

APS Upgrade Update

Long Shutdown Status: One Month In!

Jim Kerby
Director, APS Upgrade Project

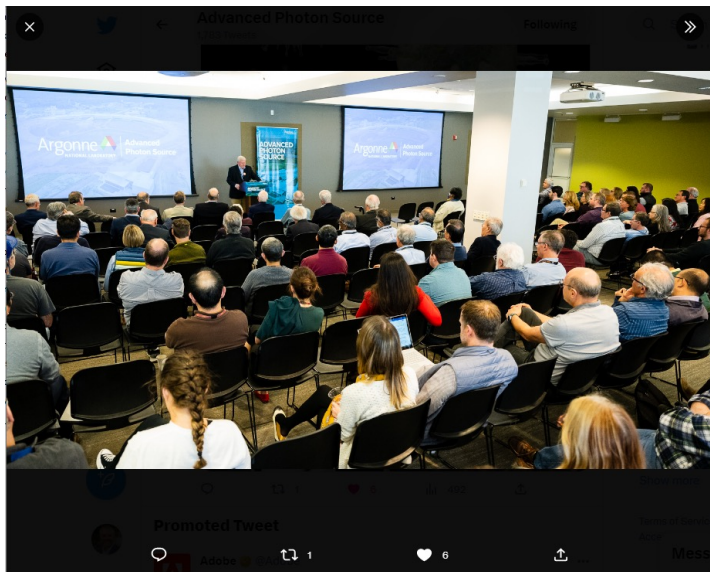


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LAST LIGHT CEREMONY



 **Advanced Photon Source**
@advancedphoton

Last week, we held a ceremony commemorating the official shutdown of the beam. Several speakers from the early days of the APS shared stories and reflected on its many scientific achievements. #APSUpgrade

11:25 AM · May 10, 2023 · 492 Views

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ADVANCED PHOTON SOURCE

A farewell to the particle accelerator that was my father's baby

As the rebuild of the Advanced Photon Source commences, a look at the craft of building giant scientific machines

4 MAY 2023 · 1:40 PM · BY [JENNIFER CHOI](#)



The Advanced Photon Source at Argonne National Laboratory is one of the brightest and most productive x-ray sources in the world. [APSDocs/utmsl/APS/crystal](#)

Last week technicians at Argonne National Laboratory began to disassemble a particle accelerator known as the Advanced Photon Source (APS), a ring 1.1 kilometers around that since 1995 has shone as one of the world's brightest sources of x-rays. It's hardly the end for the facility, which annually serves nearly 6000 scientists from myriad fields. Within a year, workers will replace the electron accelerator with a new one that will boost the intensity of the APS's output x-ray beams by a factor of 500. A major scientific facility will be rejuvenated. That's not unusual.

For me personally, however, the dismantling of the original APS evokes strong emotions. My father, [Yanqiang Cho](#), was an accelerator physicist who spent his entire career at Argonne, a Department of Energy (DOE)

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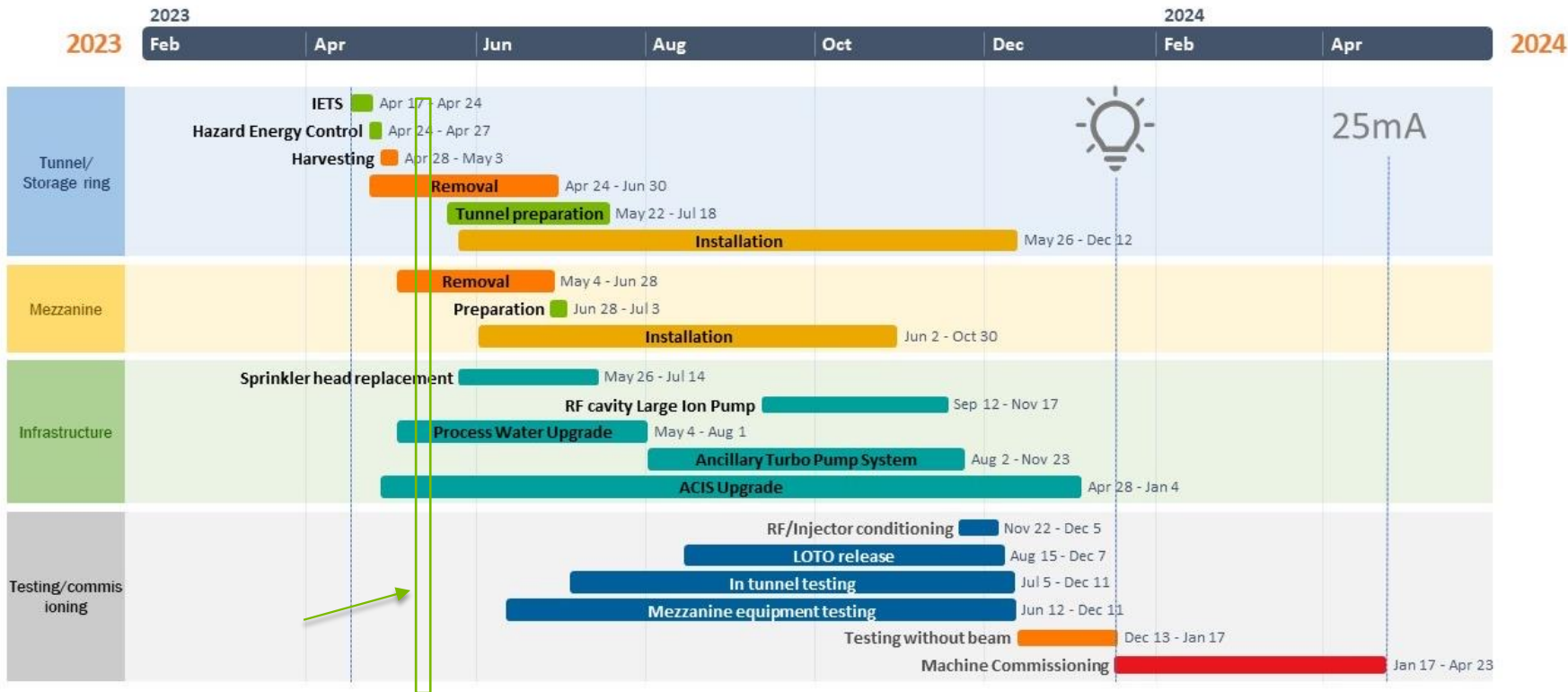
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BUILDING ON A STRONG FOUNDATION



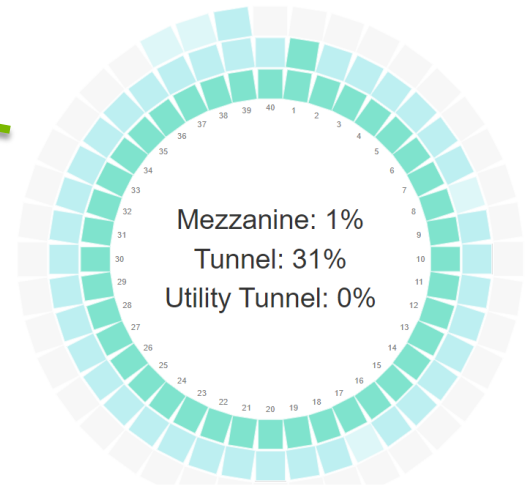
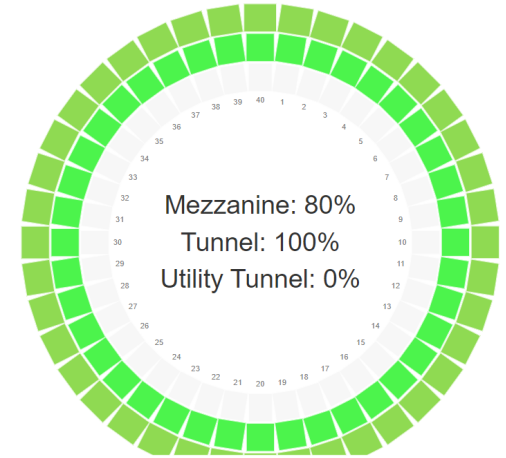
- The APS has been amazing for the past 28+ years
- The impact on people – here and elsewhere – is incredible
- The Upgrade builds on that legacy – and sets up the facility to continue to impact the world for decades to come

STORAGE RING SCHEDULE



ACCELERATOR STATUS

- HEC 80% complete (excluding phase 3)
 - Phase 1 done
 - Phase 2 in progress
 - Draining BTS headers and LOTO of Booster Valves
 - Removing vacuum chamber bakeout skids
 - LOTO required for copper water system modifications (done?)
 - Removal and Reconfiguration of SRVC aluminum
- Harvesting complete
- Removal about 30% complete
 - All ID devices & bases removed
 - Front-end disconnections completed
 - IDVC removal completed
 - 28 girders removed so far!
- Installation not started
- Test & checkout not started
- Commissioning not started



EXPERIMENTAL FLOOR STATUS

- FOE work to prepare for front end removal >99% complete
- Installation in progress
 - 4-ID utilities installation ongoing
 - 9-ID enclosure installation ongoing
 - Cleanup at various beamlines remains ongoing to prepare for installation



PROGRESS IN PICTURES



PROGRESS IN PICTURES



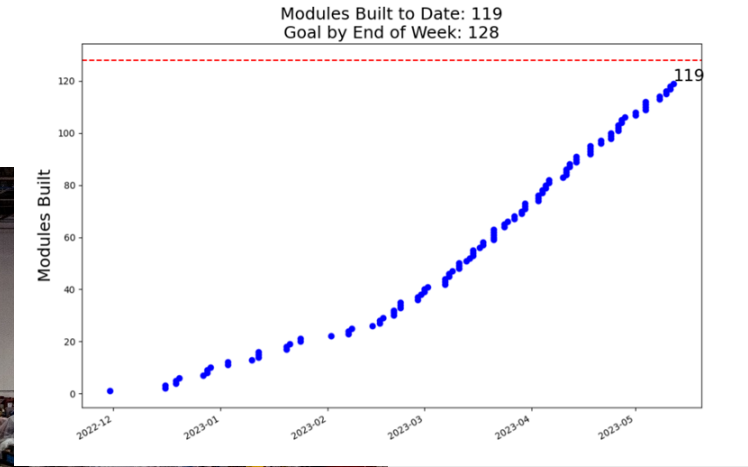
PROGRESS IN PICTURES



PROGRESS IN PICTURES



PROGRESS IN PICTURES



THE STUFF IS IMPRESSIVE...THE PEOPLE ARE BETTER

- Everything is changing –
 - What type of work is going on
 - Who is doing the work
 - How we are planning and doing the work
 - When we are doing the work
 - Where we are doing the work
- It has been amazing how the team has pulled together to make a process that works for all
 - Open feedback
 - Daily communication
 - Fixing what needs to be fixed



THANK YOU! NOTHING IS POSSIBLE WITHOUT A TEAM



Work Requests

Installation of the feature beamlines and upgrades to existing beamlines will require coordination across all areas. For all work not involving APS-U scope, as well as access and tour requests, use the Work Request System. For APS-U scope, use the APS-U Plan of the Week page.

- All beamline work that involves moving large equipment out of the sector, or involves the use of APS services, requires a work request. These requests will be considered on a case-by-case basis by PSC management.
- Access the Work Request System here: https://beam.aps.anl.gov/pls/apsweb/wam0002.wrq_system.
- Floor coordinators can help with work requests.

KEEPING US INFORMED

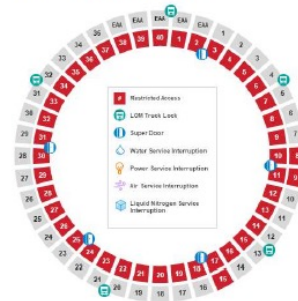
- Weekly update – if you aren't on the email list already, email pow@anl.gov
- Plan of the week is in the Box folder and attached to the email
- PLEASE ALWAYS WEAR APPROPRIATE PPE (AND REMIND YOUR COLLEAGUES!)
- We want you back, every day!



PLAN OF THE WEEK FOR MAY 15-21, 2023

SAFETY FIRST! WEAR THE PROPER PPE FOR THE JOB AT ALL TIMES! HARD HATS, SAFETY GLASSES, OVER-THE-ANKLE SAFETY BOOTS REQUIRED IN CONSTRUCTION AREAS

ACCESS LIMITATIONS



Construction areas requiring proper personal protective equipment (PPE):

- Storage ring
- Storage ring mezzanine
- Mechanical mezzanine – Portions of experiment floor main hallway may be blocked at times
- Experiment floor sectors 8, 9 and portions of sector 15. Pay attention to local postings

Please note that other work will be happening outside of these areas. Be alert and obey all construction signs and barriers. Please contact floor coordinators to schedule any experiment floor work.

QUESTIONS ABOUT THE PLAN OF THE WEEK?
EMAIL POW@ANL.GOV

SIGNIFICANT WORK ACTIVITIES

- Start removal of girders through the superdoors at storage ring sectors 3, 11, 25 and 31
- Removal of the RF cavity in storage ring sector 38
- Disconnect cables, racks on storage ring mezzanine
- Removal of water skirts and piping in Mechanical Mezzanine
- Maintenance in the LINAC, PAR, Booster, SR RF
- Construction activity continues at experiment floor sectors 8 and 9
- Modifications continue at beamline 15-ID
- Cleanup work, moving components throughout experiment floor
- Prepare for mirror system at sector 23
- Last front end components will be removed to allow front end exit tables to come out at sectors 5, 6, 14, 22 and 18

REMINDERS

- Infield traffic will increase this week. Ask for authorization before entering
- Keep all beamline sector aiseways clear to make way for work activities
- Slides for the morning toolbox talks are archived [in this folder](#)

THE FULL PLAN OF THE WEEK (POW) SPREADSHEET IS AVAILABLE IN [THIS BOX FOLDER](#)
DOWNLOAD THE [GUIDE TO THE SHUTDOWN](#)