



... for a brighter future

APS/Users Operations Monthly Meeting

J. Murray Gibson

June 17, 2009



U.S. Department
of Energy

UChicago ►
Argonne_{LLC}



A U.S. Department of Energy laboratory
managed by UChicago Argonne, LLC

Agenda

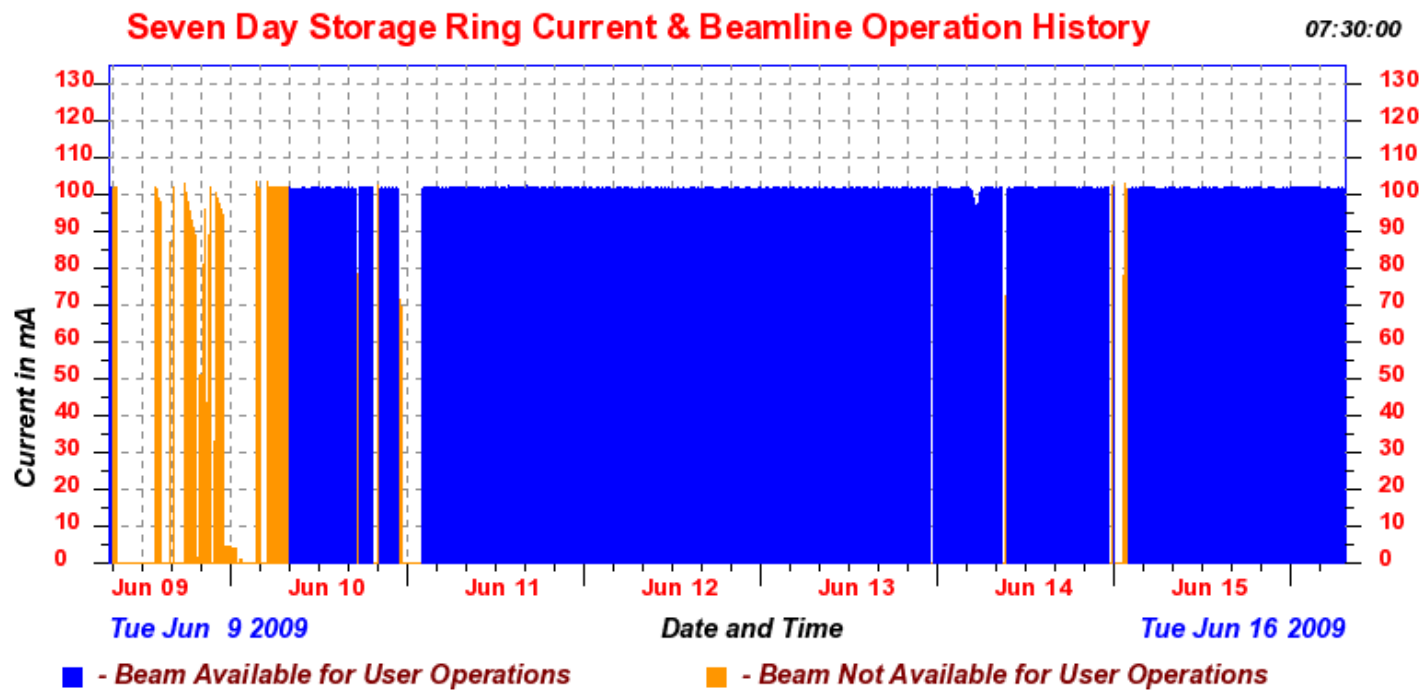
- 2:30 p.m. Refreshments
- 2:45 p.m. APS Update – Murray Gibson
- 3:05 p.m. Progress Report for the 9-BM Catalysis Station – Steve Heald
- 3:25 p.m. ANL Acquires ISO 9000 and 14000 Certification via LMS - Bill Ruzicka
- 3:45 p.m. Adjourn

ANL HSS Review - Initial Results

- Results were generally favorable
 - Acknowledged progress made in areas of concern from 2005 review
 - Agreed with basic structure of new work planning and control processes
- Will suggest improvements for specific items based on experience with reviewing rest of DOE complex
- Specific items with anticipated recommendations are:
 - Experimental work planning and control (forms and training)
 - Skill of Researcher and Skill of Worker Processes
 - Management Assessment expectations and guidance
 - Additional follow up to confirm completion of items in iCatch
 - Developing additional technical basis documents for HP procedures and instrumentation
 - Use of Radiation Work Permits and better integration of such permits into work planning and control
 - Applying project management techniques to new processes (LMS)

Reliability problems

- Run 2009-02 (as of 7 a.m. Tuesday)
 - 431 hours op, availability 94.7%, MTBF 34 hours
 - 12, mostly RF, faults



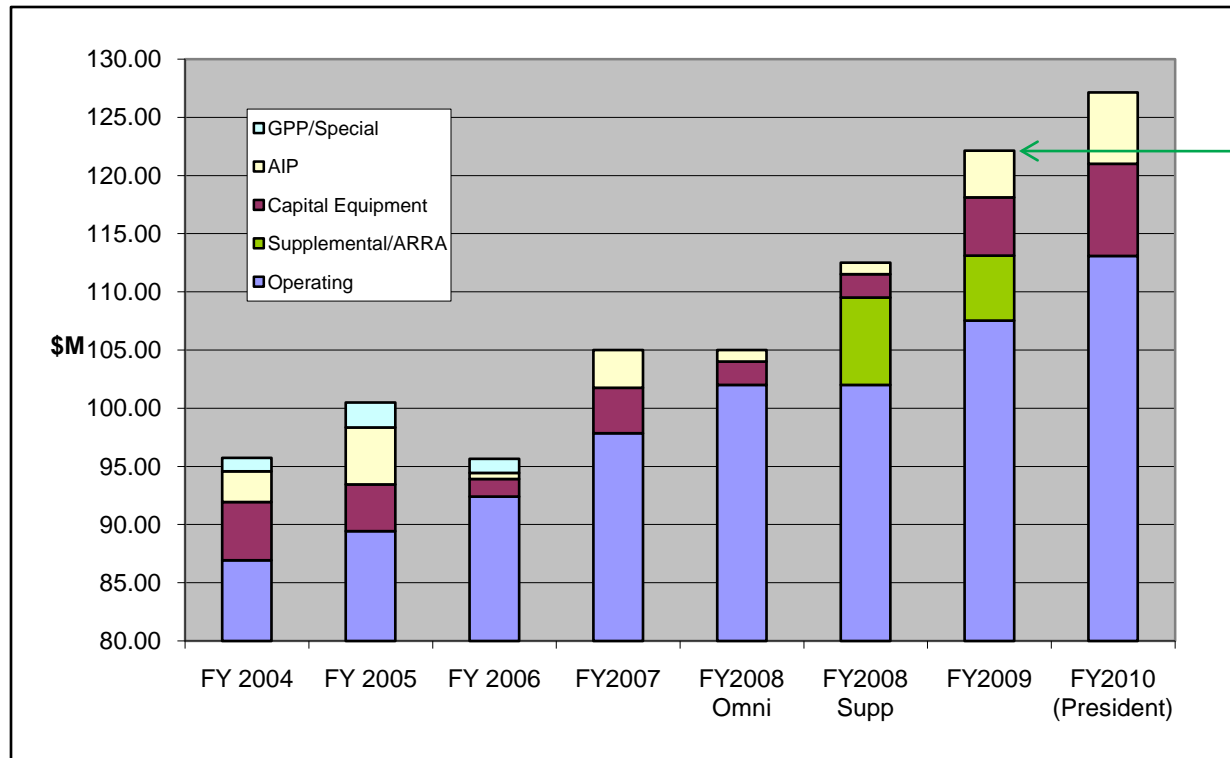
Booster and Storage Ring RF Systems Problems: Run 2009-02

- May 19th - RF2 klystron developed output power instability
 - *Klystron aging and barium deposition in the gun*
- May 25th and 26th - RF2 waveguide circulator load arc
 - *High humidity in SR tunnel*
- May 26th - RF4 multiple trips on T-R (transformer/rectifier) set oil level interlock
 - *Catastrophic failure of all filter back capacitors inside the oil tank*
 - Possible capacitor manufacturer QA issue
- May 28th - Intermittent loss of mode-anode voltage at RF1
 - *Mode-anode regulator high-voltage electronic component failure*
 - Electronic components aging
- May 30th – loss of mode-anode voltage regulation at RF5
 - *Mode-anode regulator high-voltage electronic component failure*
 - Electronic components aging
- May 30th – Intermittent drift in cathode output voltage at RF1
 - *Intermittent connection to SCR regulator card*
- June 6th – loss of mode-anode voltage regulation at RF4
 - *Cracked resistors in mode-anode regulator electronics inside oil tank*
 - Components aging
- June 6th, June 13th and 14th – Multiple RF2 crowbar events
 - *Klystron gun and power supply high –voltage breakdown*
 - Klystron aging

RF Downtime Statistics

- Run 2008-1: 1.5%
 - Major contributor: booster cavity # rf power coupler failure
- Run 2008-2: 0.23%
- Run 2008-3: 0.99%
 - RF5 mode-anode regulator and 13.2kV fused disconnect switch failure
 - 200 kW rf load failure
- Run 2009-1: 0.23%
- Run 2009-2 to date: 3.2%
 - RF4 capacitors bank failure
 - RF2 circulator load arcs and crowbar trips
 - RF1 cathode voltage and mod-anode regulation problems
 - RF5 mode-anode voltage regulator failure

Blame it on bad budgets (thankfully) of the past

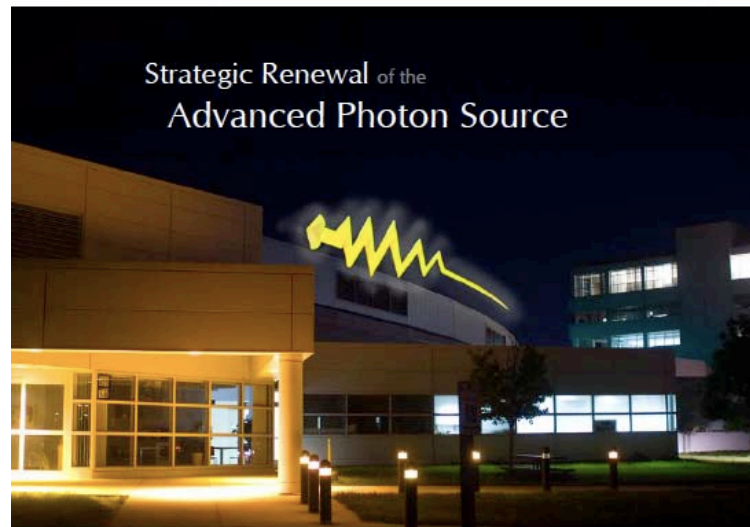


\$122.1M

GOOD NEWS! ARRA funds of \$5.6M: \$2M for detectors in XOR; \$3.6M for FEs and IDs

Concerns about pressure in congress on the 2010 budget – advocacy for Office of Science will be very important

APS CD-0 proposal submitted to DOE 5/31/2009



Proposal for approval
of Conceptual Design (CD-0)

Submitted to the US Department of Energy
Office of Basic Energy Sciences
May 31, 2009

Until its been reviewed by DOE, we will not distribute widely. GLs and PUC executive should have copies and can distribute paper copies.

UChicago Argonne, LLC Board of Governors Awards



Rodney E. Gerig (PSC): co-recipient (w/Mike Pellin, MSD) Argonne National Laboratory Director's Award for Outstanding Safety Leadership

Janet B. Anderson (AES): Outstanding Service Award



Ian McNulty (XSD): Distinguished Performance Award



Joseph Arko (XSD): Outstanding Service Award



Christopher Davey (son of Steve Davey AES): 2009 University of Chicago Scholarship

Deborah E. Reeder Quock (AES): Pinnacle of Education Award



FMS Advanced Photon Source Maintenance Mechanics: 2009 Argonne National Laboratory Director's Team Award for Outstanding Safety Performance

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