

# APS/Users Monthly Operations Meeting

G. Brian Stephenson

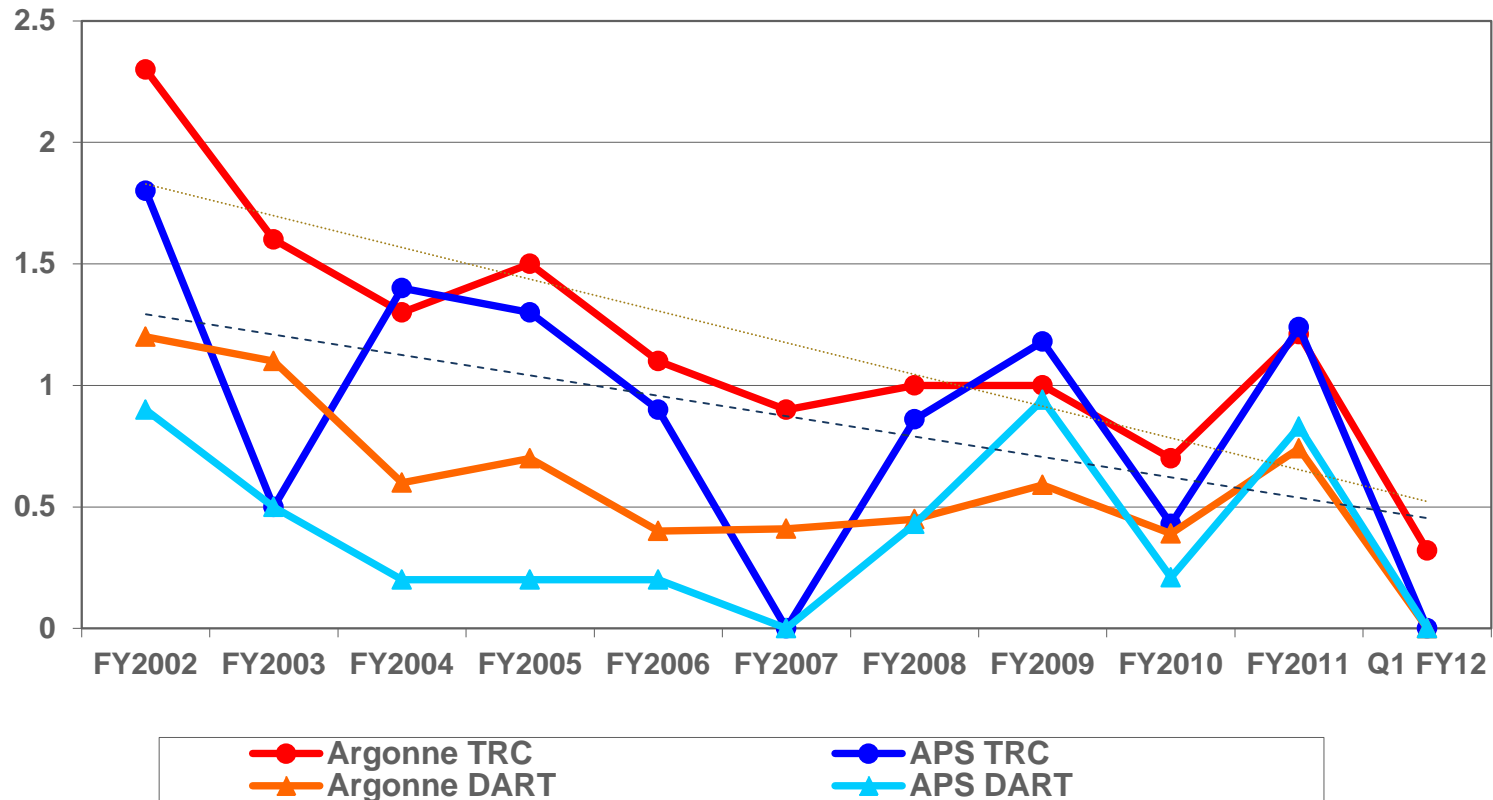
January 25, 2012

# Agenda

- 2:30 p.m. Refreshments
- 2:45 p.m. APS Update – Brian Stephenson
- 3:05 p.m. NUFO goes to Washington - Tony Lanzirotti
- 3:25 p.m. Recent ID Developments at the APS - Efim Gluskin
- 3:45 p.m. Adjourn



# Accident Rates Look Good So Far, First Quarter FY12



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)

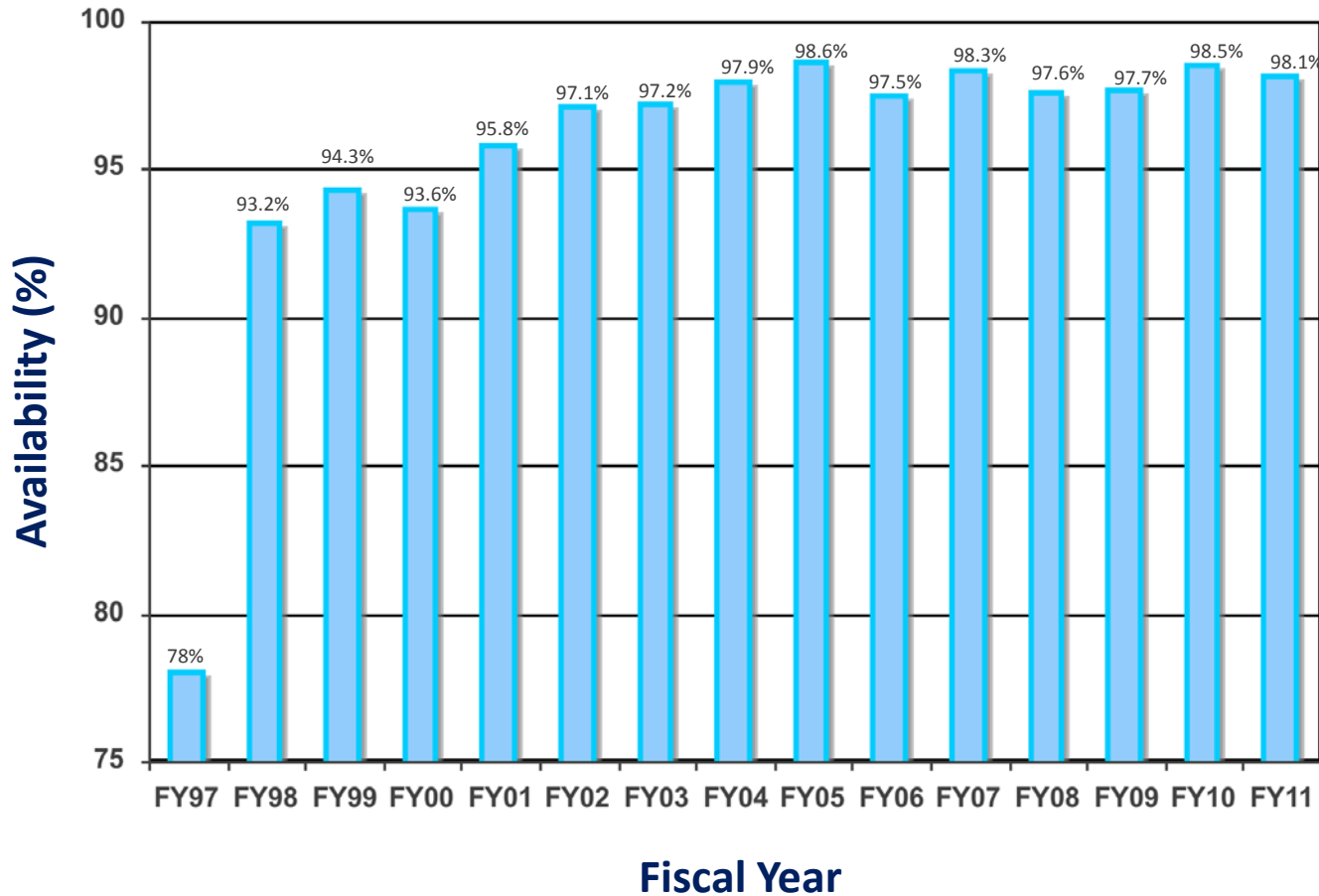
FY2009-10 PSC (APS Divs. Only)

FY2011 PSC (APS Divs) data thru 9/11



# Record Performance of Accelerator

## X-ray availability FY97-FY11

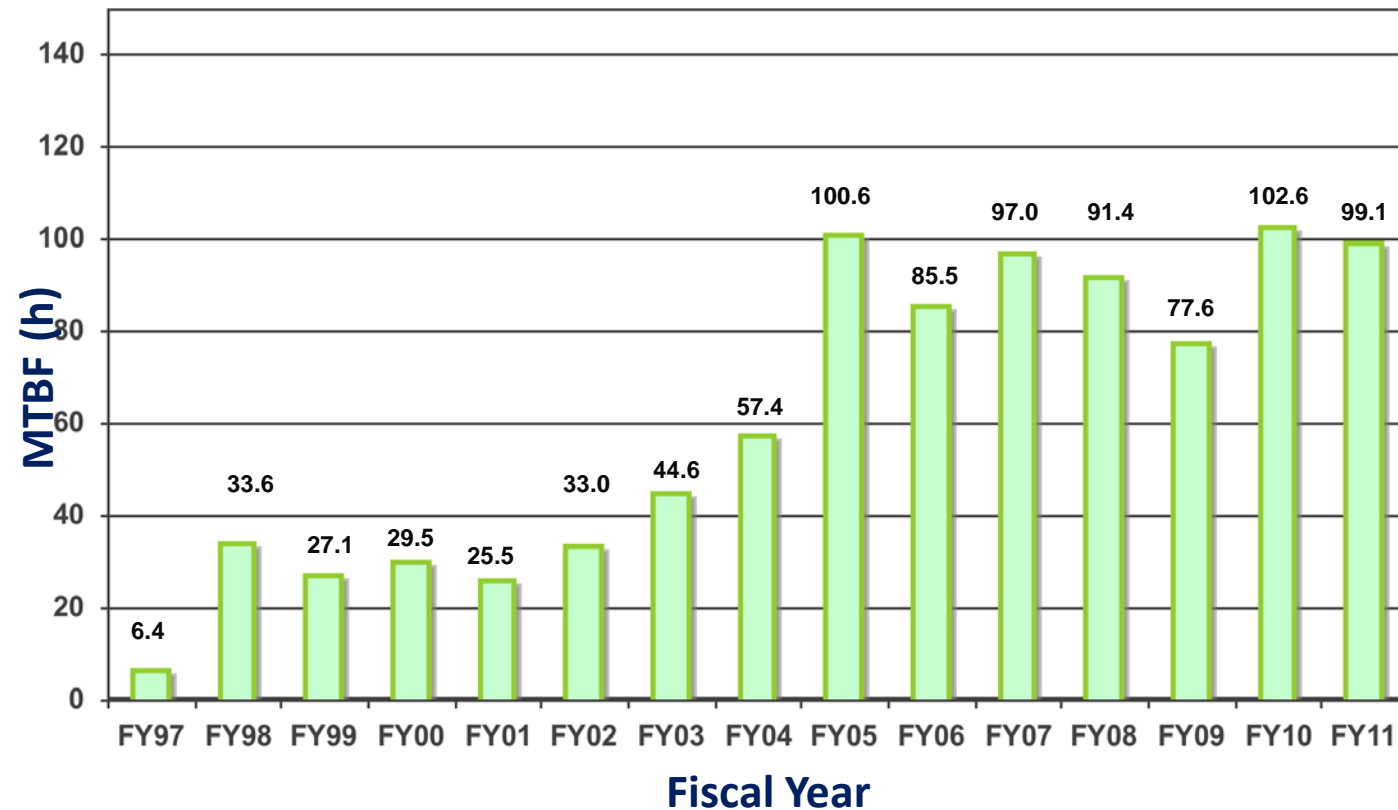


**Oct-Dec 2011 Run:  
99.6% Availability**



# Record Performance of Accelerator

## Mean time between faults (MTBF) FY97-FY11

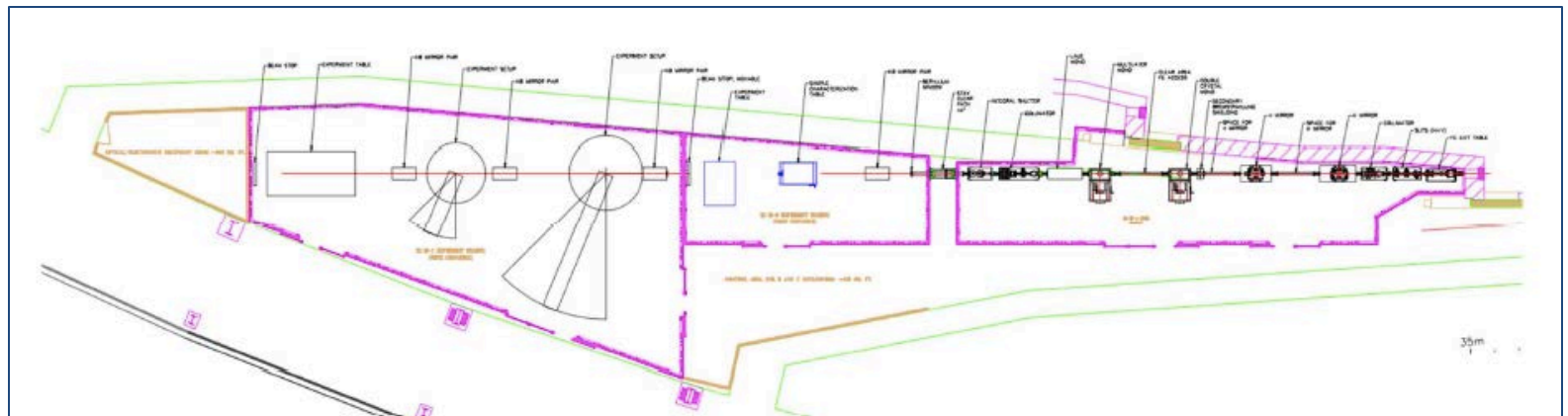


**Oct-Dec 2011 Run:  
220 h MTBF;  
606 h longest time  
between faults**



# Recent and Pending Workshops

- X-ray Interface Science Sector planning workshop, January 10-11
- Dynamic Compression Sector planning workshop January 19-20
- "Three-Way Meeting," Grenoble, February 1-2



# Report of DOE/BES Review of APS Operations (Sept. 2011)

- The reviewers were unanimous in their praises of the superb accelerator performance, the high level of user support, and the scientific productivity of the APS
- Excerpts of reviewers' positive comments:
  - "The APS is operating with a high degree of reliability and has a broad user base producing in excess of 1100 scientific papers per year, with a significant number in the highest impact journals. Many of the topics under investigation are of important technological or societal relevance. The well conceived and ambitious upgrade program will keep the facility at the forefront of photon science in the future."
  - "The Advanced Photon Source is an outstanding world-class light source that is home to a wide range of groundbreaking and exciting science. The operations continue to be superb even as the facility ages, with excellent performance and reliability. This is a testament to the ability and commitment of the staff and management of the APS."
- We also received four specific suggestions for improvement

# Report of DOE/BES Review of APS Operations (Sept. 2011)

## *Areas for Improvement:*

- The centrally-managed delivery of technical support seems to be inadequate and not functioning properly, with a lack of both a proper feedback mechanism to hold support personnel accountable and adequate authority for beamline or accelerator staff to direct the support.
- A periodic renewal review process for the CATs is needed. Under the current system, these programs appear to be evolving toward an open-ended preferred access model.
- Despite some improvements over the last three years, the internal organization and relative weight of the divisions do not seem optimized. The reviewers noted major gaps in communications between upper management and beamline and accelerator staff. Decision-making processes do not appear to be transparent to the staff.
- X-ray optics and advanced detectors are crucial for realizing the full potential of the APS upgrade. APS management is urged to reevaluate the priority of the upgrade path for optics and detectors.



# Beamline Reviews

- Scientific Advisory Committee meeting October 12-13:  
Charged to organize future beamline reviews
  - In the future, all APS sectors will be occupied
  - New programs can only be created by the evolution or replacement of existing programs
  - What process should be used to review the tenure of each beamline?
- SAC agreed to take lead in beamline reviews
- Process has been drafted
  - SAC-member-led committees to review selected beamlines
  - Reports to full SAC meeting on next day
- Expect to start with APS-operated beamlines in October



# Budget and Staffing

- DOE budget for FY12 was enacted on December 23
  - APS received full funding for Upgrade (\$20M)
  - APS received ~5% reduction in budget for operations (\$123M)
  - Expecting to receive significant funding for DCS in FY12
- Developing a coordinated spending and staffing plan that will utilize some of our carryover from last year
  - Impact on operations – will plan standard 5000 hours of user operations; may need to delay staffing and opening some of our new beamlines and to delay planned machine improvements
  - Proceeding with preliminary design work on Upgrade, plan to have PDR ready for review by end of FY12
  - Have active searches underway for ~50 personnel openings



# APS Space Planning

- With Upgrade, we will run out of 'unused' floor space for staging construction, temporary storage, etc.
- Clutter and poor housekeeping are a safety concern
- APS Space Use Guide now posted
- Part of a long term plan being developed to expand and organize office, lab, staging, and storage space
- Want to get feedback from all on plans as we develop them

## Advanced Photon Source

	Page 1 of 9
Revision #:	0
Issue Date:	6/8/11
Review Period:	3 years
Supersedes:	N/A
Last Reviewed:	6/8/11

### APS Space Use Guide

All areas occupied by the APS shall be assigned to and overseen by one of the APS Divisions or the ALD Office (see [Appendix A](#)). Oversight is the responsibility of the designated Division Director/ALD and responsibilities include:

- Ensuring space is used effectively (e.g., as programs and staffing change, the ALD-appointed APS Space Committee is notified of changes in space needs requirements—including when space is no longer needed—and ensuring that spaces are not used to store materials that are of little value to the APS); and
- Maintaining a professional, uncluttered appearance, and
- Maintaining a safe work environment, that meets Argonne ESH standards.

### Site-specific Standards

#### Experiment Hall

Sector Boundaries — Each sector is bounded by the storage ring, the sector dividing egress aisles (see Experiment Hall Layout, Sector Beamline Areas insert, APS document number [APS\\_1418307](#)), and three line segments defined by lines connecting the out-board faces of the I-beam columns at the end of the sector. Unless approved by the AES Division Director (AES-DD) as part of a beamline design review process and the APS Deputy Director for X-ray



# High Bay Lab Space in Building 314



# Office Space in Building 314



# Considering Trailers for Temporary Office Space



# New Parking in Old CP-5 Area



# APS Lab Office Module (LOM) Expansion

- This year we are putting together a proposal to expand the LOMs over the next decade, using Argonne IGPP funding
- Two options are being considered: vertical or horizontal expansion

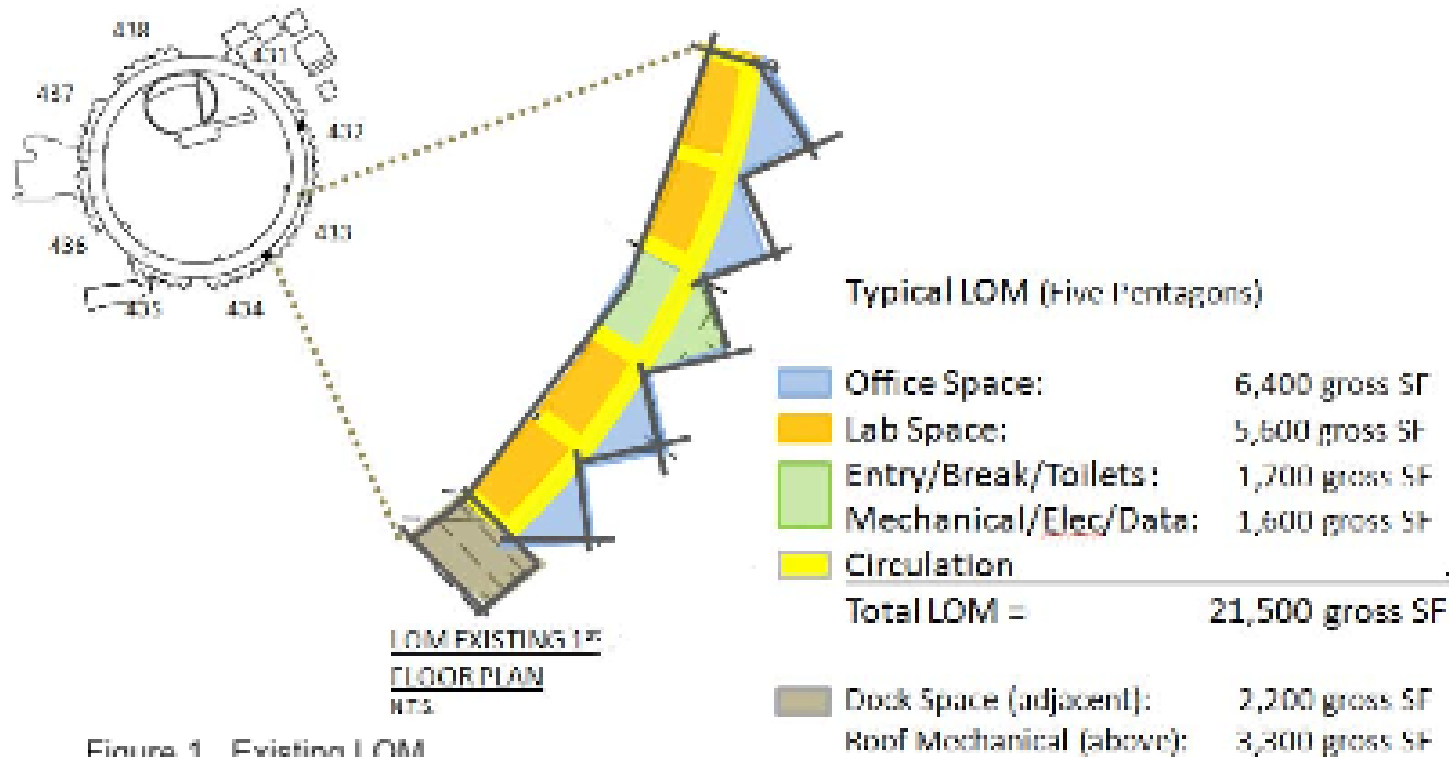


Figure 1. Existing LOM

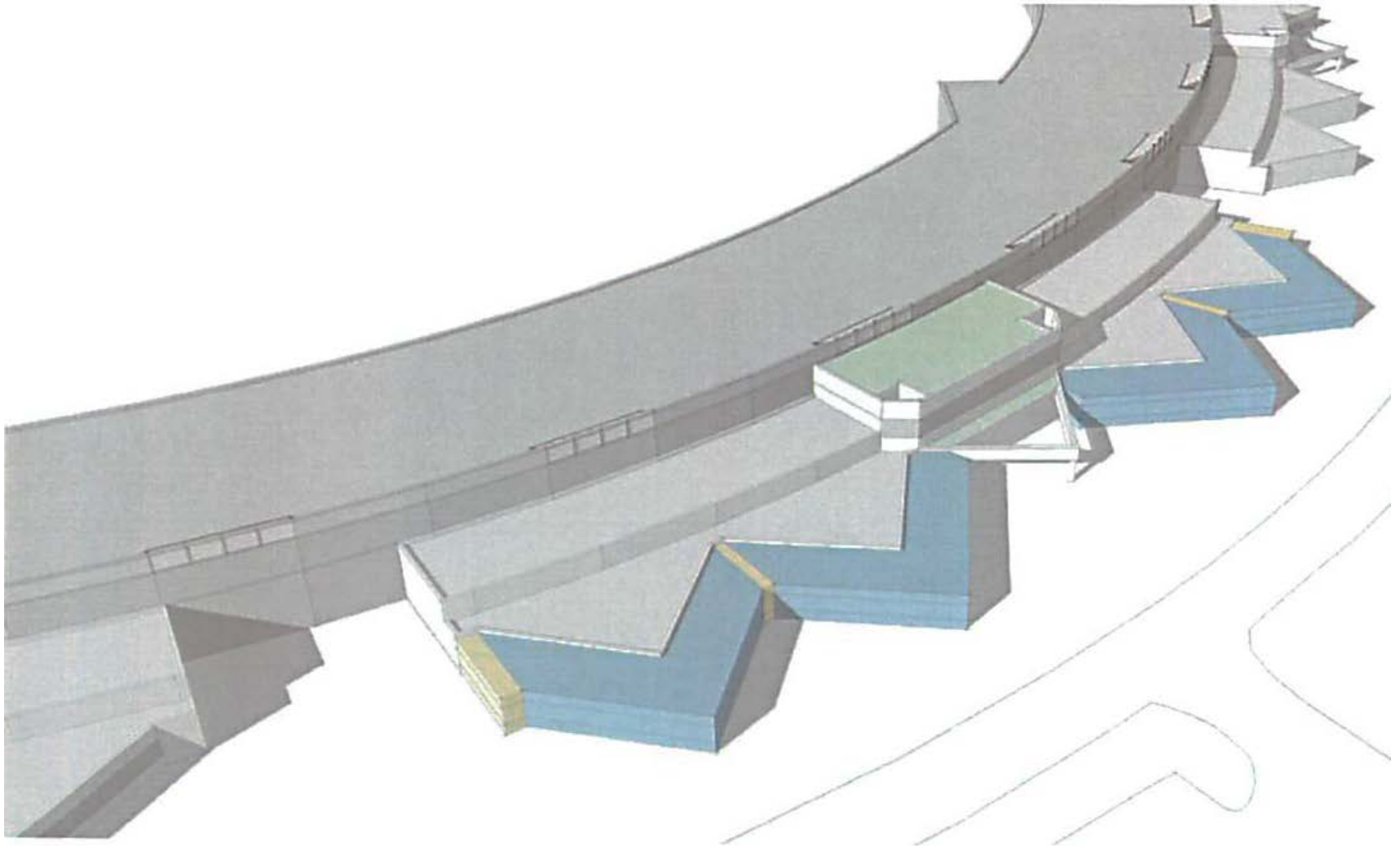


# The Architecture of the APS

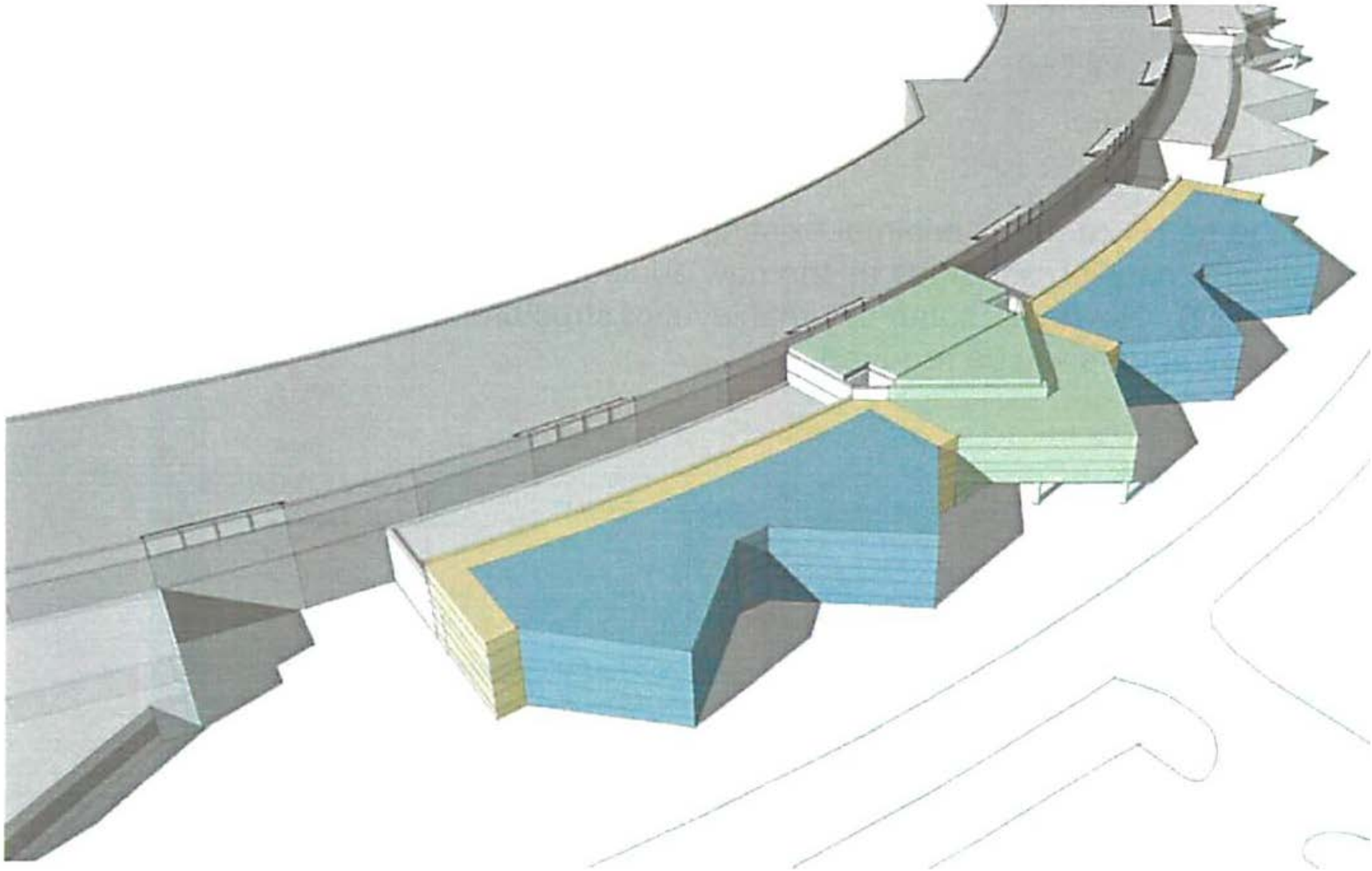
- APS is a distinctive, recognizable symbol for DOE Office of Science User Facilities and we need to retain the architectural character of the facility.



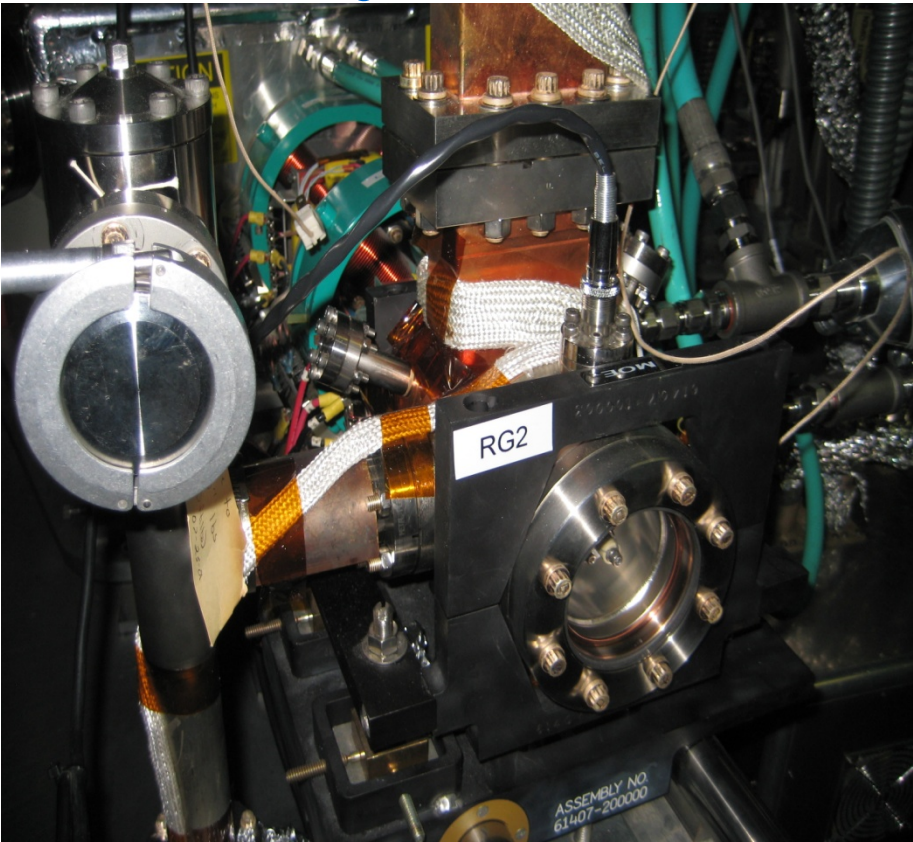
# LOM Horizontal Build



# LOM Vertical Build



# Pacesetter: John Dench, John Hoyt, Joseph Gagliano, Aaron Lopez, Raul Mascote, Wayne Michalek, Rick Putnam and Rob Wright (AES)



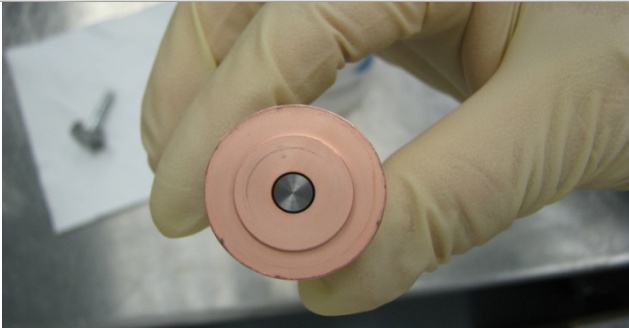
**RG2 STATUS**

FLOW OK  PRESSURE NORMAL  PW TEMP NORMAL  PW TEMP LOW  PW TEMP HIGH  HEATER OVERTEMP  24 VDC OK

TOUCH SCREEN OVERRIDE PW  HTR

<input type="checkbox"/> PUMP ON	72.79	Primary Water Temp F
<input type="button" value="START"/> PUMP START	106.71	PW Control RTD Temp F
<input type="button" value="STOP"/> PUMP STOP	108.00	PW Set Point F
	75.00	PW Mix Valve Pos. %
	72.55	PW System Pressure PSI
	3.24	PW Flow GPM
	100.00	PW PID Output %
	8.00	PW PID Proportional
	0.10	PW PID Integral
	0.00	PW PID Derivative
<input type="checkbox"/> HEATER ON	109.04	HTR Temperature F
<input type="button" value="START"/> HEATER START	109.00	HTR PID Set Point F
<input type="button" value="STOP"/> HEATER STOP	82.21	HTR Output %
<input type="button" value="RESET"/> RESET	82.21	HTR PID Output
	12.00	HTR PID Proportional
<input type="button" value="CHANGE VALUES"/>	0.10	HTR PID Integral
	0.00	HTR PID Derivative

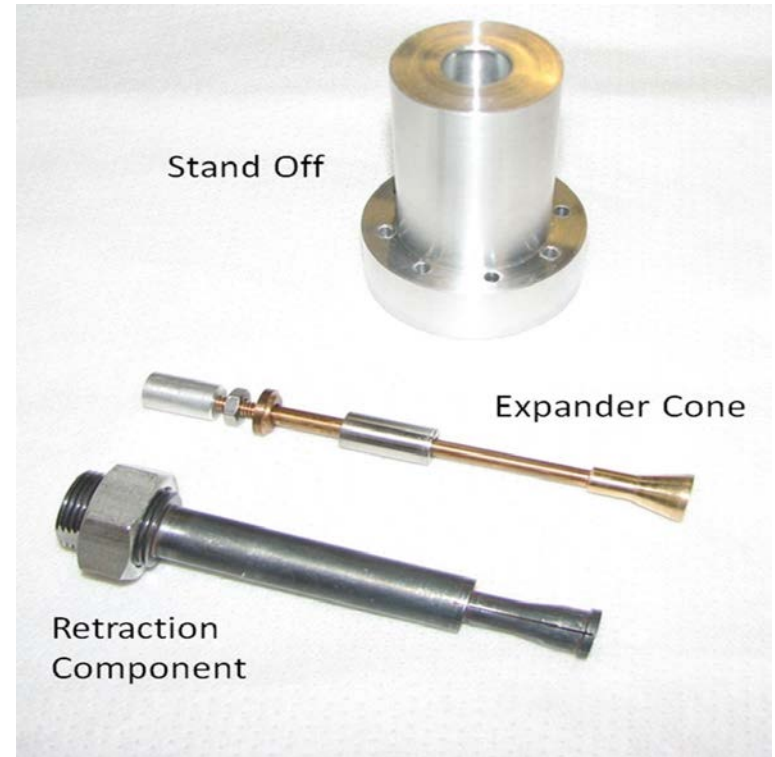
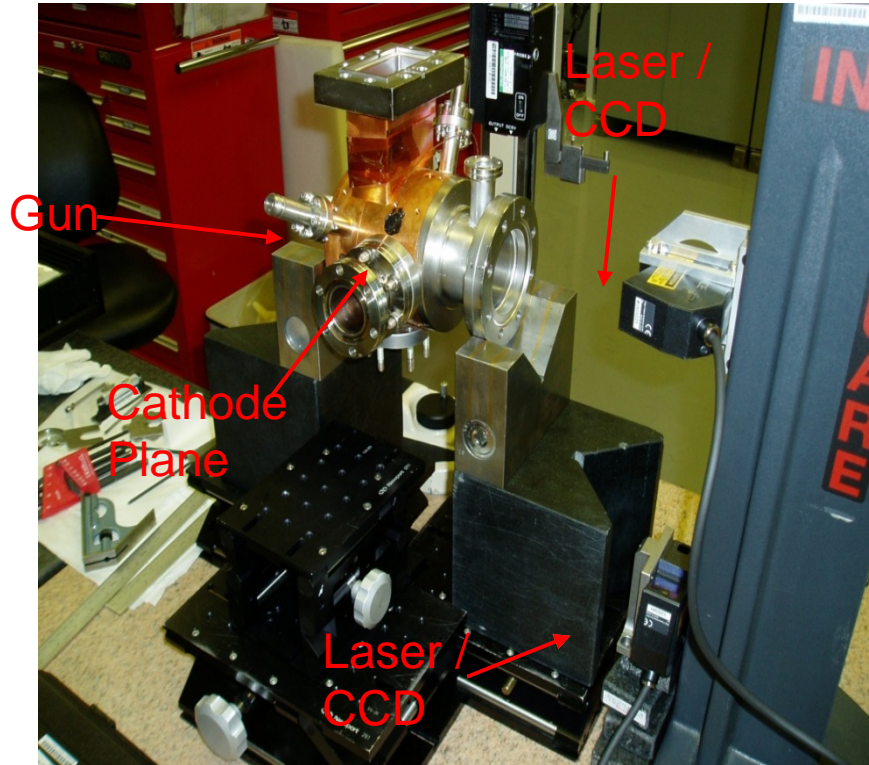
JBS 03/12/11



Cited for first identification of the rf gun backplane distortion which turned out to be the root cause of the gun problems, development of new procedures for careful preparation, cleaning and installation of the repaired guns in close collaboration with AES/MED group personnel who performed the gun repair and development of 3 independent, identical rf gun water stations that greatly improve gun testing flexibility as well as redundancy for the main APS operations of guns RG1 and RG2. After repair the guns were successfully tested in the ITS and demonstrated to perform normally in the APS linac during APS operations.



# Pacesetter: Bran BrajuskoVIC, Bill Jansma and Emil Trakhtenberg (AES)



Cited for detailed thermal and mechanical analysis of the APS operations rf guns, development of a laser measurement system used to determine precise mechanical dimensions of the APS rf gun cathode assemblies and the rf gun cathode backplane, design and fabrication of a repair tool used to restore APS rf guns to nominal mechanical dimensions and design and fabrication of a special retaining ring to hold the rf gun cathode assembly bolts firmly in place so they cannot loosen as the cathode is repeatedly heated and cooled. After repair, the guns were successfully tested in the ITS and demonstrated to perform normally in the APS linac during APS operations.



## Pacesetter: Susan Benda, Judith Kitching (XSD) and Jessica Skwarek (PSC)



Extraordinary effort in compiling impact factor data for APS publications at all beamlines and to generate presentation material that allowed comparisons of the impact of APS publications to that of other facilities for the DOE Review at the APS.