

# APS Upgrade Forum

**Stuart Henderson**

June 10, 2015

## DOE CD-1 Review

DOE Office of Project Assessment (OPA) Review  
of APS-U is scheduled for

**September 22-24, 2015**

# Working Timeline toward CD-1 Review

- April
  - ✓ Form Project Management Advisory Committee (PMAC) and Experimental Systems Advisory Committee (ESAC)
  - ✓ Set CD-1 review date
- May
  - ✓ Complete Basis of Estimate cost drill-downs
  - ✓ Begin Science planning workshops
- June
  - ✓ Hold PMAC meeting
  - Complete Conceptual Design Report revisions
  - Hold ESAC Meeting – next week
  - Issue draft Early Experiments document from Science planning workshops
- July
  - Complete all documentation for Director's Review
  - Hold Director's Review July 15-17, 2015
- September
  - CD-1 Review Sept. 22-24, 2015

# Upcoming ESAC Meeting

## ESAC members in attendance

- Piero Pianetta (SLAC),  
Chair
- Paul Zschack (BNL)
- Heinz Graafsma (DESY)
- Tom Rabedeau (SLAC)

## Expanding group for next meeting:

- Christian Schroer (DESY)
- Gene Ice (ORNL)
- Jean Susini (ESRF)
- Tilo Baumbach (ANKA)

## APS-U Experimental Systems Advisory Committee Meeting June 18-19, 2015 Building 401/Room B5100 Agenda

### Thursday, June 18, 2015

8:30 AM	Executive Session	ESAC Committee
8:45 AM	Welcome/Project Overview	Stuart Henderson
9:15 AM	Accelerator Overview	Michael Borland
9:45 AM	Insertion Device Overview	Mohan Ramanathan
10:30 AM	Break	
11:00 AM	Beamline Overview	Dean Haeffner
12:00 PM	Working Lunch - Discussion of Morning Session	
1:00 PM	APS/ASP-U Integration	Stephen Streiffer
1:30 PM	Detector Development	Bob Bradford
2:00 PM	Optics Simulation	Xianbo Shi
2:30 PM	Break	
3:00 PM	Zone Plate R&D	Michael Wojcik
3:30 PM	Front Ends Overview	Yifei Jaski
4:00 PM	Beam Stability	Bingxin Yang
4:30 PM	Discussion	
5:30 PM	Adjourn	
6:30 PM	Dinner - Location TBD	

### Friday, June 19, 2015

8:00 AM	Executive Session	ESAC Committee
9:00 AM	Tour of Insertion Device Facility	Led by Mohan Ramanathan
10:00 AM	Executive Session	ESAC Committee
12:00 PM	Working Lunch Discussion - Planning for CD-1 Discussion	
1:00 PM	Close-out report	ESAC Committee
2:30 PM	Adjourn	

# CD-1 Documentation Status

CD-1 Requirement	Status
Acquisition Strategy	Draft under FPD Review
Preliminary Project Execution Plan	Draft under FPD Review
FPD Appointment	Done <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
IPT Charter	Draft under FPD Review
Risk Management Plan	Done <input checked="" type="checkbox"/>
Space Requirement	N/A
Conceptual Design Completion	
Review	Externally Reviewed Feb 2015 <input checked="" type="checkbox"/>
Report	Final edits completed June 5
Preliminary Hazard Analysis Report	Complete. Submitted to ASO <input checked="" type="checkbox"/>
Integrated Safety Management Plan	Complete. <input checked="" type="checkbox"/>
Preliminary Quality Assurance Plan	External Review Complete, response complete. <input checked="" type="checkbox"/>
Safeguards and Security Requirements	Done <input checked="" type="checkbox"/>
Complete NEPA Strategy Determination	Complete. ASO reviewing.
Update Funding Documents	Ongoing and Current
Complete ICE	Concurrent with Sept OPA Review

- CD-1 Requirements are in good shape

# APS Upgrade Proposed Project Scope - Planning Basis

- Accelerator
  - New 6 GeV MBA high-brightness storage ring lattice in existing tunnel
  - Doubling of ring stored beam current to 200 mA
- New insertion devices for 35 sectors optimized for brightness and flux
  - Incorporates SCUs on selected beamlines
- New and upgraded front-ends of common design for maximum flexibility
- Beamlines
  - A suite of 6 flagship, world-leading beamlines and major upgrades to two beamlines
  - A package of optics, stability and detector upgrades to take full advantage of MBA source properties
- Improved electron/photon beam stability
- **Well-defined** installation and testing period is a **key deliverable**
  - **External review found the present ~12-month plan achievable**
  - Given the importance of minimizing APS unavailability, the APS Upgrade will require a very different strategic approach from typical installations

**APS Upgrade design builds upon existing \$1.5 billion existing DOE and partner investments in infrastructure, APS injector, and beamlines**



# Upcoming Events and Workshops

## ■ Upcoming Events

- *Exp. Systems Adv. Cmte., June 18-19*
- *APS SAC Meeting, June 24*
- *Director's Review, July 15-17*
- *DOE OPA Review September 22-24*

## ■ Upcoming Conferences and Workshops

- *APS-U Biology and Life Sciences Workshop, May 22-23*
- *SRI, New York NY, July 6-10*
- *Emerging Opportunities in High Energy X-ray Science: The Diffraction Limited Storage Ring Frontier, Argonne, July 13-14*
- *Denver X-ray conference, Aug. 3-7*