

APS/Users Monthly Operations Meeting

G. Brian Stephenson

Jun 27, 2012

Agenda

- 2:30 p.m. Refreshments
- 2:45 p.m. APS Update – Brian Stephenson
- 3:05 p.m. APS Upgrade Update – George Srajer
- 3:25 p.m. DND 20th Anniversary – Denis Keane
- 3:45 p.m. Adjourn

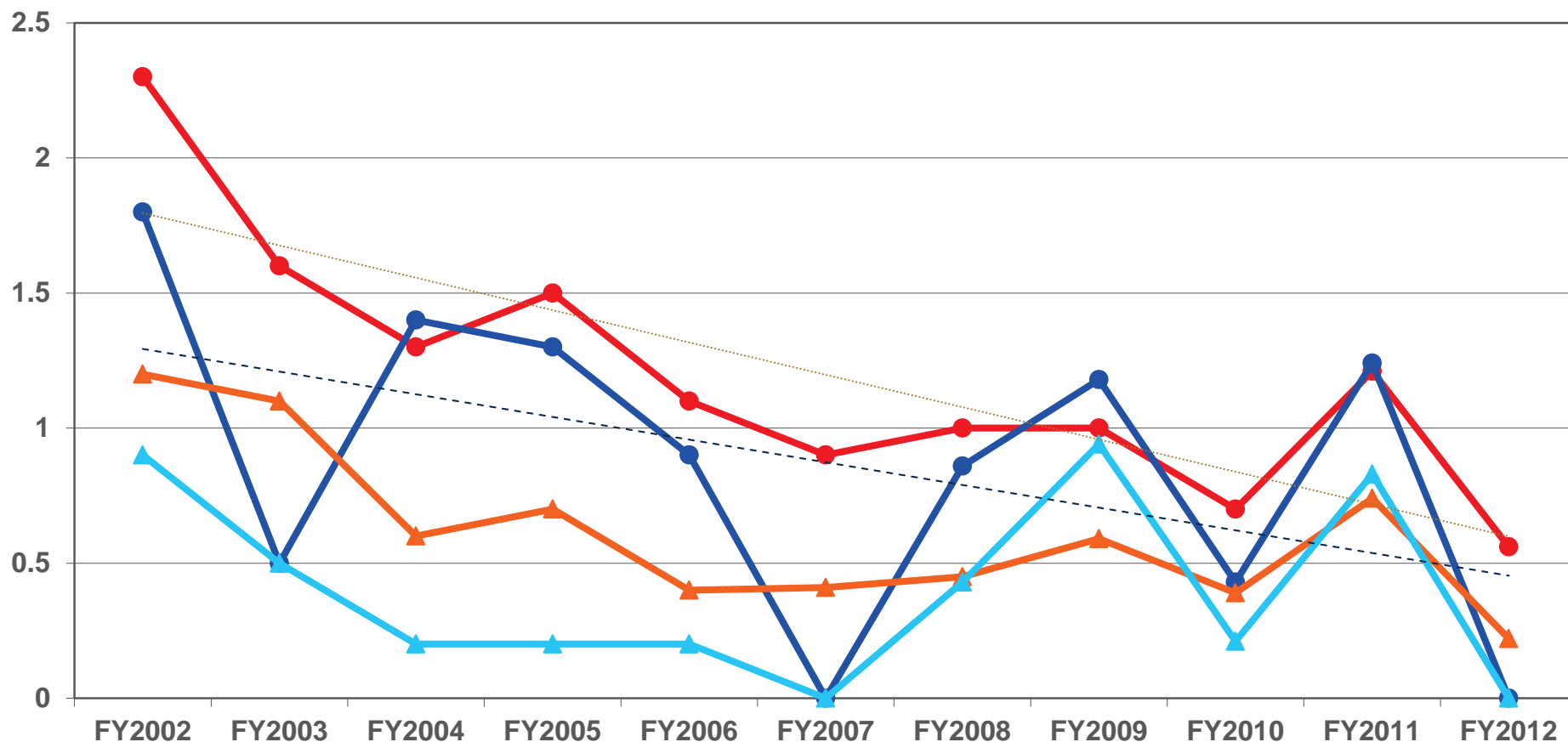


APS Update

- Safety
- Operations
- Upcoming Reviews – UofC July, SAC October
- Construction Updates: 400A, APCF
- Vibrations Task Force

APS Has Been Doing Well on Injury Rates

Data as of May 31



TRC = Total OSHA Recordable Case Rate per 200,000 Hours Worked

DART = Days Away, Restricted Duty, or Job Transfer Case Rate per 200,000 Hours Worked

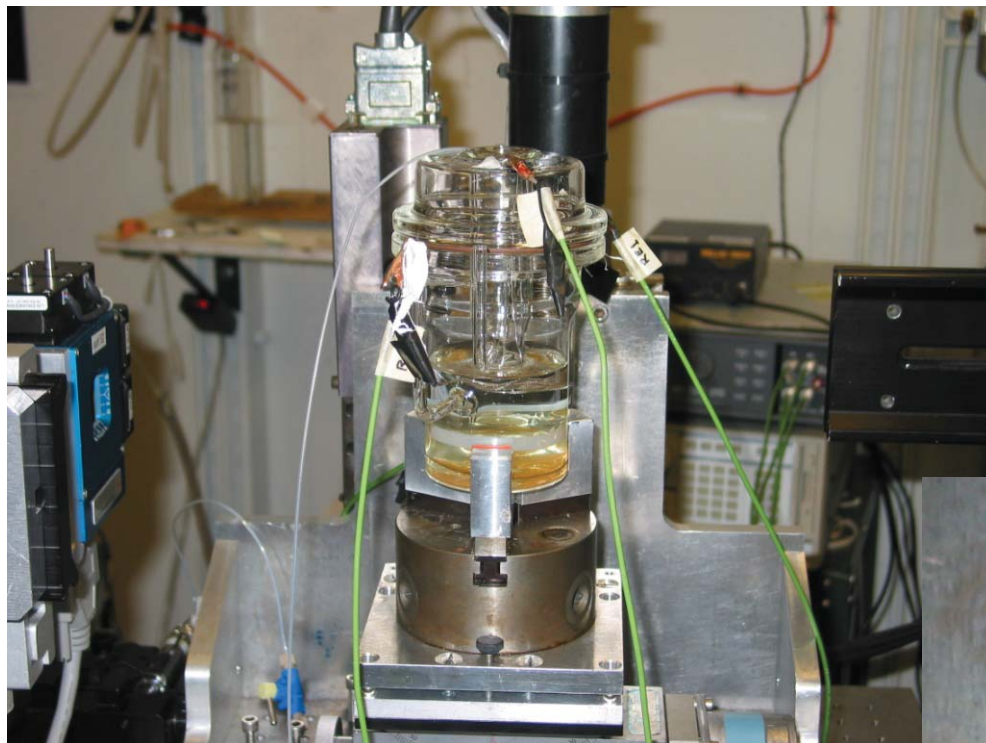
FY2002-4 APS Divs. FY2005-8 SUF (APS Divs.+ IPNS) FY2009-12 PSC (APS Divs. Only)



Recent Safety Incidents

- Monday Argonne filed a management concern ORPS due to 3 recent minor chemical exposures:
 - An experienced ESQ staff member moved an old plastic bottle from a shelf and it disintegrated. It contained dilute HF and he did not have gloves on so was potentially exposed to HF. He called 911. No injury or symptoms of HF exposure. Potential issues include safe handling and storage, appropriate PPE necessary and periodicity for bottle replacement.
 - An APS UofC post-doc user went into a hutch with the PI to troubleshoot an experiment. A small Teflon tube popped off a closed valve and the user was sprayed in one eye with approximately 50 microliters of 1,2 dichloroethane. She used an eyewash station to wash out her eye, but waited until the next morning to notify beamline staff. She was taken to an ER for examination; there was no lasting injury to her eye and she was returned to work same day. Potential issues include the requirement for additional PPE when conducting trouble shooting in response to an unexpected event.
 - A post doc filling a reagent squeeze bottle with methanol spilled approximately one liter on his pants/leg. He reported to medical but did not call 911 or report the spill to his supervisor. He was examined and sent to an ER for examination and observation. He showed no negative symptoms and was returned to work. Potential issues include appropriate precautions when handling chemicals, appropriate notifications for spills and review of training provided to post docs.
- Yesterday we had another minor chemical eye-splash incident at APS

First Eye-Splash Incident

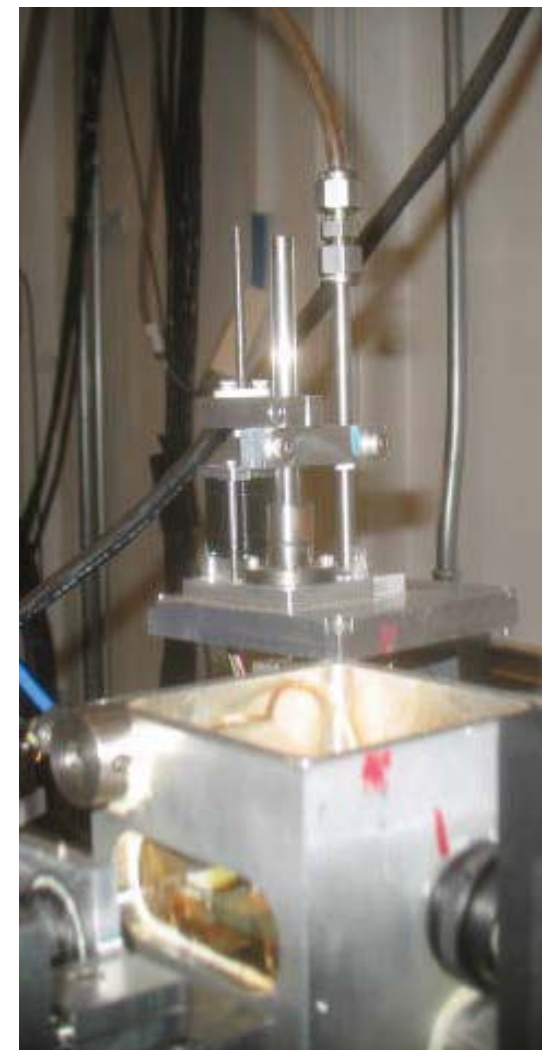
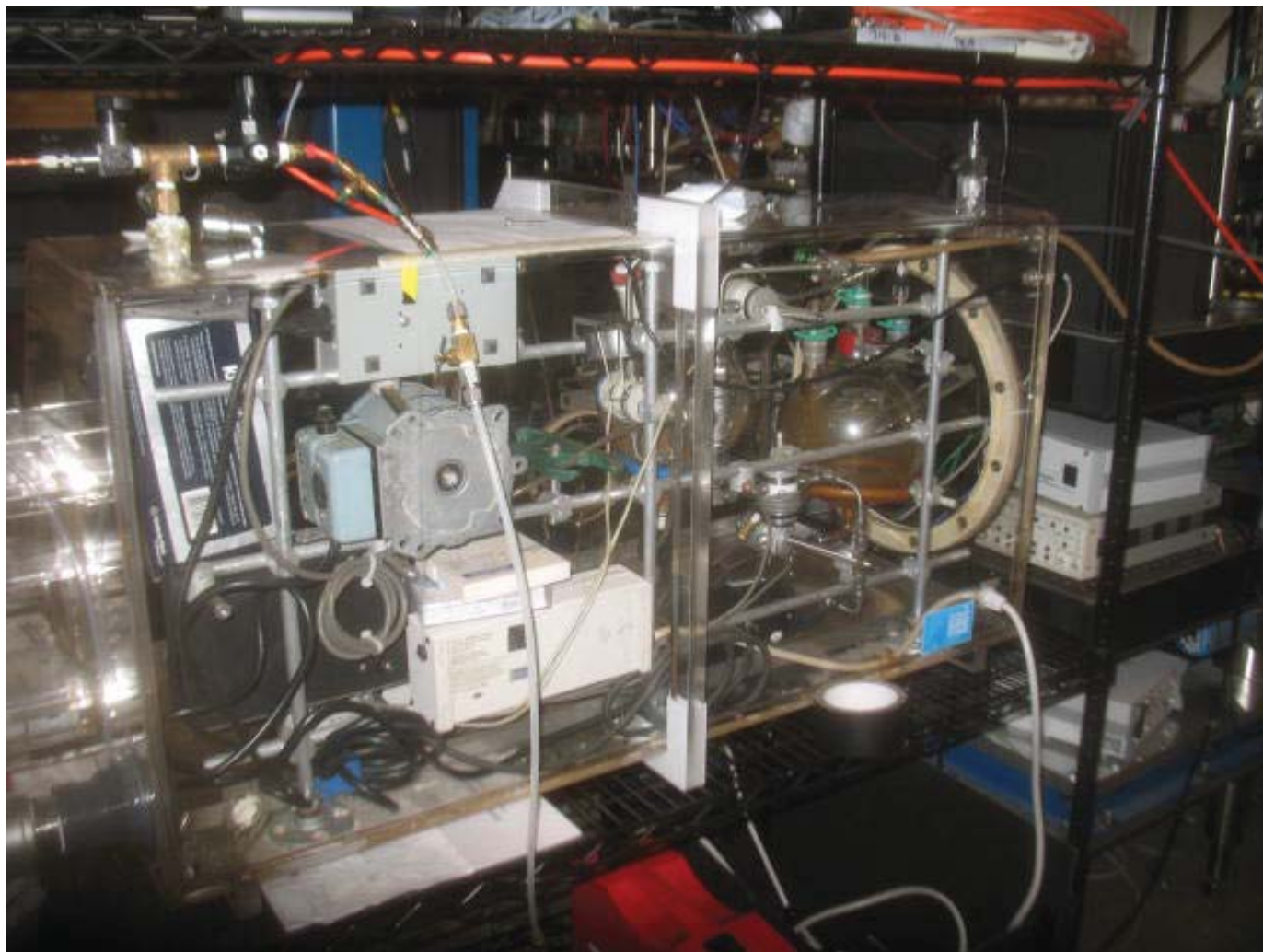


Tubing containing solvent
popped off while
troubleshooting apparatus



Second Eye-Splash Incident

During set-up of experiment, tubing still contained solvent from previous cleaning.



Recent Safety Incidents - Continued

- We have had an increase in 'near miss' incidents.
- There are some common themes: chemical issues, incidents not immediately reported (although they all ultimately were). In the case of chemical exposure timely medical treatment can be critical.
- In the APS incidents there was no explicit requirement for PPE; however, the troubleshooting and setup aspects were not considered in the safety analyses. This provides an opportunity to revisit safety issues.
- Today I issued a notice to all staff and resident users to correct problems with wearing safety glasses during chemical experiments.
- There is management concern that we could be seeing a summer increase in safety related issues – please bring this into the discussion during workplace observation conversations.

Other Safety Issues

- MSD person stung by bee near LOM: report sightings to Building Manager
- Summer Issues...
 - Be aware of workers filling in for others on vacation... ensure training and familiarity with tasks.
 - Particularly take note of students. Ensure that if/when mentor goes on vacation, that there is a clear hand-off of responsibility.
 - Hot weather causes illness from more than heat stress – Medical sees more walk ins of people not feeling well – due to walking from air conditioning to outside heat and back
- Senior management is encouraging ergonomic evaluations, especially when people change their work station set ups.
 - Office ergonomic evaluations can be conducted by trained ESH coordinators – check with your coordinator to if they have received the training
 - Other ergonomic evaluations are performed by a consultant and cost \$150. A cost code must be provided to ESQ.

Operations

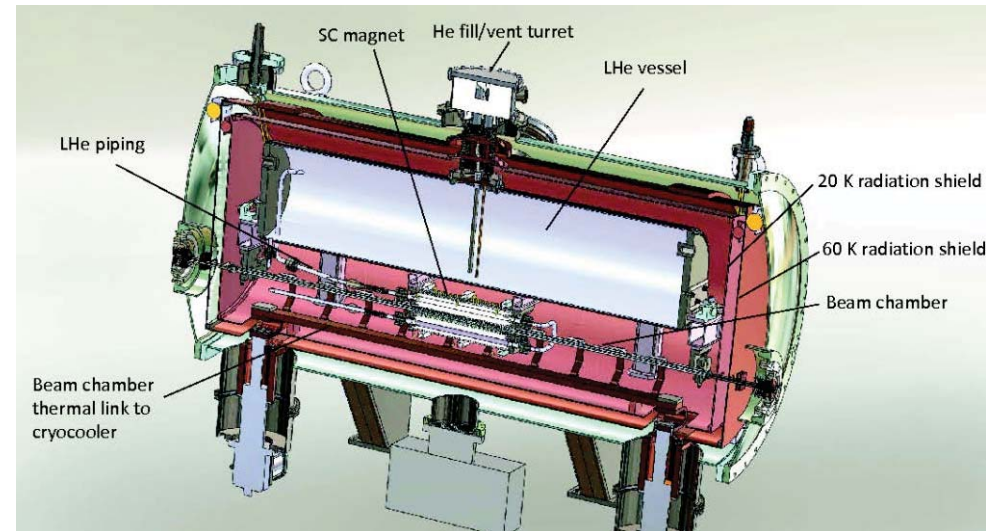
- Run 2012-2 has started well, after 550 hours of operation we are at 99.4% availability with three faults (184 hour MTBF)
- However, our start up not smooth....
- On May 16th at about 1:00 AM the a feeder supply the injectors faulted. The faulted line required splicing to repair the fault and the required parts were not available locally.
- On Friday May 17, 2012, at 11:00 A.M. the parts necessary to complete the cable splice arrived on site.
- Two splices were required, each took one full day, the second cable splice was completed Saturday, 5/19/12 at approximately 8:00 P.M.
- Start-up activities were restored as of ~noon 5/20 (SR rf conditioning)
- Over four days lost in start-up
- An FMS risk analysis of electrical utilities has been initiated. It will address potential problems, MTTR, and mitigation (water systems to follow)

Faulted Feeder



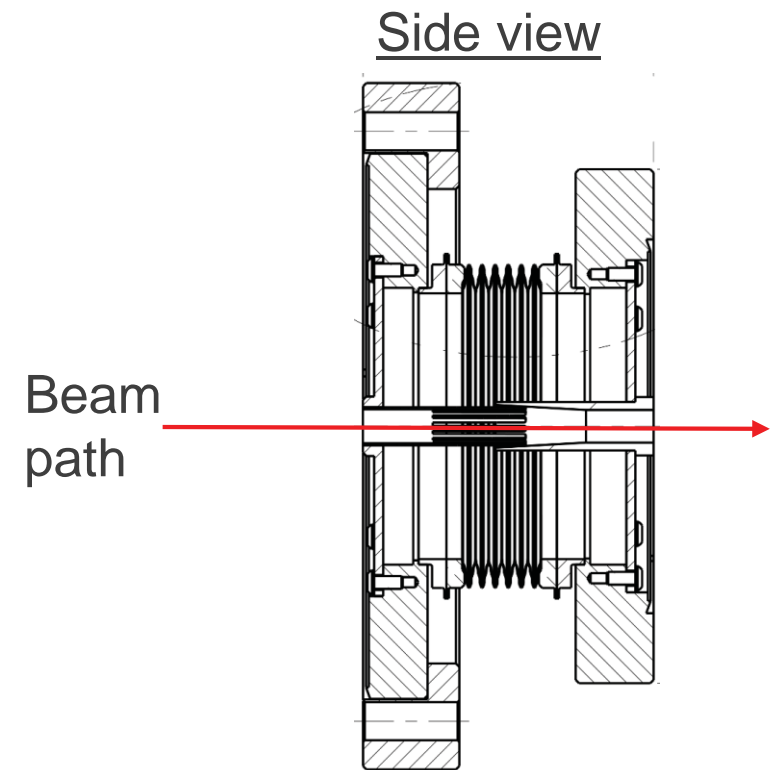
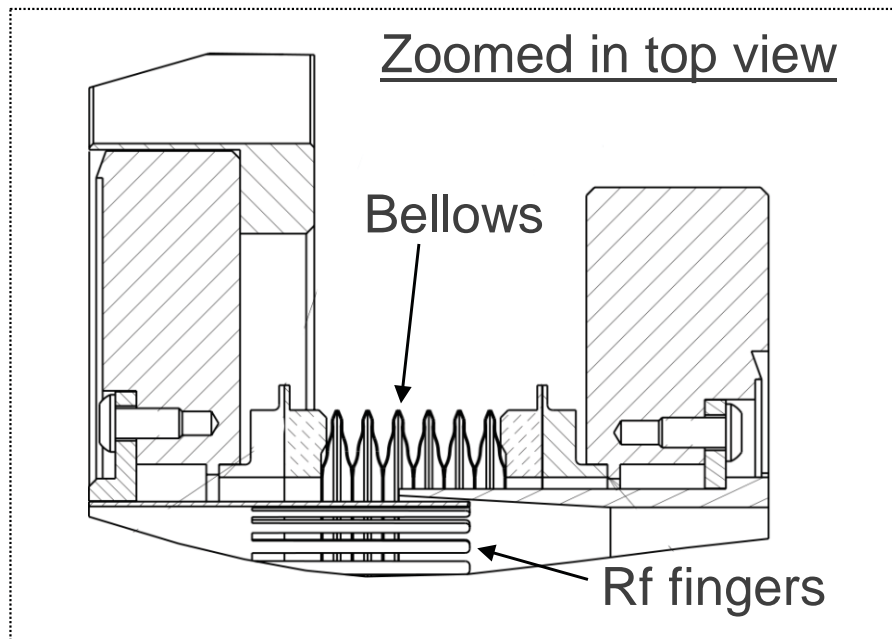
Sector 6 RF Finger Incident

- Sector 6 is the test location for the prototype Superconducting Undulator (“SCU0”)
- Sector required modification to accommodate SCU0
 - Move the existing 6ID device from the upstream to the downstream half of the straight
 - Install a half-length ID chamber for the existing device
- SCU0 was to be installed in the downstream half
- Since SCU0 was not ready, a “dummy vacuum chamber” was installed
- An apparent design issue with the components between the two chambers resulted in an interruption of machine startup, in particular, the rf fingers in a bellows unit between the chambers failed.



Sector 6 RF Finger Incident

- “Rf fingers” are used as liners to hide the bellows convolutions from the beam
 - Prevents overheating of the bellows
 - Prevents beam instabilities
 - Many of these installed in APS
- As part of Sector 6 modifications, a new type was installed
 - Much smaller vertical beam aperture
 - Normal is 40mm, this needed to be 7mm
 - Different (nominally equivalent) materials



Sector 6 RF Finger Incident

- During start-up, the liner failed catastrophically
- Prior to the failure, Sector 6 showed elevated temperatures and vacuum activity, however
 - The vacuum activity wasn't that unusual for a new component
 - The temperatures nearest this component were not excessive
- After the failure, AES and ASD personnel worked through the weekend to restore sector 6 to its original configuration
 - 3.3 days for diagnosis and repair
 - Beam was delivered on time
- A review was held to review findings and evaluate improved designs
- Other facilities (KEK-B, PEP-II, ...) have experienced similar events
 - APS timing mode makes us susceptible to such problems



U of Chicago Review of the APS

- The annual U of C Review of the APS will be by July 19 and 20, 2012.
- Focus of the review will be on strategic planning → APS-U and beyond.
- Talks will be given primarily by the ALD Office and Division Directors.
- Some APS staff will be asked to develop posters for the review. (Rick Fenner will be providing the template for posters.)

Reviewers:

Janos Kirz, Chair (LBNL)	Bob Hettel (SLAC)
Joe Bisognano (Wisc)	Kevin Jones (ORNL)
Joel Brock (Cornell)	Karl Ludwig (BU)
Brent Fultz (Caltech)	Fulvia Pilat (JLab)
Wayne Hendrickson (Columbia/NSLS)	



SAC Beamline Reviews: October 3, 2012

Panel A: HERIX and NRS

- Beamlines to be reviewed: 3-ID and 30-ID (HERIX)
- Review Panel:
 - Dan Neuman (SAC, NIST), Chair
 - Mark Sutton (SAC, McGill)
 - Chi-chang Kao (SSRL)
 - Jay Bass (UIUC)
 - Steve Durbin (Purdue)
 - Laura Edwards (UIUC), invited

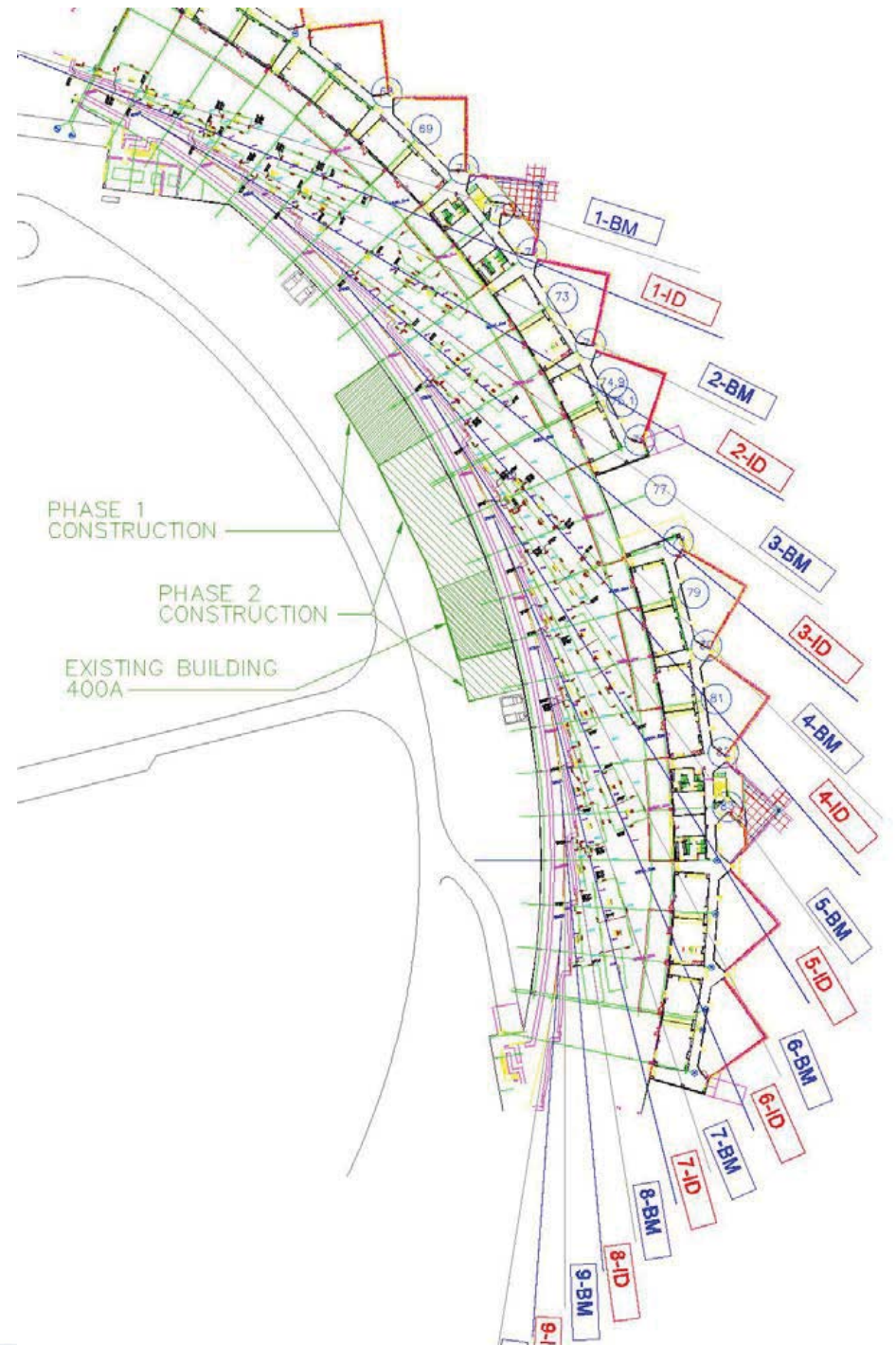
SAC Beamline Reviews: October 3, 2012

Panel B: SAXS, WAXS, GISAXS, USAXS, and XPCS

- Beamlines to be reviewed: 8-ID-E, 8-ID-I, 12-ID-B, 12-ID-C/D, (SAXS/WAXS only), 15-ID (USAXS only)
- Review Panel:
 - KaYee Lee (SAC, UofC), Chair (invited)
 - Friso van der Veen (SAC, Paul Scherrer)
 - Roger Leach (SAC, DuPont)
 - Jack Johnson (SAC, Scripps)
 - Soichi Wakatsuki (SAC, Photon Factory)
 - Andrei Fluerasu (BNL)

Building 400A Project

- Building 400A is being extended to house RF and cryo plant for the Short Pulse X-ray facility.
- Phase 1: 3/18/12 – 7/8/12
 - All foundations and slab
 - All work below finish floor
 - Completion of North section of building (steelwork, roofing, paneling, life safety etc.)
 - All other site work (driveway, etc)
- Phase 2: 7/9/12 – 9/30/12
 - Completion of the rest of the building



APCF Site Near 435 (Sectors 18-20)



APCF Construction Schedule

- Start Construction: August, 2012
 - LOM 435 Parking relocation: Fall, 2012
 - Foundation/ Subgrade: Fall, 2012
 - Steel Erection: Winter, 2012/2013
 - Paving/ Final Sitework: Late Summer/ Fall, 2013
-
- We are installing initial vibration sensor network

(Construction) Vibrations Task Force

- A Construction Vibration Measurement Task Force has been formed.
 - Bruce Glagola is Leader of Task Force
- Four Sub-Teams created
 - Subteam 1: Coordinates construction vibration equipment tests and on site schedules of construction details. (FMS based)
 - Subteam 2: This subteam ensures readiness of beamline accelerometers to collect data and to connect with EPICS as appropriate when construction equipment is being tested and utilized.
 - Subteam 3: Ensures the MCR is ready to monitor SR electron movement while construction equipment testing is being performed. As requested this subteam will communicate when electron beam motion is out of norm
 - Subteam 4: Supplies a scientist to work with designated beamlines when construction vibration measurements are to be monitored, or when problems are noted.
- Task Force has begun meeting, and is prepared to address APCF construction
- Vibration measurement system will be built and commissioned for facility long term use.