

APS/Users Monthly Operations Meeting

Brian Stephenson

June 26, 2013

Agenda

- APS Update – Brian Stephenson
 - Pacesetter Awards
- APS Upgrade Update – George Srajer
- Beamline Optics Performance at 150 mA:
Lessons Learned from the April High Current Studies –
Gary Navrotski



Safety Update - Stepper Motor Driver Units

- Problem identified: AC-powered stepper motor units designed for true earth ground while APS 120 VAC distribution has ground-bonded to neutral
- Solutions for beamline use:
 - Replace AC-powered units with DC-powered units & provide new DC power source
 - Provide isolation transformers on the AC input to the units
- Several models and manufacturer isolation transformers are being tested to ensure suitability for beamline use
- Isolation transformers are available in a variety of sizes with costs ranging from \$150-\$650 each dependent upon size & type
- Will provide additional information by next users meeting

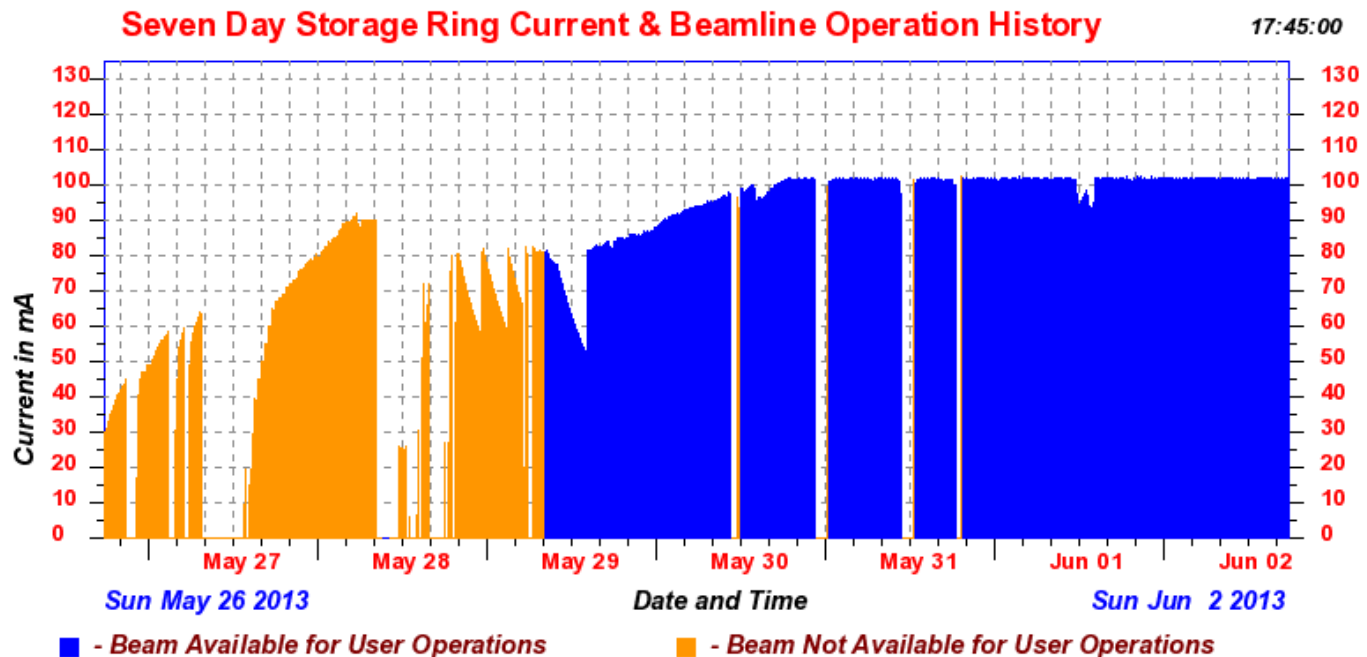


Additional Electrical Safety Issue

- Electrical protective gloves sent out for inspection; have a 20% failure rate on visual inspection only
- Concern this may also apply to in-use gloves
- Wear leather outer protectors when using
- Inspect gloves before each use:
 - Visually inspect rubber gloves for abrasions, punctures, or discoloration
 - Perform an air test to assure there are no leaks
 - Test the gloves' elasticity to assure they are not aged and brittle
- **If any of these tests result in a failure, immediately inform a supervisor and dispose of the gloves immediately. They must not be used. Do not return to building 200 holding area.**

Difficult Accelerator Startup After May Shutdown

- Poor vacuum in two RF cavities
 - Led to replacement of many components (couplers, etc.)
- Also found problems with RF heating of a new scraper assembly, and with power supply for booster extraction septum
- Fixing these issues took time away from normal conditioning of accelerator prior to user operations



Difficult Accelerator Startup After May Shutdown

- After lots of hard work including over holiday weekend, beam was delivered on time.
- Four beam faults during user operation due to RF conditioning.
- Lowered current to 90 mA, and recovered without further faults by June 5.



LN2 Problem Notification

On Monday, June 17, several beamlines had to be shutdown due to low LN2 pressure and ice contamination.

History of Events

- Sunday, June 16, 2013, Airgas failed to make the Sunday morning delivery of LN2 to tank 35 (module C, Sector 18-26). Failed delivery due to truck brake down enroute to Argonne.
- Sunday, June 16, 2013, 9:30 pm – Tank 35 ran low and MCR opened the C-D interconnect valve and closed the C supply valve.
- At approximately 11:30 pm tank filled by Airgas.
- Monday, June 17, 2013, several beamlines, 19, 21, 24 and 26 all experienced low pressure in their LN2 systems and potential ice contamination which could clog control components.



Mitigation Strategies Under Consideration to Prevent Future Recurrences:

- Check the procedures for dealing with LN2 events, and ensure that there are appropriate provisions for notifying the beamlines (email PV status) of low level, low pressure, supply valves opening and closing, interconnect valves opening and closing, and other pertinent information.
- Reinstall sub coolers on the modules. This will improve the delivery of liquid N2 to the point of use. Currently volumes of gaseous N2 seem to be introduced into the system during events like these. Once a sector's supply lines are filled with gas they take a lot of time and effort to purge the gas from the systems. (Secondary point of use pressure regulators compound the problem by further slowing the gas purge process.)
- Install much larger (3 to 7 times the current capacity) storage dewars at each of the 4 sections of the Liquid Nitrogen Distribution System (LNDS). They will be much less vulnerable to problems cause by service failure by the LN2 supplier.
- Install pressure stabilization units to ensure that the tanks will return normal pressure more reliably.

Re-planning our FY13, FY14 operations budget

History and projection from Budget Review

	FY11	FY12	FY13	FY14
Carry in	\$23.2M	\$25.6M	\$25.0M	\$17.5M
Funding	\$129.7M	\$124.3M	\$123.0M	\$135.0M
Spending	\$125.7M	\$124.9M	\$130.5M	\$140.6M
FTEs	467	439	456	486
Carry out	\$25.6M	\$25.0M	\$17.5M	\$11.9M

Potential outcome of June 2013 re-plan

	FY11	FY12	FY13	FY14
Carry in	\$23.2M	\$25.6M	\$25.0M	\$17.0M
Funding	\$129.7M	\$124.3M	\$120.0M	\$128.0M
Spending	\$125.7M	\$124.9M	\$128.0M	\$134.0M
FTEs	467	439	450	470
Carry out	\$25.6M	\$25.0M	\$17.0M	\$11.0M



Draft APS Data Policy Statement

The Advanced Photon Source (APS) is committed to providing our users with their data in a timely and convenient fashion. Users of the APS, however, are responsible for meeting their Data Management obligations to their home institutions and funding agencies. The APS does not provide any long-term data archiving or management service. Once data have been provided to each APS experimental group, the user is responsible for managing the long-term retention his/her data, and should not rely on the APS for this service.

Followed by list of minimum data retention periods, beamline by beamline; these vary from 3 months to 2 years, depending upon type of data (e.g. images, point detector scans).



Opportunity for NIH-funded detector

The GM/CA protein crystallography beamlines would like to submit a grant application to NIH for a state-of-the-art \$2.4M pixel array detector, which will improve speed and sensitivity and allow users to study a broader class of high-impact protein complexes.

The funding call (High End Shared Instrumentation Grant, S10) will not pay overhead on the procurement of the detector, while Argonne policy requires overhead (~\$55K) to be paid.

GM/CA can make their current detector (MAR 300) available to all users through our Detector Pool program; in return, we would like to use APS operations funding to pay the overhead cost on the new detector.

NUFO Activities



- House Science & National Labs Caucus invites NUFO to Capitol Hill (June 26 in the Rayburn Office Building)
- 2013 NUFO Exhibition for the U.S. House of Representatives (also June 26, also in the Rayburn Bldg.; APS users are there as well staffing the demos)

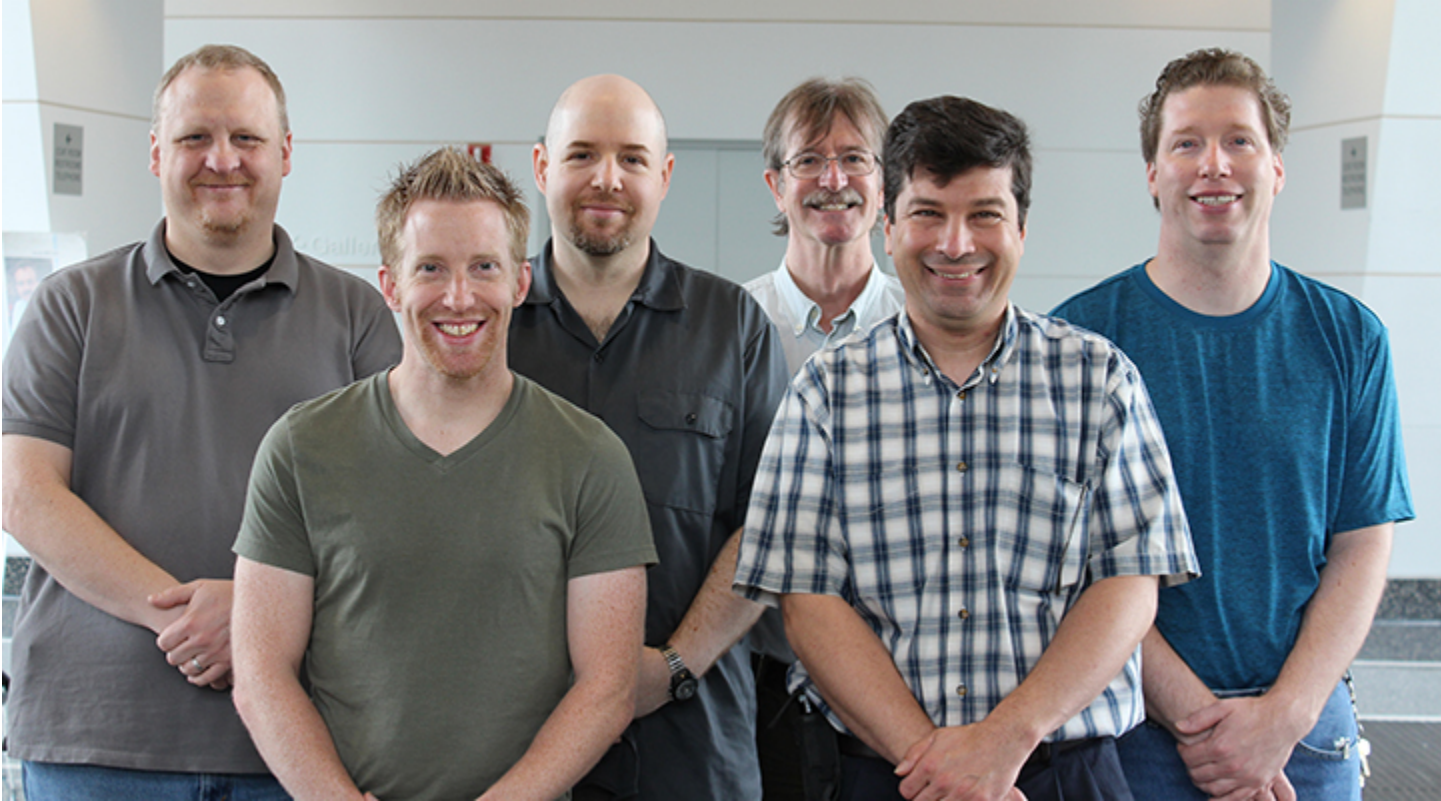


Pacesetter: John TerHAAR and Joseph Gagliano III (ASD)



Through extraordinary effort in building, aligning, wiring and testing of revolver undulator prototypes, John and Joe enabled successful demonstration of a critical part of the APS upgrade. The work was completed safely and precisely, while meeting a demanding schedule. They took personal initiative in planning and executing the work, and in communicating the status as the work progressed.

Pacesetter: Ryan Brody, Jon Smejkal, Steve Potempa, Dave Cyl, Brian Pruitt, and Darryl Reigle (AES)



Extraordinary effort in providing highly professional IT support to reviewers, speakers and observers during the DOE CD-2 Lehman Review of the APS Upgrade Project.

Pacesetter: Mark Martens, Ed Theres and Steve Downey (AES)



Extraordinary effort in meeting the goal of clearing out stored items in LOM 437 to facilitate the start of construction activity in the area.