dec 04 - “2 week” RHIC setup with beam began**
  - **28-29 Dec 04 – found & fixed aperture problem in Yellow Ring (piece of Al foil)**
  - **5 Jan 05 – “2 week” ramp-up with colliding beams begins**
  - **19 Jan 05 – 9 week physics with Cu-Cu begins** (*actual # of weeks TBD*)
  - **23 Mar 05 – End of 9 week Cu-Cu run**
  - **23 Mar 05 – begin 3 week pp setup**
  - **13 Apr 05 – Begin 9.6 week pp Physics run**
  - **15 Jun 05 – BNL Power Curtailment Program begins?**
  - **19 Jun 05 – end 9.6 week pp run, RHIC Run 5 ends**
  - **26 Jun 05 – Cryo switch to LN<sub>2</sub> complete, 30 effective (31.4 actual) weeks of RHIC cryo operation ends**

*We'll develop an actual plan once we get a budget from DOE!*

# **RHIC Machine/Detector Planning Meeting**

**Archive**

# RHIC Machine/Detector Planning Meeting

17 November 2004

## Purpose of this meeting:

- To address issues and priorities relating to the optimization of physics output from RHIC experiments.
- To discuss and promulgate policy (when needed).

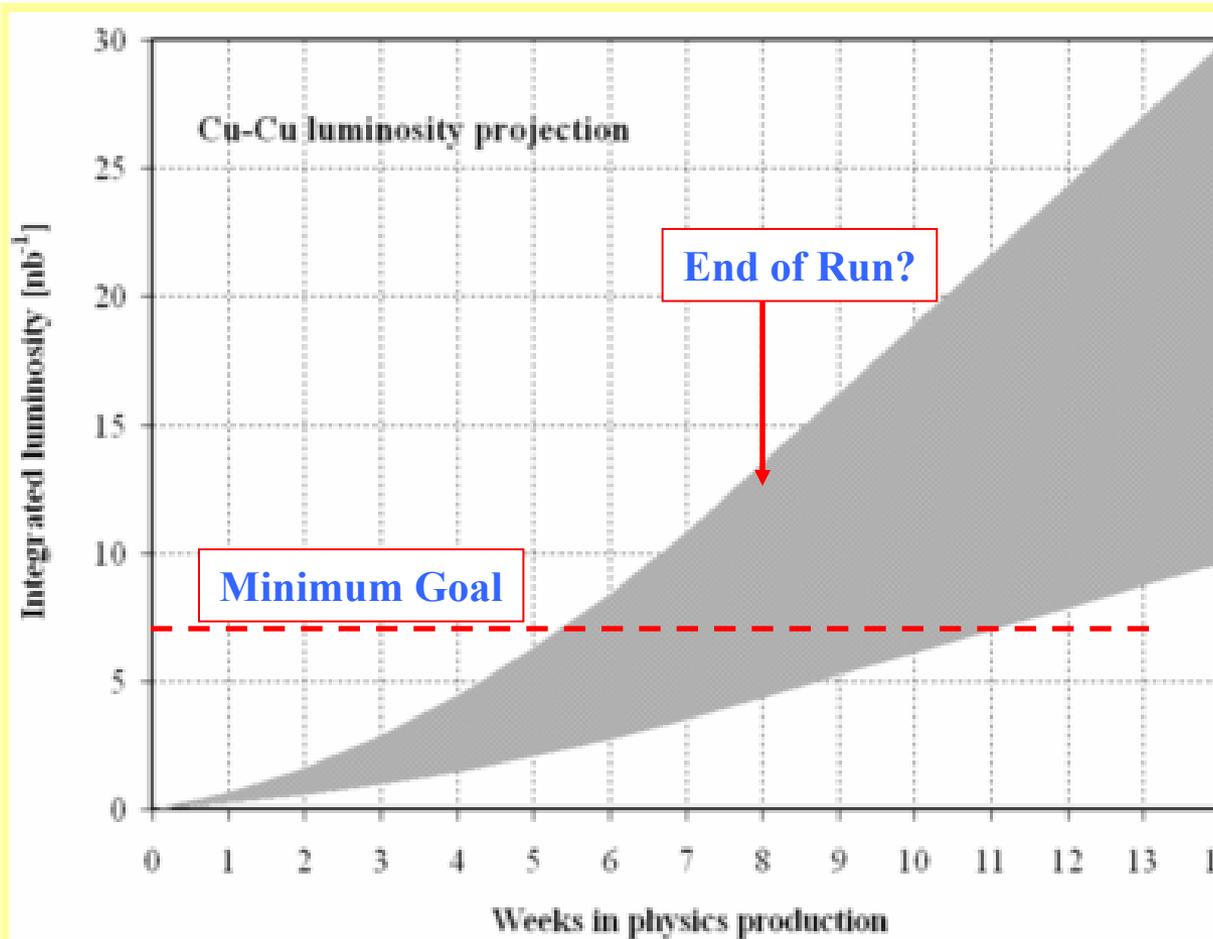
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## PAC Recommendations (very short summary):

- 8-10 week pp run should have highest priority
- Cu-Cu run should accumulate an integrated delivered luminosity of at least  $7 \text{ nb}^{-1}$  at  $\sqrt{s} = 200 \text{ GeV}$
- Cu-Cu at  $\sqrt{s} = 62.4 \text{ GeV}$  and 1 day at injection is advisable if above goals are met
- 1-2 day pp (unpolarized) run at  $\sqrt{s} = 400\text{-}500 \text{ GeV}$  desirable

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Projections based on the following beam intensity:

Minimum :  
 $45 * 2.9 * 10^9$

Maximum:  
 $28 * 6.6 * 10^9$

Luminosity evolution:  
**8 weeks ramp-up** during physics production

$\beta^* = 1$  meter