

# APS ENGINEERING SUPPORT (AES) DIVISION - PRIORITIES

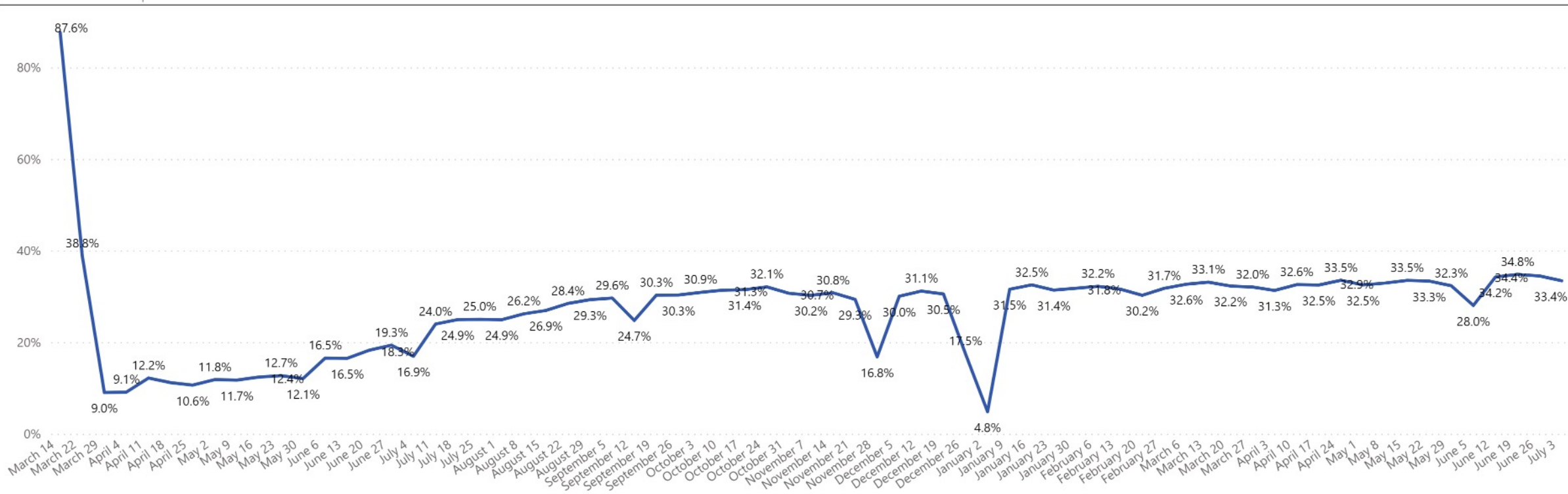
**JOHN CONNOLLY**  
Deputy ALD for PSC Operations  
Division Director, AES

**PSC All-Hands and Priority Meeting**  
July 28, 2021



# CURRENT STATE OF THE AES DIVISION

< Back to report | ON-SITE WORK HOURS



Percentage of Argonne hours logged as Regular and Onsite: March 14, 2020 to July 19, 2021

- The COVID pandemic has thoroughly challenged conventional work methods, especially since the APS thrives on and is built for a large, vibrant, onsite work force and user community.
- Return to current state of operations has been judicious and measured, and will continue until realization of a “new normal”.

# AES DIVISION STRATEGY

## Agile Support Role

Achieve safe, cost effective operations in meeting the mission of our sponsor  
Provide divisional resources to the APS Upgrade project to achieve planned milestones  
Promote an adaptive nature, in meeting the changing needs of users and facility operations

## Operational Excellence

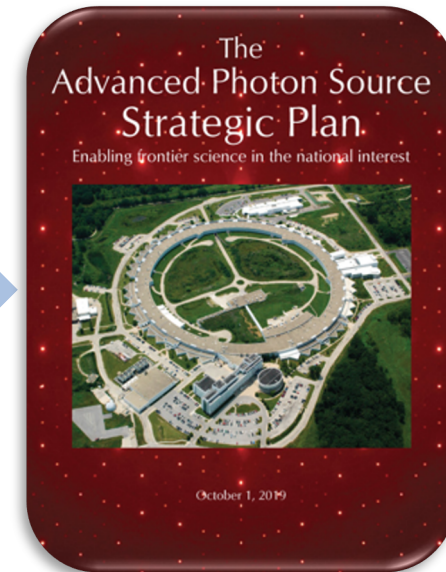
Continue to practice ISM principles with a heightened conviction towards safety and risk  
Manage APS assets in pursuit of highest possible machine reliability  
Adhere to core process fidelity and optimization to operate as one integrated facility

## Engineering Excellence

Endorse a concise and documented governance model with accountability  
Develop innovative and novel designs, questioning the status quo  
Enable engineers, designers, technicians with state-of-the-art toolsets

## Human Capital

Strong partnership with APS Human Resources team to promote continuous workforce development  
Develop a comprehensive and integrated set of talent management strategies  
Maintain an inventory of critical skills with associated actions to close skill gaps



# FY2021+ PRIORITIES

## ▪ Safety leadership

- Model PSC safety practices, e.g. pre-job briefs, high risk work reviews
- Reinforcement of pause and stop work authority and obligation to comply with called pause/stop
- Perform impactful observation/conversations, SMART Card targeted observ. and trending (resumption when pandemic operations permit)

## ▪ Recent safety event (July 22, 2021)

- DOE ORPS Level 2 recently filed on issue which started with mislabeled disconnects in Bldg 382, but became reportable after discovery of failure to control hazardous energy
- Informal investigation completed, extent of condition underway, causal analysis coming soon
- Number of issues but a focal problem was failure to perform ZVV when troubleshooting equipment.

# FY2021+ PRIORITIES

## ▪ Ensuring cost effective operations

- Continuing robust preventative maintenance cycles, completed on schedule
- Capture of high priority PMO projects, resourcing and funding through SMT, when required
  - Addressing larger facility-scale obsolescence and reliability concerns; standardization where possible, and those efforts needed in preparation for APS-U
- Overseeing execution of those required facility upgrades identified on APS 400-Area Infrastructure Master Plan with APS Site Operations and PMO personnel (Infra Svcs)
- Focus on financial performance to plan at division, group, individual and project level

# FY2021+ PRIORITIES

- **Divisional support of APS Upgrade Project**
  - AES is majority of matrixed support to APS-U
    - FY21 ERA of ~ 68 FTEs
  - AES will continue to have high involvement in APS-U milestone activities:
    - Design completion, procurement and vendor oversight
    - Receipt inspection and testing
    - Closing out APS-U and APS Ops gaps identified from 2021 Risk Workshop
    - Numerous work scopes in preparation for APS-U scheduled dark time
    - Future installation effort, commission and operation of new lattice, beamlines



*Bunch Lengthening System (BLS) cryo system plumbing in Bldg 420 (left and right)*



*Pfeiffer vacuum leak detector inspection (right)*



*Televac gauge test chamber (left)*

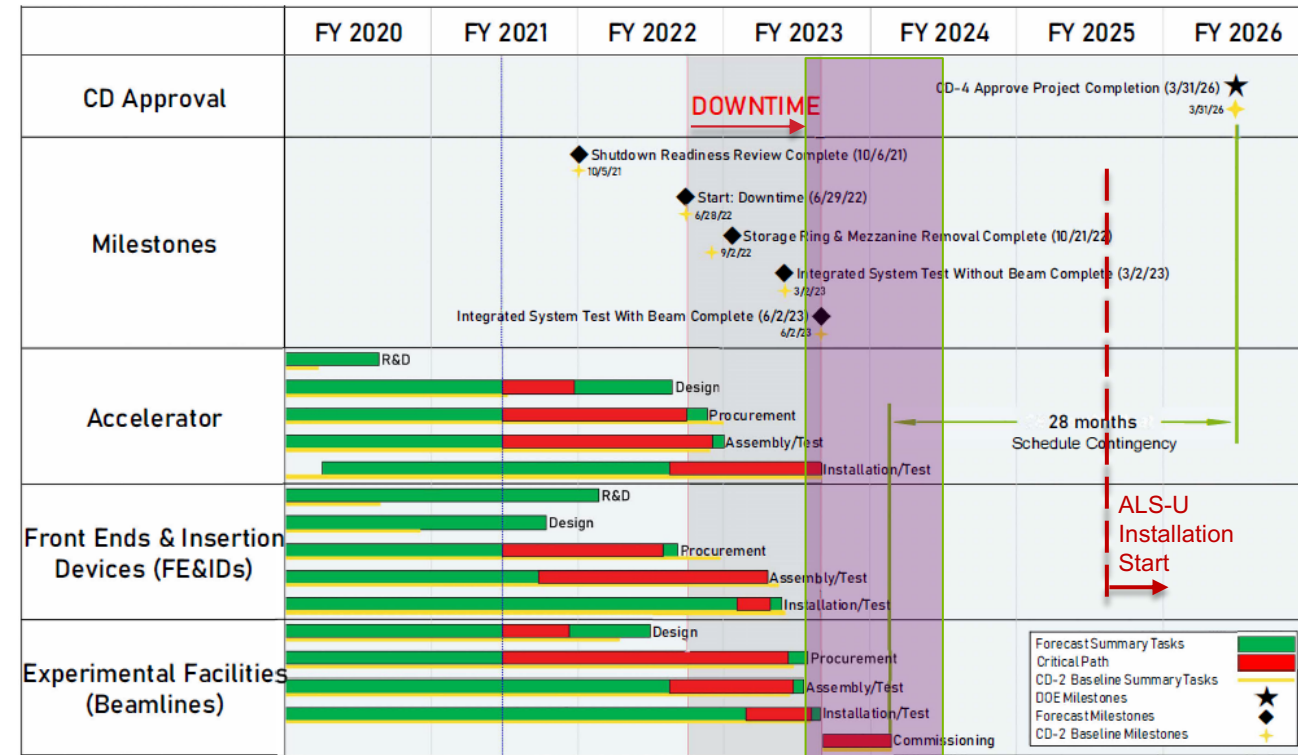
# FY2021+ PRIORITIES

- **Seamless performance on shutdowns as well as PSC project efforts**

- **5 shutdowns remaining before Apr 2023**

- Requires structured work planning and control through IPECC phases of a project

- Rigor in planning, risk and contingency identification
    - Accurate estimates to complete and, if awarded, unified execution, validation, closeout



APS-U schedule outline showing new downtime in Apr 2023

- APS-U scope (direct and indirect) will continue to increase in next and future shutdowns

# FY2021+ PRIORITIES

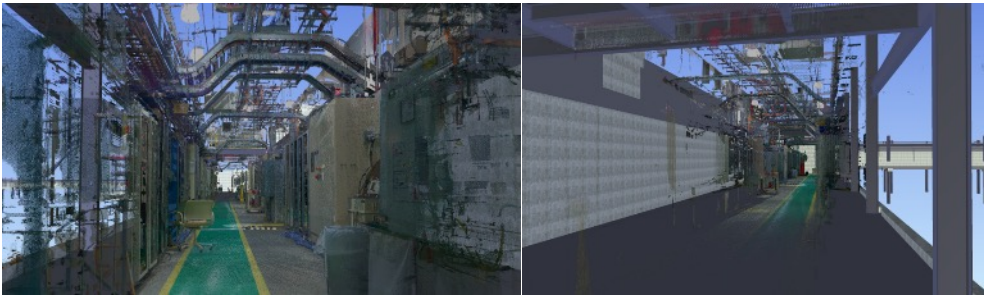
## ▪ Progress towards becoming Centers of Excellence: Operations and Engineering

- Real-time response to emergent conditions to assure machine reliability and uptime metrics as high as reasonably achievable before dark time
- Execution of PMO (SMT) projects to address APS-U readiness and obsolescence
- Core process adherence and continuous improvement
  - ServiceNow: Work request, group ticketing, shutdown planning, project proposal systems
  - Clear application of DOE Configuration Management (DOE-STD-1073) principles:
    - Management Assessment: Three year review planning already performed
    - Design Review: Adherence to Design Review process and Committee structure
    - Document Management: DMS use and convention
    - Configuration Control: [Integration of CDB into APS Ops](#); facility-wide configuration management
    - Readiness Reviews: Codifying Readiness Review, Commissioning Review and Transition to Operations processes more clearly for Operations
    - Work Planning & Control: Adherence to WCD creation/revision, approval and authorization in Aware

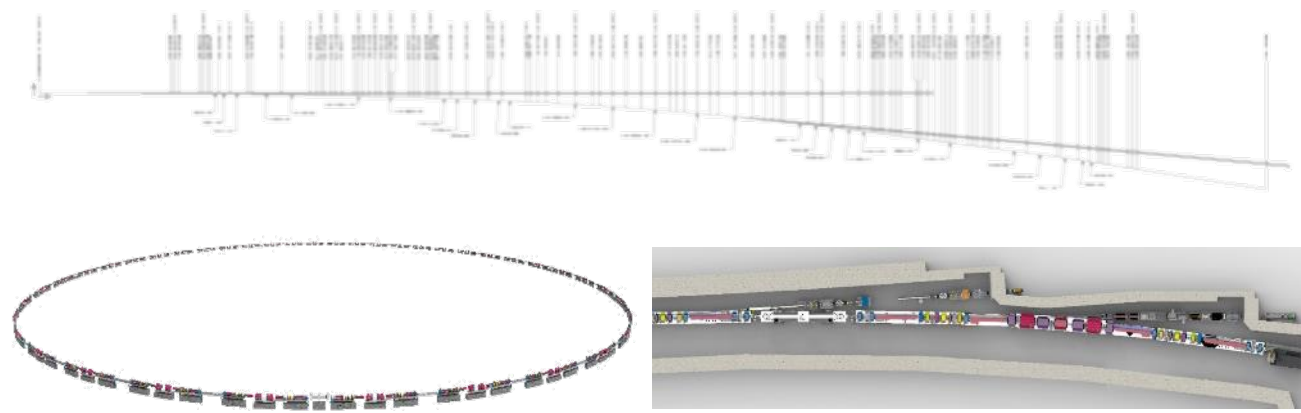


# FY2021+ PRIORITIES

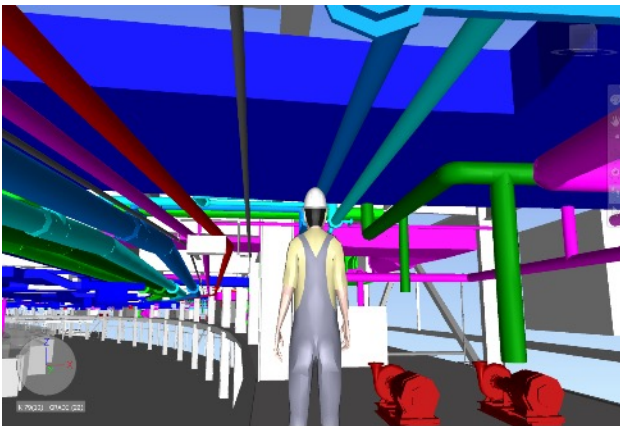
- **Progress towards becoming Centers of Excellence: Operations and Engineering**
  - Novel advances in state-of-the-art tool sets available to APS Operations and APS-U



Facility Scans Utilized for As-Built Conditions using REVIT



Lattice Layout / Storage Ring Skeleton Model / Single Sector Detail



Mechanical Mezzanine



3D Printing Laboratory (AES/DD)



# IMPACT ARGONNE AWARDS



- *Achieving Final Occupancy in Bldg 981 (APS-U)*  
Jeff Toeller, Elmie Peoples-Evans (APS-U)
- *Integrating the Mechanism for Collecting ORCiDs for APS and CNM Users*  
Jacki Flood (PSC), Xuli Wu
- *Updates to Component Database for Insertion Device Data (APS-U)*  
Jason Lerch, Nicholas Weir (ASD), Grace Avellar, Ethan Anliker, Megan Szubert
- *Construction of Power Supply Test Bench in Bldg 400A*  
Tony Puttkammer (ASD), Greg Markovich

Thank You

# IMPACT ARGONNE AWARDS



- *Extraordinary Inclusionary Behavior*

Mary Westbrook, Brian Pruitt, Clarence Clark, Vince Nobles, Ed Wrobel

- *Injection Septum (S:IS1) Replacement and Repair*

Rob Wright, Ralph Bechtold, Mike Bracken, John Dench, Ric Putnam, John Hoyt, John Pace, Brian Poncin, Guy Harris, Aaron Lopez, AJ Mattillion, Gina Mekler, Mike Henry (HP), Mike O'Connor (HP), Wendy VanWingeren, Tony Puttkammer (ASD), Iftikhar Abid (ASD), Joe Vanis (ASD), Ryan Roberts (FAC), Brian McFadden (FAC), Tim Clute, Deb Curry, Noel Gonzales, Wayne Michalek, Glenn Moonier

Thank You

# IMPACT ARGONNE AWARDS



- *Sector 19 Photon Shutter Replacement Response*

Tim Clute, Mark Martens, Bob Wilson, Wayne Michalek, Gina Mekler, AJ Mattillion, Guy Harris, Ralph Bechtold, Glenn Moonier, Brian Poncin, Mike Bracken, Scott Petersen, Jovo Zubovic, Dusan Banjanac, Mike Dwyer (FAC), Brian McFadden (FAC), Ryan Roberts (FAC), Joe Budz, Curt Forth, Mike Henry (HP), Shane Flood, Clay White

- *April 2021 APS Power Shutdown for Infield Domestic Water Fire Main Repairs*

George Doktorczyk, Greg Markovich, John Surdey (PMO), Clay White, Dave Kazenko, Geoff Pile, Alex Smith (FAC), Glenn Emerson (PMO), Brian Van Acker (PMO), Rogelio Camacho (FAC), Vincent Lockett (FAC), Glenn Moonier, Brian Pruitt

Thank You