

APS Upgrade Status



Jim Kerby

APS-U Forum
8 June 2017

Outline

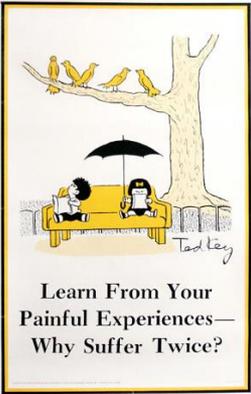
- Safety
- FY17 Budget
- Working Timeline

Always Practicing Safety is up to you!

PRIDE, it's an acronym...

What is PRIDE? I believe it is an acronym for:

- P**ersonal
- R**esponsibility
- I**n
- D**elivering
- E**xcellence



Cartoonist Ted Key said: "Every Job is a self-portrait of the person who did it. Autograph your work with excellence!"

Howard Newton said "People forget how fast you did a job – but they will remember how well you did it."

Have you ever have heard "Measure twice, cut once." Meaning that planning is faster than fixing

Regardless of the task, when you take the time for thoughtful, good work done with PRIDE people notice.

Executing work with a questioning attitude when (not if) the procedure or instructions are not clear to ensure it is done correctly, is demonstrating your PRIDE.

Look at the photos here and think about the work product that you see.

Did the lack of PRIDE result in new hazards? How much time do you think it would have taken to stop, regroup and execute the tasks properly? Do you think rework time will exceed the time needed to question, receive revised instruction or resolve the issue during the initial execution? Do you think the workers may have put themselves, or others, at risk when they were doing the work? Did the workers take PRIDE? Would you accept a work product like those pictured?

Safety and Quality begin with each individual working with PRIDE.



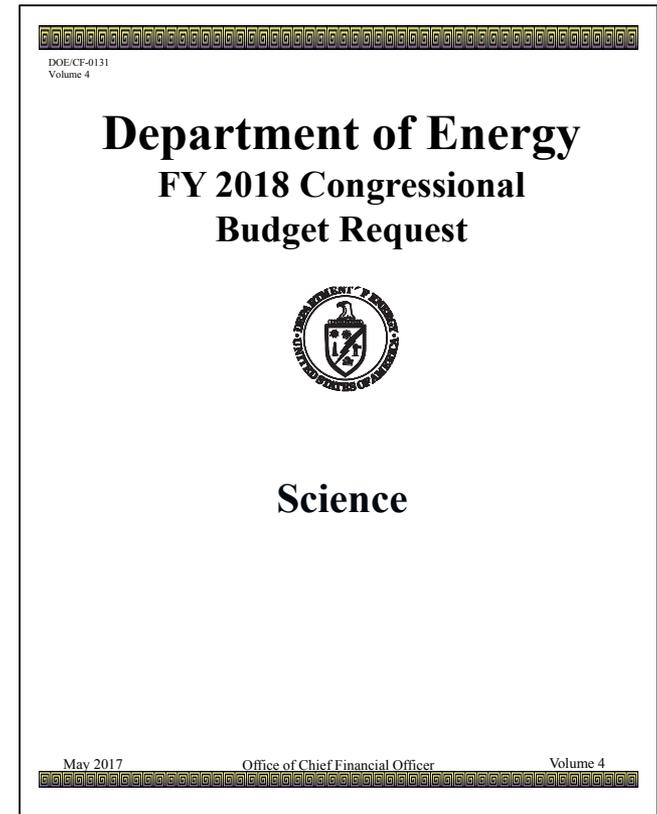
Copies available after forum

Budget

FY17 Appropriation – \$42.5M; FY18 PBR – \$20M

APS-U is specifically supported in this document

- High priority of BES in a very difficult environment (-16%)
 - Multiple other projects and programs did not fare nearly as well
- Funding profile moved out one year to fit available funds in BES
- Changed from Major Item of Equipment to Line Item Construction
 - Follows LCLS-II example
 - Benefit in stability, some burdens reduced, flexibility in civil construction



While just the start of the process, the PBR shows considerable support from the Office of Science for the APS-U

Working Timeline

- November
 - ✓ Complete beamline roadmapping
 - ✓ SAC Meeting Nov. 9-10
 - ✓ Complete Lattice/RF analyses and selection
- December
 - ✓ ESAC Meeting Dec. 1-2
 - ✓ Mini-MAC Meeting Dec. 14-15
 - ✓ Issue Enhancements call for proposals
- January
 - ✓ Begin follow-up prelim design reviews (as needed)
- February
 - ✓ Project Controls effort on LLP prep
- March
 - ✓ SAC Meeting
 - ✓ DOE “mini”-review
 - 🌀 Complete ES&H/QA doc updates
 - 🌀 **Specification/interface docs**
 - ✓ Enhancements Review
- April
 - ✓ **Beamline Workshops**
- May
 - *Work plan based on funding profile*
- June
 - **Complete PDR for ESAC, MAC review**
- July
 - ESAC July 19-21
 - MAC July 25-27
- August
 - Ops Triennial (Aug 15-17)
- September
 - **Deliver PDR (ANL FY17 Deliverable)**
- September / October →
 - *Directors Review (DOE Review – 5 weeks)*
 - *DOE Review (Q1FY18)*

Beamline Status

Feature Beamline Workshops Complete → Thanks to all for engagement!

- Functional Requirements developed
- Bottoms up cost estimating started; will replace costing model used at CD-1

Enhancement Prioritization Process Complete → Thanks to all for engagement!

- Notification letters out shortly
- Bottoms up cost estimating underway; will replace costing model used at CD-1

Combination provides a solid basis for preliminary scope leading to CD-2 review

Scope will continue to be refined as plans evolve

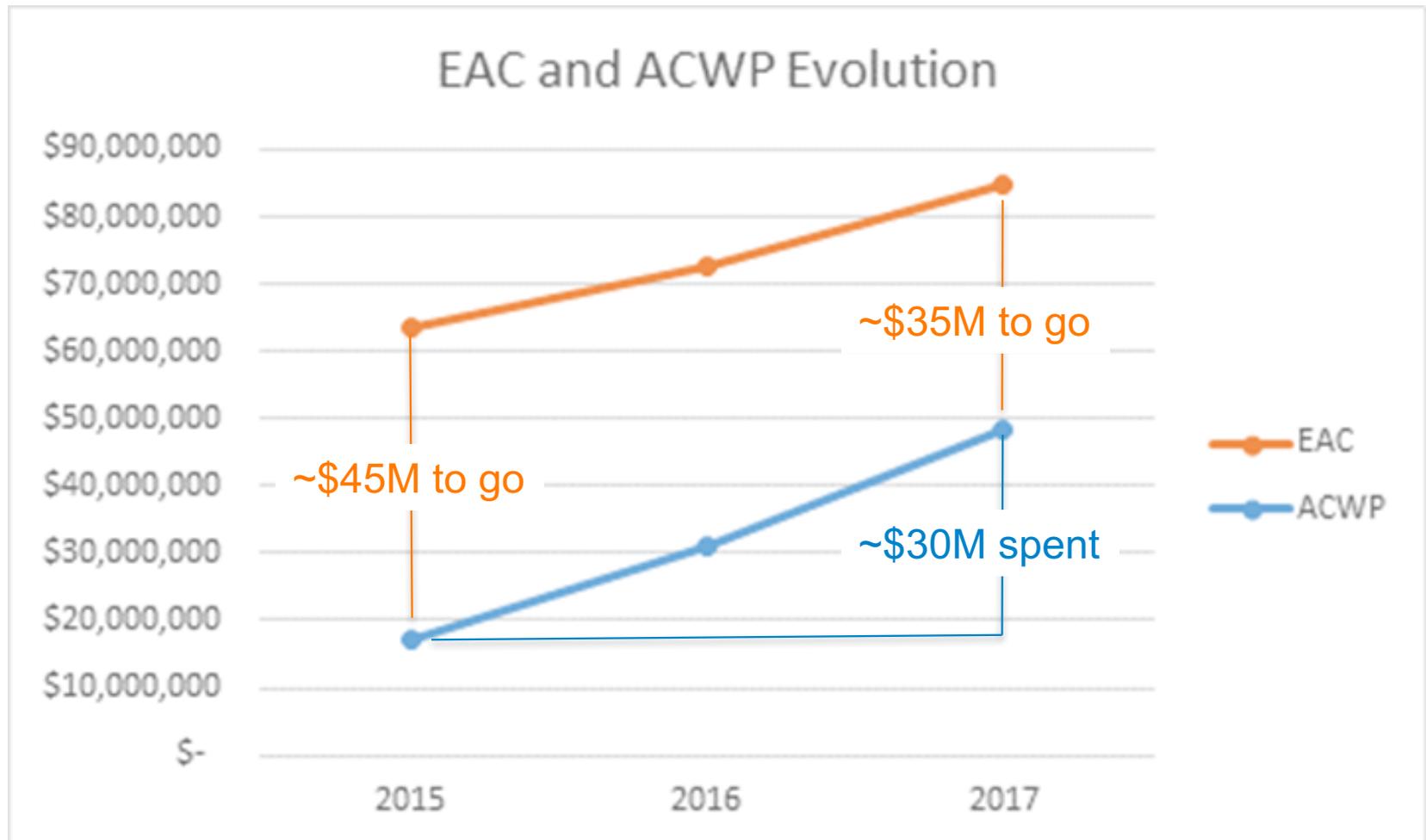
Preliminary Design Completion

Preliminary Design is NOT the end...it's only 60% complete.

- However it is very appropriate time to check we have a self consistent design, with minimal gaps, and that we are making conscious choices
- Write everything we know down. Put in a “TBD” if you don't know.
- Doing this now prevents more rework later...we want to get in front of the wave

Putting things under version control does NOT mean they can't be changed later. Revisions can, and will, be generated.

When Scope is not understood...



Preliminary Design Report

Argonne FY17 Deliverable is a complete, reviewed Preliminary Design Report for the APS Upgrade

Document will be reviewed in July by

- ESAC – July 19-21
 - Front Ends; Insertion Devices, Experimental Systems
- MAC – July 25-27
 - Accelerator Systems

Charge to each committee is to review the PDR

- Goal is to deliver the document at the end of June
- MAC will also review RF systems plan
- ESAC will review optics, detectors, and data strategies

The timeline and process will ensure we deliver an excellent document in September

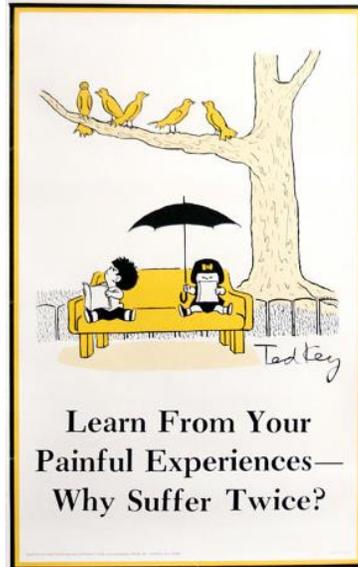
**Thank You for your
continued efforts and
attention!**

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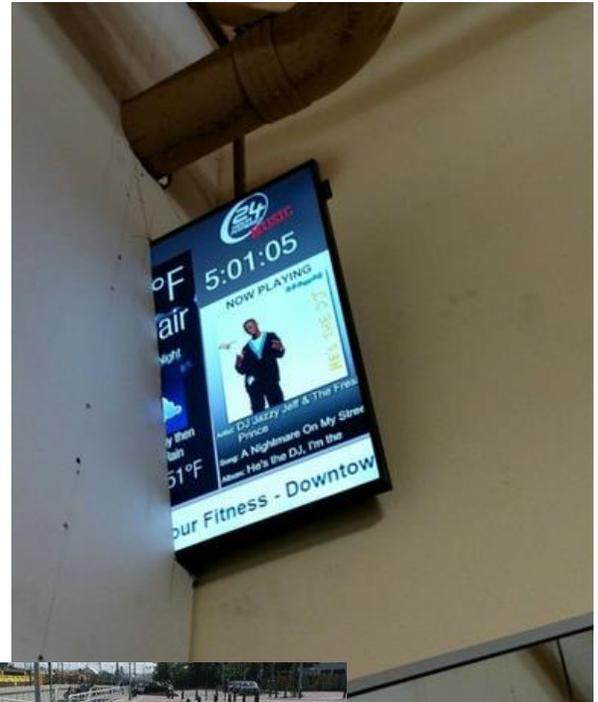
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Brookhaven National Laboratory, Deviation from Lockout/Tagout (LOTO) Protocol

On May 19, 2017, the 4-Bending Magnet (BM) Beamline staff and Vacuum Group staff discussed an issue regarding high-voltage connections to a shielded mini ion pump. Due to design flaws of the shielding enclosure, the standard high-voltage cable Safe Con connector would not fit in the enclosure. Possible solutions to the problem were discussed, including replacing the cable and fitting but remained undecided. On May 20, the beamline technician identified the cable and proceeded to cut the cable adjacent to where the cable entered the Lockout/Tagout (LOTO) device. The technician did not recognize that he was not authorized to perform work on this cable since it was under LOTO. When the technician finished, he sent an email to Beamline and Vacuum Group staff stating that the cable had been replaced and that the cable pull-sheet should be updated and the new cable terminated with a smaller connector and hi-potted. On May 23, the Electrical Engineering Group Leader was notified that the cable had been cut and that the LOTO was still in place at the time of cutting. The technician was not exposed to hazardous electrical energy.

Sandia National Laboratories Slip/Fall Leads to Fractured Right Wrist -

On May 22, 2017, an employee was changing clothes in the Building 996 restroom when they lost their footing on the smooth floor and fell. While falling, they shifted positions to avoid falling on furnishing, and in doing so, they used their right arm to stop the fall, causing some pain in the right wrist. The employee was seen at Sandia Medical and was diagnosed with a fractured right wrist. Management was notified and conducted an initial inquiry and safety assessment of the area. A fact-finding meeting was held.

Sandia National Laboratories - Ankle Fracture due to Misstep up to a Curb -

On May 31, 2017, an employee tripped on the edge of the sidewalk curb west of Building 856 resulting in a twisting of the right ankle. The employee called 911 for assistance and a Sandia ambulance responded, evaluated the ankle which was swollen, and transported the employee to a local hospital. The employee received results of an x-ray, which confirmed fractures to the right ankle. The employee reported the fracture to their manager who reported the fracture to the Division 3000 Environment Safety and Health Coordinator, who then made the other requisite notifications. The employee was given medication to help with the pain and sent home. The employee will need further evaluation by an orthopedic doctor when the swelling goes down to determine if additional treatment is needed.

Los Alamos National Laboratory Sulfur Hexafluoride Off-Gas during Disassembly of Electron Microscope

On May 16, 2017, five Logistics Maintenance and Site Services (LOG-MSS) personnel heard sulfur hexafluoride gas (SF6) being released during the disassembly of an electron microscope at Technical Area 3, Building 1698 in Lab C-135. The workers immediately paused work, evacuated the room and contacted the Logistics Superintendent (LS). The LS made appropriate notifications, went to the location, ensured access was restricted to Lab C-135 with postings and transported the workers to the Los Alamos National Laboratory Occupational Health Facility (OHF) for medical assessment. OHF personnel released all five workers with no restrictions. HAZMAT surveyed the room, released it back for normal use and removed the postings. The work will remain paused until a planning team can be convened to re-scope the work with Subject Matter Experts. A fact finding was held where LOG-MSS personnel stated that they had been unaware that the microscope contained SF6 and was under pressure. Additionally, the Chief Electrical Safety Officer stated that the microscope contained capacitors inside which had not been confirmed as de-energized.

Hanford Site - Employee Damaged Retina Requiring Surgery

On May 11, 2017, a Federal Engineers and Contractors employee working at a 100K Area dig site injured his right eye while donning safety glasses. The employee was taken to the Hanford medical provider for evaluation and returned to work without restrictions but instructed to see his private health care provider should the eye not improve. Over the course of the weekend the employee felt the eye was not improving and elected to see his private health care provider. The employee later underwent surgery to correct a detached retina from the injury.