



U.S. DEPARTMENT OF  
**ENERGY**



# F/H Laboratory Deactivation Project

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*Brief to SRS Citizens Advisory Board*

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# F/H Laboratory - Background

- **F/H Laboratory Purpose:**

Initially provided laboratory services for F-Area and H-Area facilities (e.g., Canyons and Tank Farms) in support of chemical separations

- **Laboratory Services Later Expanded to Support Additional Missions:**

- Special Heavy Water Analysis supporting the International Atomic Energy Agency (IAEA)
- Asbestos Analysis for SRS and DOE Complex Wide Decommission and Demolition (D&D) Activities
- Plutonium Metal Exchange Program with Los Alamos National Laboratory (LANL)
- Performed Testing for IAEA and LANL using Thermo Ionization Mass Spectrometry (TIMS) and Inductively Coupled Plasma with Mass Spectrometry (ICP-MS)

## F/H Laboratory Buildings:

- 772-F placed in service in mid-1950s – two-story structure (one above grade and one below grade)
- 772-1F placed in service in 1987 – one story with second floor supply HVAC room
- 772-4F placed in service in 1993 – Main exhaust ventilation building for 772-F
- Other support structures: Chiller Building/Cooling Tower; External Transformers; Standby Diesel Generator; External Storage Buildings





# F/H Laboratory – Layup and Deactivation (FY18 through FY23)

FY18

- **Project initiated to consolidate laboratory functions and transition analytical activities and personnel from F/H Laboratory to the Savannah River National Lab (SRNL) and B-Area Lab (BAL)**
  - Transitioned F/H Lab unused labs and containment units to “Layup” and began reducing hazardous materials, chemicals and radiological hazards

February  
2021

- **Completed transition of Analytical activities from F/H Laboratory to SRNL and BAL**
  - Analytical Operations no longer performed in F/H Laboratory

September  
2021

- **Approved Safe Shutdown and Deactivation Project Plan**
  - Prepares buildings for long-term Safe Storage with minimal non-radiological hazards and stable radiological hazards

October  
2021

- **DOE Authorized the Start of F/H Laboratory Deactivation**
  - Initiated deactivation of buildings 772-F and 772-1F. Deactivation Plan divided the buildings into Deactivation Zones, deactivating the higher hazard / radiologically complex zones first, working to lower hazard / less radiologically complex zones

March 2023

- **March 2023: Adjusted the deactivation plan to deviate from zone deactivation for FY24**
  - Determined shutting down steam and water services was a large cost savings



## F/H Laboratory – Layup and Deactivation (status at end of FY23)

- **Completed Deactivation of 71 of 71 Gloveboxes**
- **Completed Deactivation of 110 of 118 Radiohoods**
  - All contaminated Radiohoods have been deactivated
- **Completed Deactivation of 96 of 105 Radiobenches**
  - All contaminated Radiobenches have been deactivated
- **Completed Deactivation of 53 of 58 Labs / Rooms**
  - All contaminated labs, service chases and associated support rooms have been deactivated
- **Shutdown Exhaust Ventilation Systems**
  - Glovebox Exhaust
  - High Level Drain Exhaust
  - Shielded Cell Exhaust
  - Vacuum System supporting analytical equipment

Active Containment Units



Active Lab (Typical)





# F/H Laboratory – Layup and Deactivation (Before and After Deactivation Photos)

## Typical Lab Before/After Deactivation



## Cells Before/After Deactivation

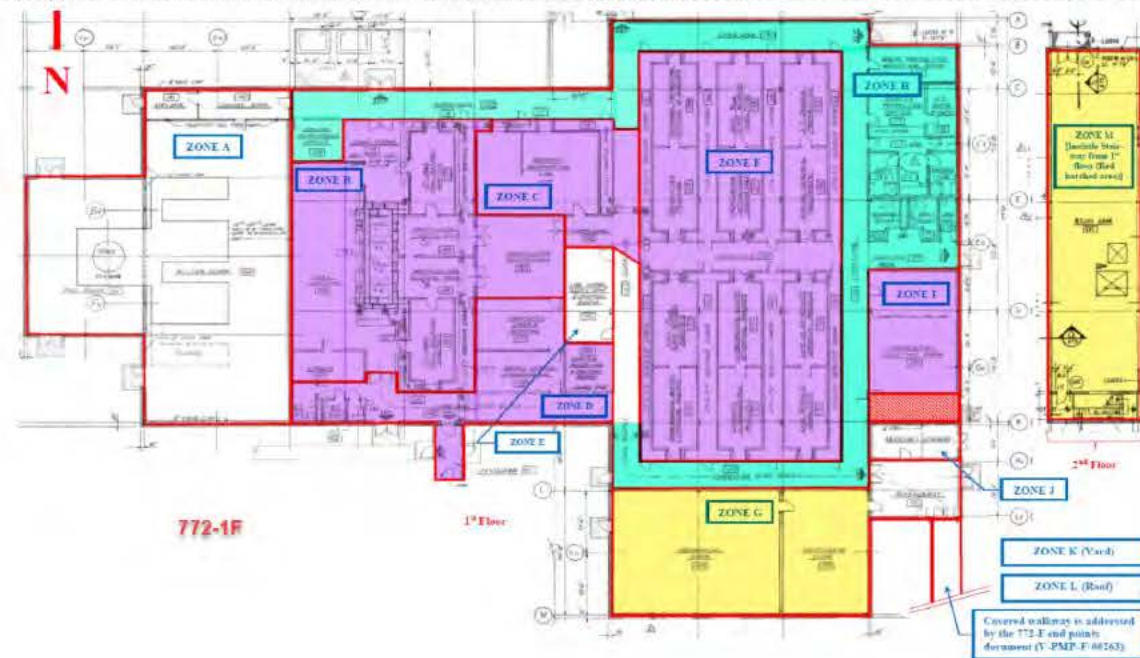
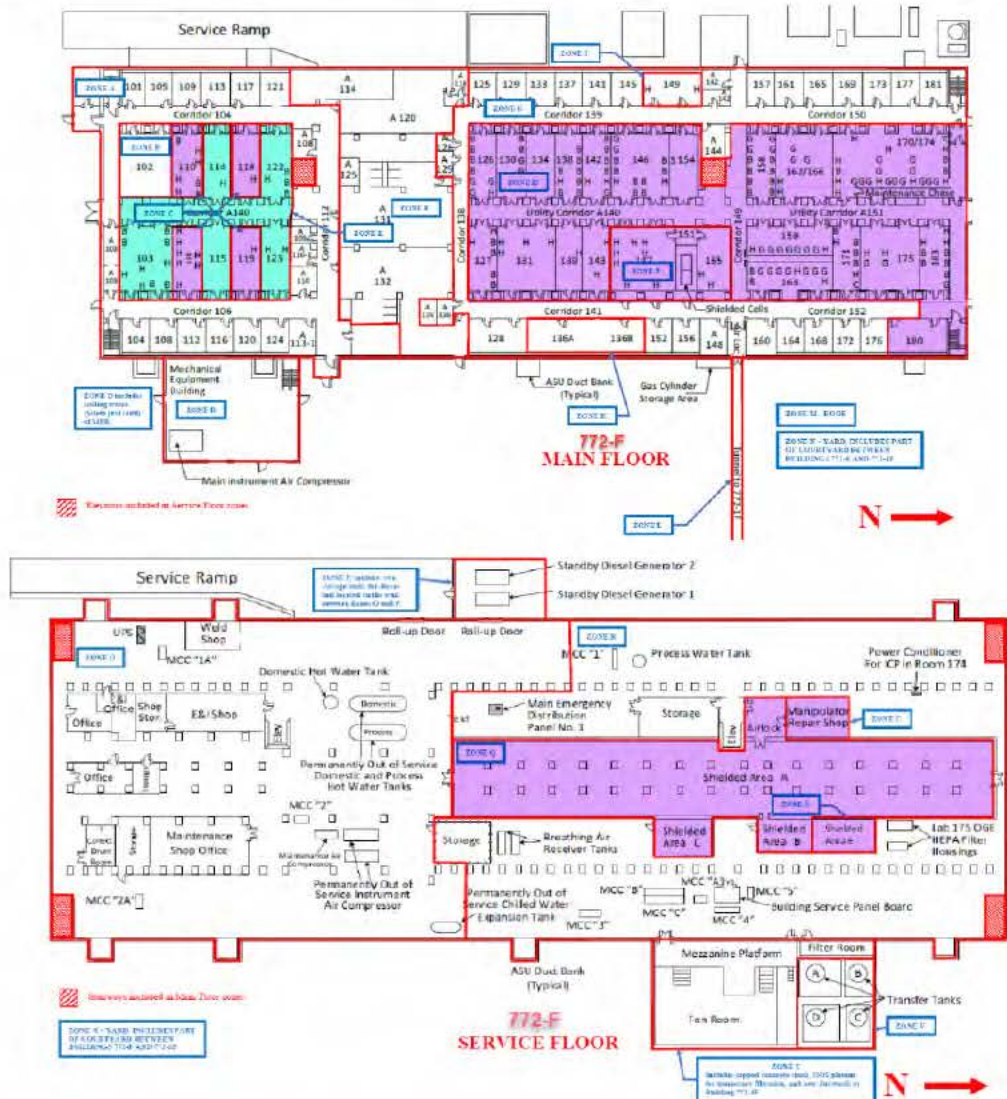


## Glovebox Before/After Deactivation





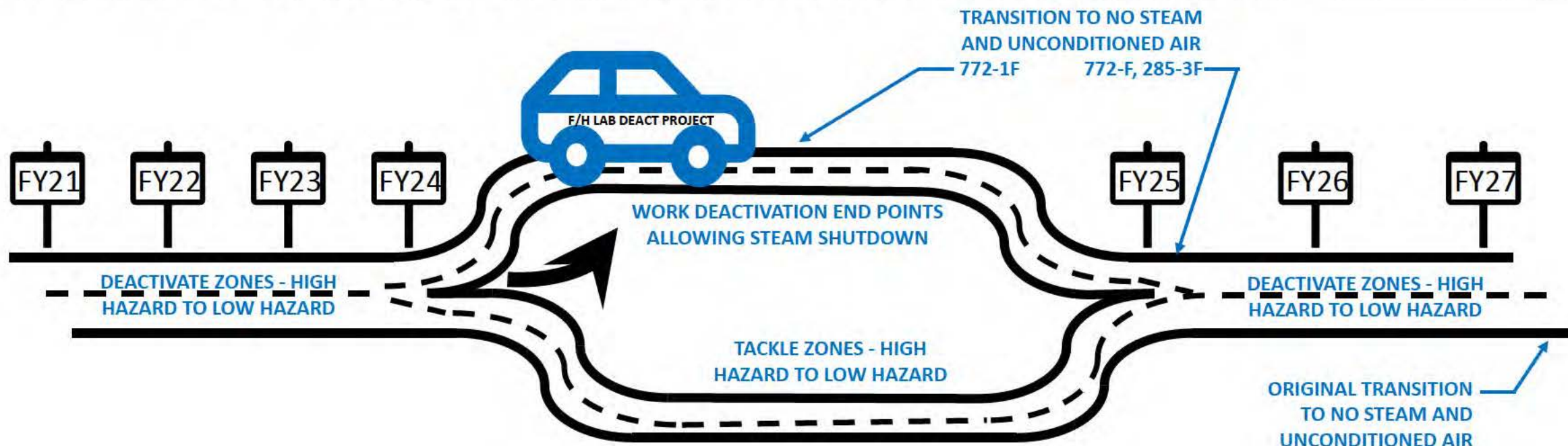
# January 2024 F/H Laboratory Deactivation Zone Maps



	Deactivation Complete
	Deactivation in Progress (FY24)
	FY24 Partial Deactivation



# FY24 “PIVOT” from Typical Zone Deactivation to Unconditioned Air



- Mid-FY23, Organized Task Team to Review Deactivation End Points & Evaluate S&M Costs
- Identified Steam Usage as Significant S&M Expense (~\$4M Annually)
- Determined Deactivation Could Proceed with No Steam, Unconditioned Air
- Made Decision to “PIVOT” to End Points Resulting in No Steam, and Unconditioned Air
- ~3-4M Annual Utility Savings Helps Fund Remaining Deactivation

# F/H Laboratory – Remaining Scope to Complete Deactivation (FY24 - FY27)

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## Building 772-1F

- Deactivate Radiological Buffer Area (RBA) corridors and rooms
- Isolate and drain steam and water services (Unconditioned Air)
- Shutdown supply HVAC units and reduce exhaust ventilation to one fan
- Deactivate diesel generator, fuel tank and electrical switchgear
- Deactivate remaining exhaust fan, HEPA filter room and stack
- Complete electrical and mechanical isolations

## Building 285-3F

- Isolate and drain steam and water services (Unconditioned Air)
- Remove hazardous materials (e.g., chemicals and refrigerant)
- Complete electrical and mechanical isolations

## Building 772-F

- Install remote monitoring project – allows equipment monitoring outside of F-Area
- Disposition remaining chemicals
- Deactivate five remaining clean labs and containment units
- Isolate and drain steam and water services (Unconditioned Air)
- Deactivate Control Room – follows remote monitoring project completion
- Deactivate office spaces, storage areas and maintenance shops
- Deactivate diesel generators, fuel tanks and electrical switchgear
- Shutdown supply HVAC units and reduce exhaust ventilation to one fan
- Complete electrical and mechanical isolations
- Disposition four waste tank cells for long term rainwater intrusion management