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UofC Review of AES and ASD Divisions

July - APS/User Monthly Operations Meeting

William G. Ruzicka

AES Division Director

July 25, 2007

Charge to The University of Chicago Review Committee for the Accelerator Systems and Engineering Support Divisions of the Advanced Photon Source at Argonne National Laboratory

May 15 & 16, 2007

The Committee's charge is to evaluate the quality of facility performance, its impact on DOE missions and national needs and its plans for future developments and improvements of the facility. Specific items for consideration include:

- Evaluate and benchmark the quality of the accelerator, engineering and infrastructural systems at the Advanced Photon Source (APS), discussing both strengths and challenges.
- Is the APS effectively maximizing the use of resources to provide appropriate staffing and expertise in support of accelerator, engineering and infrastructural systems?
- Evaluate the APS' plan for future developments to enhance x-ray science including short-term enhancements and long-term upgrade plans.
    - Is the plan consistent with a national strategy for supporting x-ray science? Does it assess and address key programmatic gaps that should be filled? Does it accurately recognize and properly exploit key strengths of Argonne National Laboratory?
    - Does the plan realistically assess and address resource requirements (Laboratory, DOE, other) for implementing future developments? Is the APS attracting innovative accelerator researchers to support cutting edge accelerator development. Does the plan achieve an appropriate balance between necessary maintenance and upgrades versus innovative improvements?
- Evaluate the effectiveness of the Argonne Accelerator Institute in supporting the ERL R&D program and encouraging collaboration between the APS and other Argonne accelerator physicists and engineers.

The University of Chicago Review Committee for the
ADVANCED PHOTON SOURCE (APS)

at Argonne National Laboratory
REVIEW COMMITTEE MEMBERS
May 15 & 16, 2007

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The University of Chicago Board of Governors Liaison for the APS Accelerator Systems Division Review Committee Meeting

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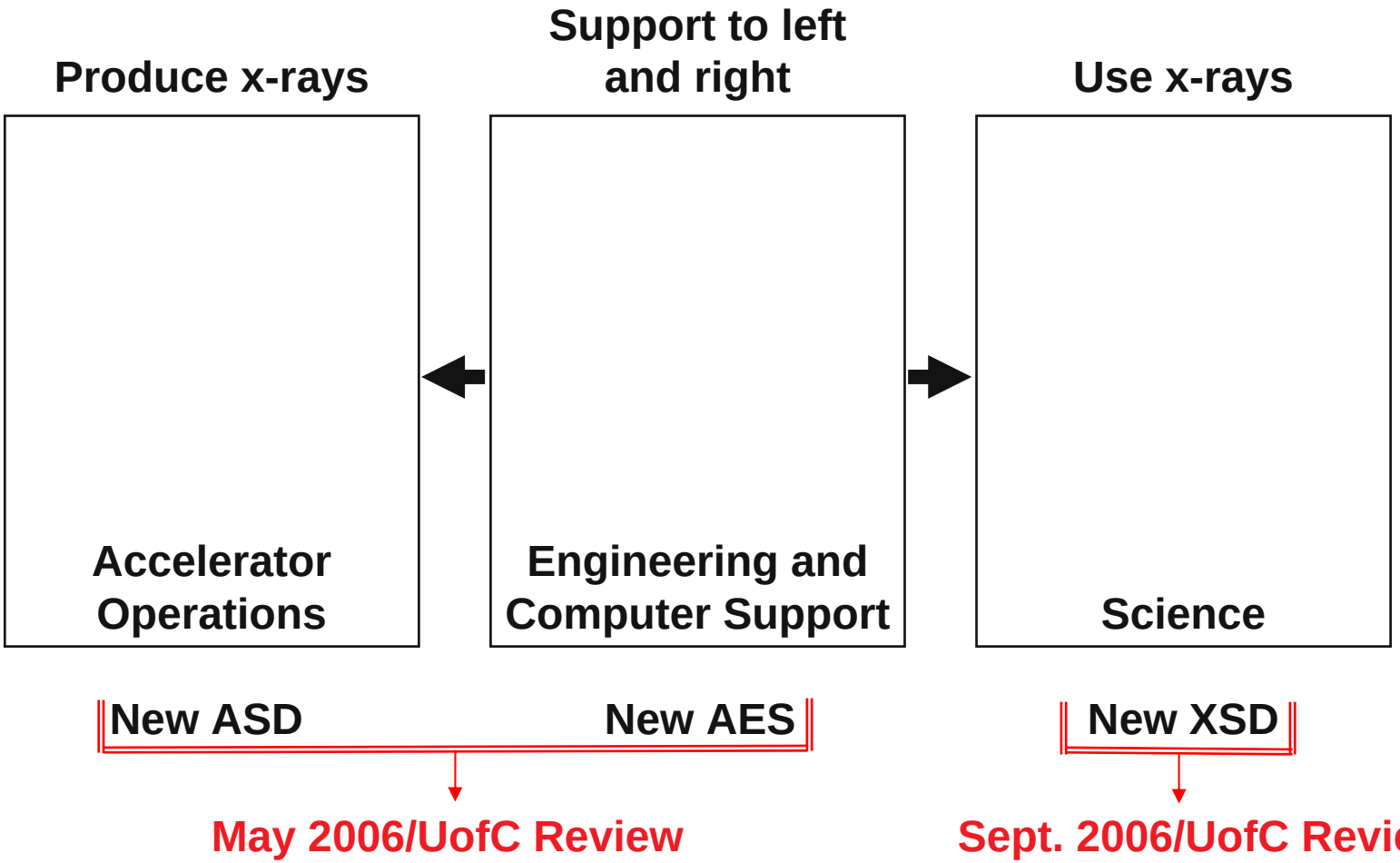
Ruzicka Presentation to UofC Review Committee

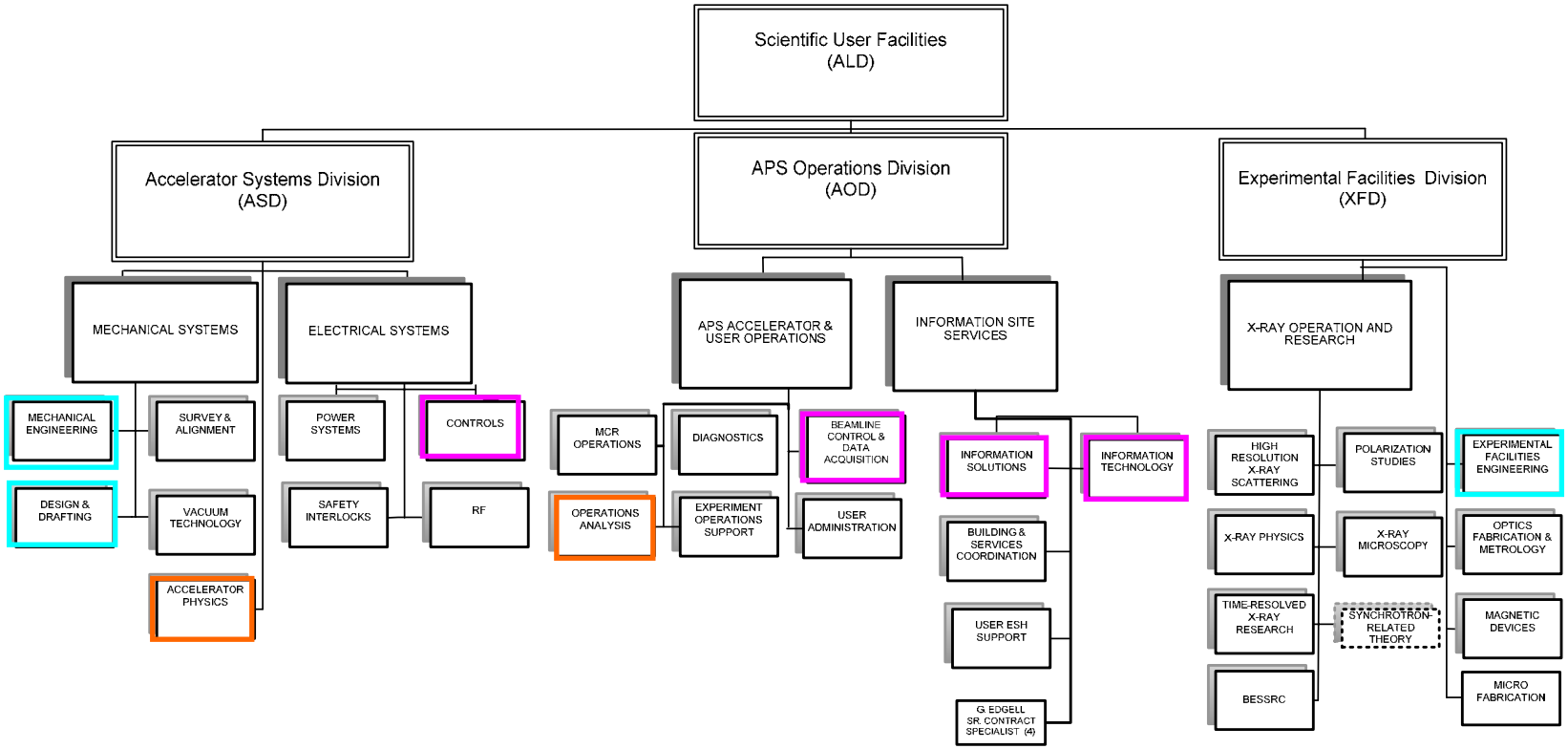
AES Division Born March 31, 2006 - Reorganization Debate

- Go back to basics. Develop a simple, logical organization chart.



Ruzicka Presentation to UofC Review Committee

APS (before April 2006 reorganization)



One major goal of reorganization is to minimize duplication.

Why are ASD Mechanical Engineers and XFD Mechanical Engineers in separate divisions?

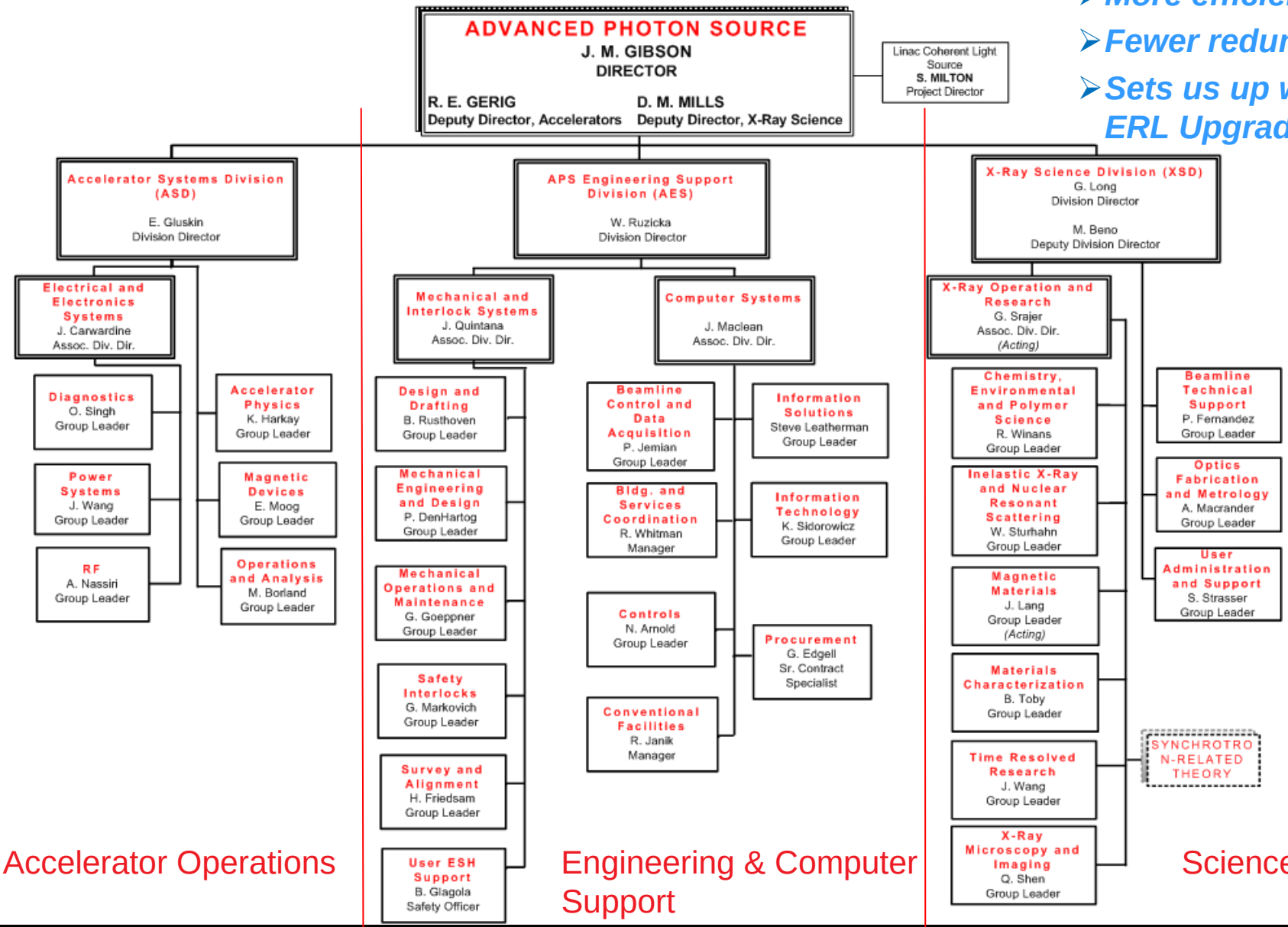
Why are OAG and Accelerator Physics in separate divisions?

Why are IT, IS, BCDA, and Controls in two different divisions?

Ruzicka Presentation to UofC Review Committee

New APS organization

- *More efficient*
- *Fewer redundancies*
- *Sets us up well for the ERL Upgrade*



UofC Review Report Quotes

- The reorganization of APS engineering support is viewed by the committee as a very positive move that has been successfully implemented and is beginning to bear fruit. It has increased support across the board to the benefit of APS and its users.

- Overall the quality of engineering support appears very high, with capabilities covering all the necessary skills required at a light source facility.

Ruzicka Presentation to UofC Review Committee

Operations Directorate Meeting held Every Monday

- Attended by senior management from ALD office, three APS Divisions, Partner User Council Representative, APS User Organization Representative, and DOE Laison Officer.
- Review weekly safety issues.
- Review all accelerator and beamline downtime (with downtime assignment).
- Review weekly accelerator availability and MTBF.

OPS Directorate

April 2, 2007

Present: Barkalow, Beno, Borland, Carwardine, Gerig, Gibson, Gluskin, Gog, Houck, Keane, Maclean, Mills, Quintana, Ruzicka, Schroeder, Zitzka, Jaje

Safety – Barkalow:

- Barkalow reported that there were no injuries in the last week.
- Management assessments were due last Friday. We have received a two-week extension for the calibration assessment. The others were submitted on time.
  - XSD's laser safe… …xample of how the assessments
  - Barkalow has se… …divisions to use as an example.

Operations - Schroed…

- Schroeder stated th…
  - RF2 circulator … …rf circulator load during the … …as assigned to the ASD/RF Group…

APS Downtime Report for the Past 7 Days

Downtime for Fill #18

Length – 0.81 hrs.

Problem – RF2 Circulator Flow trip.

Resolve – RF Group investigated. They replaced the RF Circulator load during the subsequent machine studies.

Downtime Assignment – ASD-RF

Downtime for Fill #19

Intentional Dump – End of period.

Downtime for Fill #20

Length – 1.38 hrs.

Problem – 4-ID PSS trip dropped the SR tunnel to Controlled Access mode. Recovery of the SR was delayed due to human error.

Resolve – 4-ID was taken globally off line. SR was cycled back up to beam permit. SR systems were recovered and SR dipole standardized.

Downtime Assignment – ASD-RF …

04/02/07 Page (1) of (3)

Listing of Statistics for Run1-2007 (Created Mon Apr 02 10:19:42 CDT 2007)

Total Amount of User Time in this interval 1246.96 Hours

User periods in this interval

01/30/2007 08:00	To	02/06/2007 08:00	168.00 Hours,	Delivered Beam:	166.49 Hours,	2 Fault(s), 83.25 MTBF,	99.10% of Sched. Time
02/07/2007 08:00	To	02/13/2007 08:00	144.00 Hours,	Delivered Beam:	143.43 Hours,	1 Fault(s), 143.43 MTBF,	99.60% of Sched. Time
02/14/2007 08:00	To	02/19/2007 08:00	120.00 Hours,	Delivered Beam:	119.99 Hours,	0 Fault(s), 119.99 MTBF,	99.99% of Sched. Time
02/21/2007 08:00	To	02/27/2007 08:00	144.00 Hours,	Delivered Beam:	141.00 Hours,	1 Fault(s), 141.00 MTBF,	97.92% of Sched. Time
02/28/2007 08:00	To	03/06/2007 08:00	144.00 Hours,	Delivered Beam:	143.99 Hours,	0 Fault(s), 143.99 MTBF,	100.00% of Sched. Time
03/07/2007 08:00	To	03/12/2007 08:00	119.00 Hours,	Delivered Beam:	116.41 Hours,	1 Fault(s), 116.41 MTBF,	97.82% of Sched. Time
03/14/2007 08:00	To	03/20/2007 08:00	144.00 Hours,	Delivered Beam:	143.99 Hours,	0 Fault(s), 143.99 MTBF,	100.00% of Sched. Time
03/21/2007 08:00	To	03/27/2007 08:00	144.00 Hours,	Delivered Beam:	135.74 Hours,	5 Fault(s), 27.15 MTBF,	94.26% of Sched. Time
03/28/2007 08:00	To	04/02/2007 08:00	120.00 Hours,	Delivered Beam:	118.62 Hours,	1 Fault(s), 118.62 MTBF,	98.85% of Sched. Time

Delivered Beam	1229.68 Hours
Percentage of Scheduled Time	[illegible] %
Downtime During Period	17.28 Hours
Percentage of scheduled time SR current > 10 ma	98.94 %
Average Delivered Current During This Period	101.06 mA
Total integrated Current During This Period	124.28 A-hr
Mean Fill Duration in Period	102.47 Hours
Mean Fill Duration from Poisson Fit	128.74 Hours
Mean Time Between Faults (MTBF)	[illegible] Hours
Faults per Day of Delivered Beam	0.21
Total Number of Faults	11
Scheduled Topup Time	1103.00 Hours

98.61%

111.79 hours

UofC Review Committee Quote

- The quality of the accelerator operations at the APS is setting a standard for other U.S. light sources, and is a match with the best facilities on the world-scene.

Ruzicka Presentation to UofC Review Committee

Project Proposal System

- Request for all new project proposals to be submitted per yellow timeline.

ARGONNE NATIONAL LABORATORY
9700 South Cass Avenue, Argonne, Illinois 60439

Advanced Photon Source

DATE: June 9, 2004

TO: APS Division Directors

FROM: J. M. Gibson ALD/APS Director

SUBJECT: The APS Project Management Process

Pursuant to the APS Goal for FY'04, to employ a graded approach to project management, and in order to make good executive decisions when it comes to APS commitments and allocation of our resources, a Project Management process has been developed to be applied APS-wide.

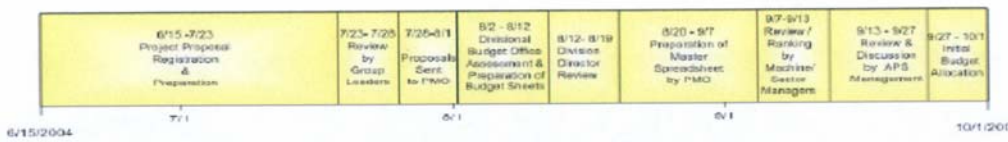
The process as described in the attached document consists of two phases. In the first phase, proposals for new projects and new hires are submitted to APS Management for review, prioritization and approval. Once approved, the projects move on to phase II for management and tracking. The flow of this process is described in figure 1 of the attached document. (*The APS Project Management Process*)

Phase I of the process was implemented during the FY'04 budget review and allocation exercise. While it was very useful, many lessons were learned as the process was evolving. Most of these lessons were addressed in preparation for the FY'05 budget allocation exercise.

I would like to ask the APS Project Management Office (PMO) headed by Yeldez Amer to start preparation for the upcoming FY'05 budget review and allocation according to the following timelines:

1) **All Effort Estimates**: Divisions should prepare a projection of all FY'05 effort requirements. These estimates should be based on current staff, normal replacements, and FY'04 approved new hires. An overtime projection for the year should be included as a lump sum for the division. **The deadline for these estimates is August 1, 2004.**

2) **Project Proposal Process:** Requests for new projects, new hires, capital equipment and ARIM, must be submitted by filling out one of the APS Project Proposal Forms following the guidelines for preparation which are now available on the APS Operations homepage. Prior to preparation, all proposals must be registered and pre-approved by Division Management. The review timeline is:



Ruzicka Presentation to UofC Review Committee

Presentations of Project Proposals

- A presentation is prepared with all proposals grouped by categories.
- Every presenter is allotted equal time (complete, continuing, and new).
- Over 100 project proposals submitted every year.

			436 (P)		S. Heald
	460-06	460-07			Q. Shen
				650	D. Haeffner

Friday, November 17, 2006

9:00 am-12:00 pm	Machine Obsolescence				
	FY06 Approved Continuing (7 min)		FY06 Pending or Resubmittal (7 min)	FY07 New (10 min)	Presenter
	Complete (5 min)	06 Status	07 Proposed Work		
			161 (P)		A. Nassiri
				781, 786, 775, 776, 800	
			486 (R)		
			494 (P), 132 (P)		G. Goeppner
				890	
			478 (P)		E. Swetin
				665, 656, 657	
				700	J. Gagliano
			475		C. Putnam
				797	B. Deriy
			468 (P)		T. Fors
				853	B. Yang
				605	B. Brajuskovic
1:30-2:30 pm	Machine Spares				
		487-06	487-07		A. Nassiri
				783	
			522 (R)		R. Lill
				732	C. Putnam
		505-06	505-07		C. Putnam
				711	C. Yao
2:30-5:15 pm	Computer Systems				
			557 (P)		G. Markovich
	535				S. Leatherman
				696, 697, 698, 699, 702	
			398 (R)		
			442 (R), 445 (R)		K. Sidorowicz
			447 (P)		D. Leibfritz
			448 (P)		D. Wallis
		446-06	446-07		K. Sidorowicz
			504 (P)		R. Laird
				634	P. Jemian
				619	B. Tieman
				889	L. Emery

Project Proposal Review, Prioritization, Ranking, and Approval

Div	Prop#	Proposal Title	Budget Status	Requestor	DD Rating	AIP Requested (K$)	AIP Allocated (K$)	Equipment Requested (K$)	Equipment Allocated (K$)	Operating Requested (K$)	Operating Allocated (K$)	New Hire Requested (K$)	New Hire Allocated (K$)	Priority	Rank
XSD	98-05	BM Front End for S21,23,2	ALD Final - Approved	DEN HARTOG, PAT	High			121.29	121.18					High	1
XSD	127-05	IDs, ID VCs and FEs for IXS and Nano CATS	ALD Final - Approved	DEN HARTOG, PAT	High			196.9	196.72					High	1.2
XSD	126-05	S11 BM FE	ALD Final - Approved	DEN HARTOG, PAT	Medium			218.54	218.34					High	1.2
AES	173-05	GE Amorphous Silicon Detector	ALD Final - Approved	FERNANDEZ, PATRICIA	High					168.09	168.66			High	1.3
XSD	277-05	XOR postdocs	ALD Final - Approved	LONG, GABRIELLE G.	High						220			High	2
XSD	275-05	new staffing for XOR	ALD Final - Approved	LONG, GABRIELLE G.	High						250			High	2
XSD	278-05 s	capital equipment funding for small and large instrumentation competitions	ALD Final - Approved	LONG, GABRIELLE G.	High			3002.74	1950					High	2
	278-1		Approved						1150					High	2
	278-2		Approved						800					High	2.19
XSD	225-05	In-house superconducting undulator research & measurement system development	ALD Final - Approved	MOOG, ELIZABETH	Medium		100			56.03				High	2
AES	197-05 s	Capital Equipment Request for the APS Detector Pool	ALD Final - Approved	FERNANDEZ, PATRICIA	Medium			333.27	320					High	2.1
	197-1		Approved						170					High	2.1
	197-2		Approved						150					High	2.2
AES	244-05	ICMS Phase 2	ALD Final - Approved	GORECKI, JANICE	High					447.55	223			High	2.11
ASD	154-05	Digital Manufacturing in APS	ALD Final - Approved	CHOI, PAUL	Medium					121.02	121.44			High	2.12
AES	239-05	Computer Room A/C Replacement	ALD Final - Approved	HISLOP, RICHARD D.	High	52.45	85.1	32.78						High	2.13
AES	241-05	MCR UPS Upgrade	ALD Final - Approved	SIDOROWICZ, KENNETH V.	High	207.61	207.42							High	2.14
AES	81-05	SR diag upgrade - Four-meter pinhole Camera	ALD Final - Approved	YANG, BINGXIN	High	127.18	127.7							High	2.16
ASD	36-05	Real-Time Video Distribution and Analysis Upgrade	ALD Final - Approved	SHOAF, STEVEN	High	109.27	109.2							High	2.17
ASD	205-05	PAR kicker power supply and magnet upgrade	ALD Final - Approved	PUTNAM, CEDRIC C.	High	185.76	185.59							High	2.18
XSD	116-05	Upgrade to Conventional Multipole Magnetic Measurement System	ALD Final - Approved	DOOSE, CHARLES L.	High	32.78			32.75					High	2.22
XSD	310-05	Build and test Nb3Sn-model superconducting undulator (SCU)	ALD Final - Approved	KUSTOM, ROBERT L.	High	218.54	356.55			20.73				High	2.23

As resources become available – more projects are authorized.

Management and Tracking of Approved Project Proposals

- All approved, prioritized, and ranked proposals are tracked for progress.
- Progress is measured in accordance with ALD tracking levels and standard requirements and deliverables.

Project Coordinator	Priority / Management Level	Design Review Requirements	Project Management Reporting Requirements	Status/Progress Reports: FY06 Projects	Status/Progress Reports: Continuing from FY06	Status/Progress Reports: New FY07
E. Moog	High / Level I		• Monthly • Quarterly • Annual	Quarterly • Q1		
P. Den Hartog	Medium / Level II		• Monthly • Annual			
R. Winans	High / Level I	Group Leader Level	• Monthly • Quarterly • Annual			
G. Markovich	High / Level I		• Monthly • Quarterly • Annual	Monthly • April 2006 • May 2006 • July 2006 • August 2006 • Sept. 2006 • October 2006 • Nov. 2006 • Dec. 2006 Quarterly • Q1 Annual		

Argonne NATIONAL LABORATORY

Advanced Photon Source

A U.S. Department of Energy, Office of Science, Office of Basic Energy Sciences national synchrotron x-ray research facility

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Argonne Home > Advanced Photon Source > .gov > Internal > Project Proposal > Approved Projects > 2006 >

Approved Projects

2007
2006
2005
2004

Approved FY 06 Project Proposals (as of September 12, 2006)

From Murray Gibson:

As of September 12, 2006, the following list of project proposals has been approved and can proceed with the allocated fu

Div	Pr#	Title	Approval Level	AIP Allocated ($K)	Operating & New Hires Allocated Cost ($K)	Capital Equipment Allocated ($K)	ALD Final Ranking
AES	446-06	Upgrades to Accelerator Control System	Approved 9/12/06	100.00	0.00	0.00	High
AES	480	Establish Beam Current Limits for High-Heat-Load Components	Approved 5/17/06	0.00	0.00	0.00	Medium
ASD	539	New Undulators for Sector 14	Approved 5/17/06	0.00	0.00	0.00	High
ASD	516	A Low-Cost Demonstration of Proof-of-Concept for Chirped Compression of X-rays	Approved 5/17/06	100.00	0.00	0.00	Medium
ASD	487-2	APS Klystrons Supply, Maintenance, and Upgrade Plan	Approved 5/2/06	0.00	0.00	875.00	High
AES	432	Replacement of GEN-2 PSS at 4-ID Beamline with GEN-3 PSS	Approved 4/7/06	0.00	70.00	0.00	High
XSD	460	Upgrade Beamline 32-ID for Dedicated Advanced Full-field X-ray Imaging (was Project # 325 in FY05)	Approved 3/7/06	160.00	0.00	0.00	High
XSD	425	ID Replacement for Sector 11	Approved 3/6/06	0.00	0.00	67.00	High
XSD	462	Special Insertion Device for XOR-1	Approved 3/6/06	0.00	0.00	67.00	High
				604.25	578.4	2143.91	

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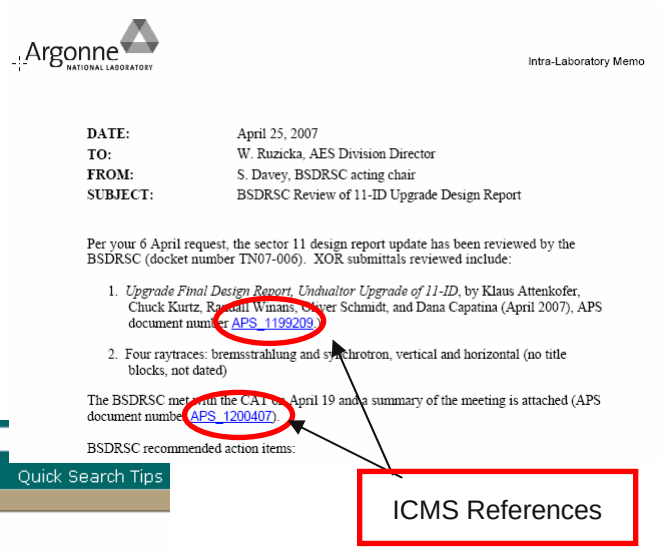
UofC Review Committee Quote

- The APS has an explicit approach for assessing and establishing priorities for projects in allocating budget from either equipment funds or accelerator improvement project (AIP) funds. This process also extends to the allocation of resources. Such explicit and openly accessible priorities focus efforts of management and resources at all levels within the organization and is noteworthy.

Ruzicka Presentation to UofC Review Committee

Integrated Content Management System (ICMS)

- The tool used to provide a centralized "electronic file" cabinet for all of APS's documents, such as engineering drawings, logbooks, procedures, and administrative files.
  - 10,000+ Administrative files
  - 45,000 Engineering drawings


Argonne NATIONAL LABORATORY

Intra-Laboratory Memo

DATE: April 25, 2007
TO: W. Ruzicka, AES Division Director
FROM: S. Davey, BSDRSC acting chair
SUBJECT: BSDRSC Review of 11-ID Upgrade Design Report

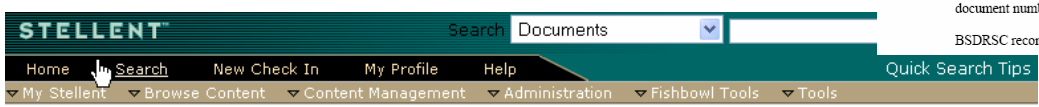
Per your 6 April request, the sector 11 design report update has been reviewed by the BSDRSC (docket number TN07-006). XOR submittals reviewed include:

1. *Upgrade Final Design Report, Undualtor Upgrade of 11-ID*, by Klaus Attenkofer, Chuck Kurtz, Randall Winans, Oliver Schmidt, and Dana Capatina (April 2007), APS document number APS_1199209.
2. Four raytraces: bremsstrahlung and synchrotron, vertical and horizontal (no title blocks, not dated)

The BSDRSC met with the CAT on April 19 and a summary of the meeting is attached (APS document number APS_1200407).

BSDRSC recommended action items:

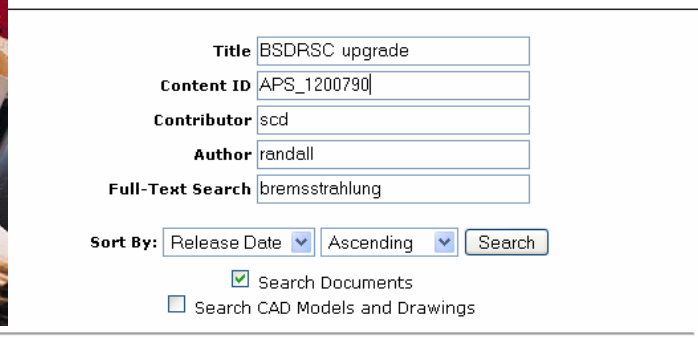
ICMS References



Argonne NATIONAL LABORATORY

Advanced Photon Source

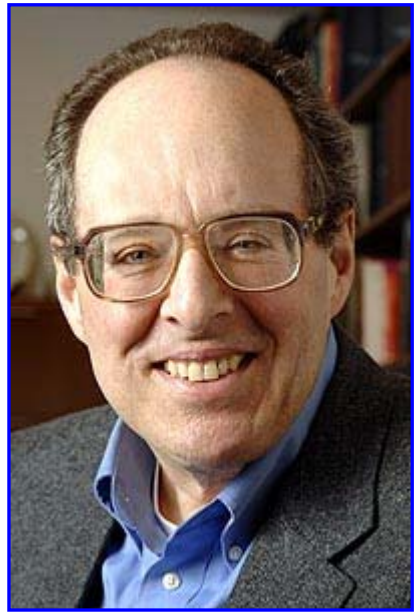
A U.S. Department of Energy, Office of Science,
Office of Basic Energy Science national synchrotron x-ray research facility



UofC Review Committee Quote

- The APS is moving to a comprehensive Integrated Content Management System (ICMS), a tool to provide a centralized electronic repository for all APS documents such as engineering drawings, logbooks, procedures, and administrative files. This centralization and cross referencing of all information gives evidence of conscious attempts to streamline operations and management of the APS.

Don Levy Quote



- Don Levy
  - Deputy Chair, UChicago LLC Board of Governors
  - Vice President for National Laboratories, UofC (Laboratory Director Bob Rosner's boss)

****

Dear Murray,

I enclose a copy of the report. I think you'll find it enjoyable reading since it is full of praise for your operation. The committee was really impressed by the quality of the operation at the APS. My congratulations.