



U.S. DEPARTMENT OF  
**ENERGY**

# Legal Requirements and Commitments for Radioactive Waste Management at the Savannah River Site (SRS)

Presented to the SRS CAB Waste Management Committee

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# Acronyms

- **AEA** – Atomic Energy Act
- **CERCLA** – Comprehensive Environmental Response Compensation & Liability Act
- **FFA** – Federal Facility Agreement
- **HLW** – High Level Waste
- **LLW** – Low-Level Waste
- **RCRA** – Resource Conservation and Recovery Act
- **SCDHEC** – South Carolina Department of Health and Environmental Control
- **STP** – Site Treatment Plan
- **TRU** – Transuranic Waste
- **USC** – United States Code
- **WIPP** – Waste Isolation Pilot Plant (Carlsbad, NM)



# Purpose

1. Provide an overview of Federal law governing radioactive waste management at SRS
2. Provide an overview of Department of Energy (DOE) commitments regarding removal of radioactive wastes from SRS
3. Satisfy Waste Management Committee work-plan request



DOE manages all radioactive waste in a manner that is:

- Safe
- Technically sound
- Risk informed
- Compliant with regulations and commitments



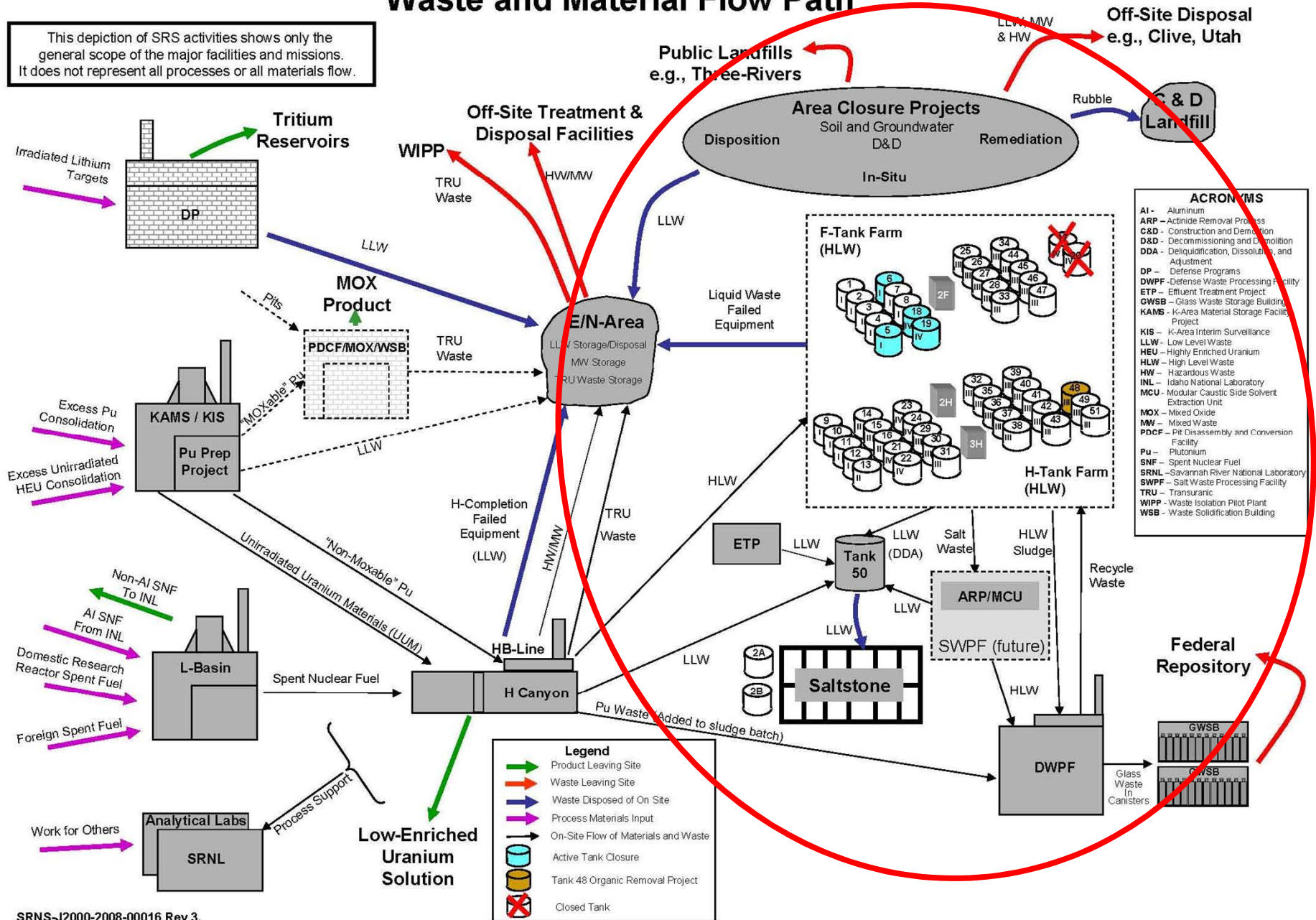
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# Savannah River Site Waste and Material Flow Path

This depiction of SRS activities shows only the general scope of the major facilities and missions. It does not represent all processes or all materials flow.



# Principal Federal Laws

- **Atomic Energy Act (AEA)** (42 USC 2011 – 2259 (1954))
  - Provides overall authority to DOE for management of defense radioactive materials and waste
  - Waste management authority is implemented under DOE Order 435.1, *“Radioactive Waste Management”*
  - AEA authority extends to all categories of radioactive waste, including
    - Low-Level Waste
    - Transuranic Waste
    - High-Level Waste
  - Chemically hazardous portion of “mixed” wastes are subject to regulation by SCDHEC under the Resource Conservation and Recovery Act (RCRA)
  - The AEA does not include any restrictions on waste that can be managed at SRS and does not pose any timeline for waste treatment





# Principal Federal Laws

- **Nuclear Waste Policy Act (NWPA)** (42 USC 10101 (1982))
  - Provides for the utilization of deep geologic repositories for the safe disposal of radioactive wastes, but does not establish a deadline
  - Assigns responsibility as follows:
    - DOE: Site, build and operate a repository for high level waste and spent nuclear fuel
    - Environmental Protection Agency (EPA): Establish human health standards for repository disposal
    - U.S. Nuclear Regulatory Commission: Licensing of repository
  - Amended in 1987 to limit repository site analysis to Yucca Mountain
  - License application submitted by DOE in 2008 & withdrawn in 2010
- President's *Blue Ribbon Commission on America's Nuclear Future* chartered to evaluate future alternatives for storage and disposal of high level waste and spent nuclear fuel
  - Report issued January 2012 and currently under evaluation by DOE



# Principal Federal Laws

- **National Defense Authorization Act of 2005** (Section 3116)
  - Established that waste residuals are not high-level waste if the Secretary of Energy determines, in consultation with the NRC, that they:
    - Do not require permanent isolation in a deep geologic repository
    - Have had highly radioactive radionuclides removed to the maximum extent practical
    - Meet certain concentration limits and disposal facility performance criteria
  - Requires disposal of residuals in accordance with a State approved permit or closure plan
  - This law enabled salt waste disposal and tank closure decisions at SRS
  - Provides NRC the authority to monitor disposed residuals
  - The law did not address sources of waste or establish any timelines



# Principal Federal Laws

- **Comprehensive Environmental Response and Liability Act (CERCLA)** (42 USC 9601 (1980))
  - Applies to hazardous substances defined by other environmental laws. For example, since the Safe Drinking Water Act covers certain radionuclides, they are covered by CERCLA
- **Resource Conservation & Recovery Act (RCRA)** (42 U.S.C. 6901 (1976))
  - Source, special nuclear, or by product material as defined by the AEA is specifically excluded from RCRA
- **WIPP Land Withdrawal Act** (Public Law 102-579 (1992), amended by Public Law 104-201 (1996))
  - Reserves WIPP for DOE transuranic (TRU) waste disposal and bans disposal of HLW and Spent Nuclear Fuel





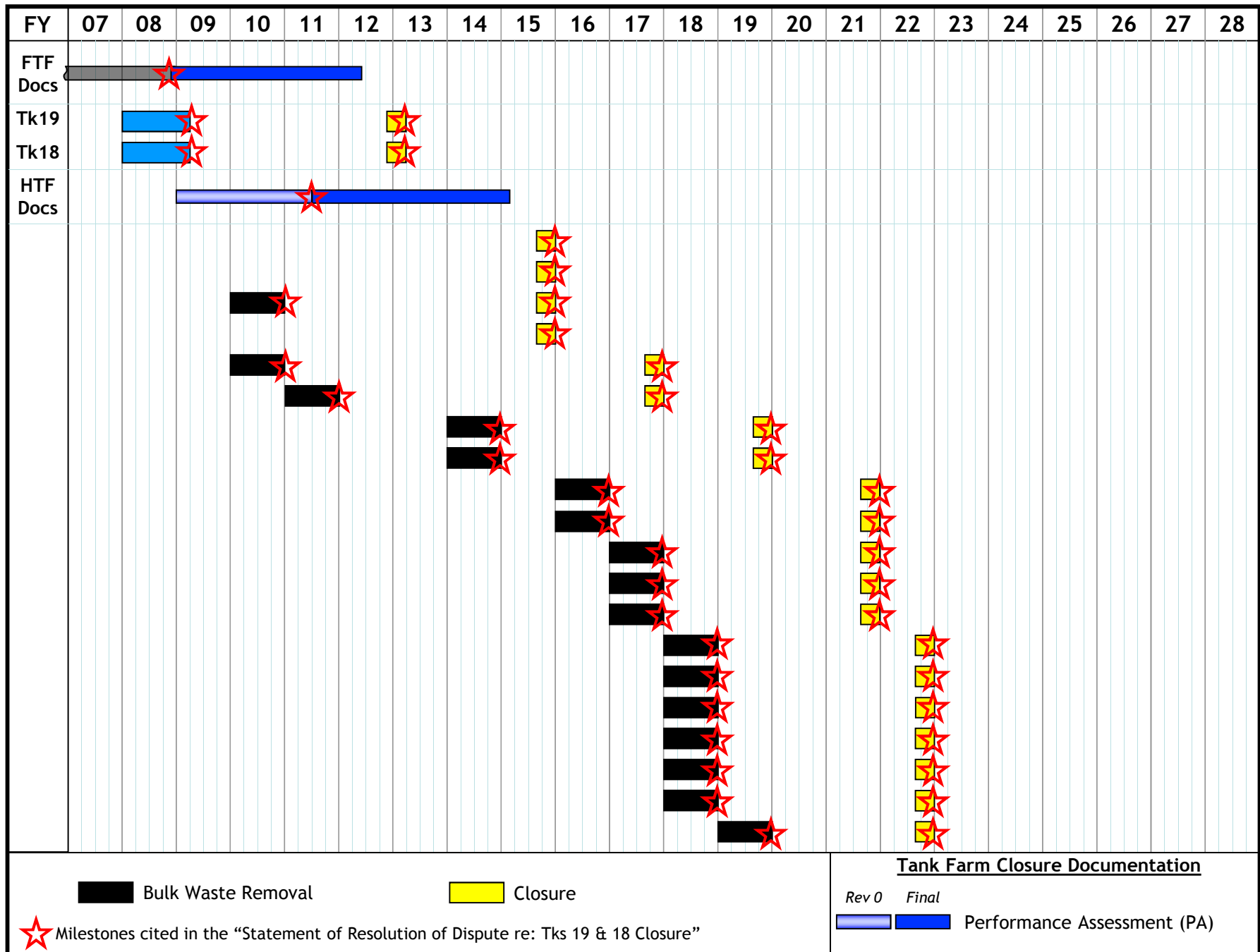
# Principal Commitments

## Federal Facility Agreement (FFA)

- 1993 agreement between DOE, EPA and SCDHEC
- Directs the integrated investigation and corrective/remedial actions at the Savannah River Site (SRS) for releases or potential releases of hazardous substances, hazardous wastes or hazardous constituents as defined by CERCLA and RCRA
- Establishes requirements for the prevention and mitigation of releases or potential releases at, or from the SRS liquid radioactive waste tank systems
- Establishes a procedural framework and schedule for developing, implementing, and monitoring appropriate response actions and tank closures



## FFA Tank Waste Removal Plan & Schedule



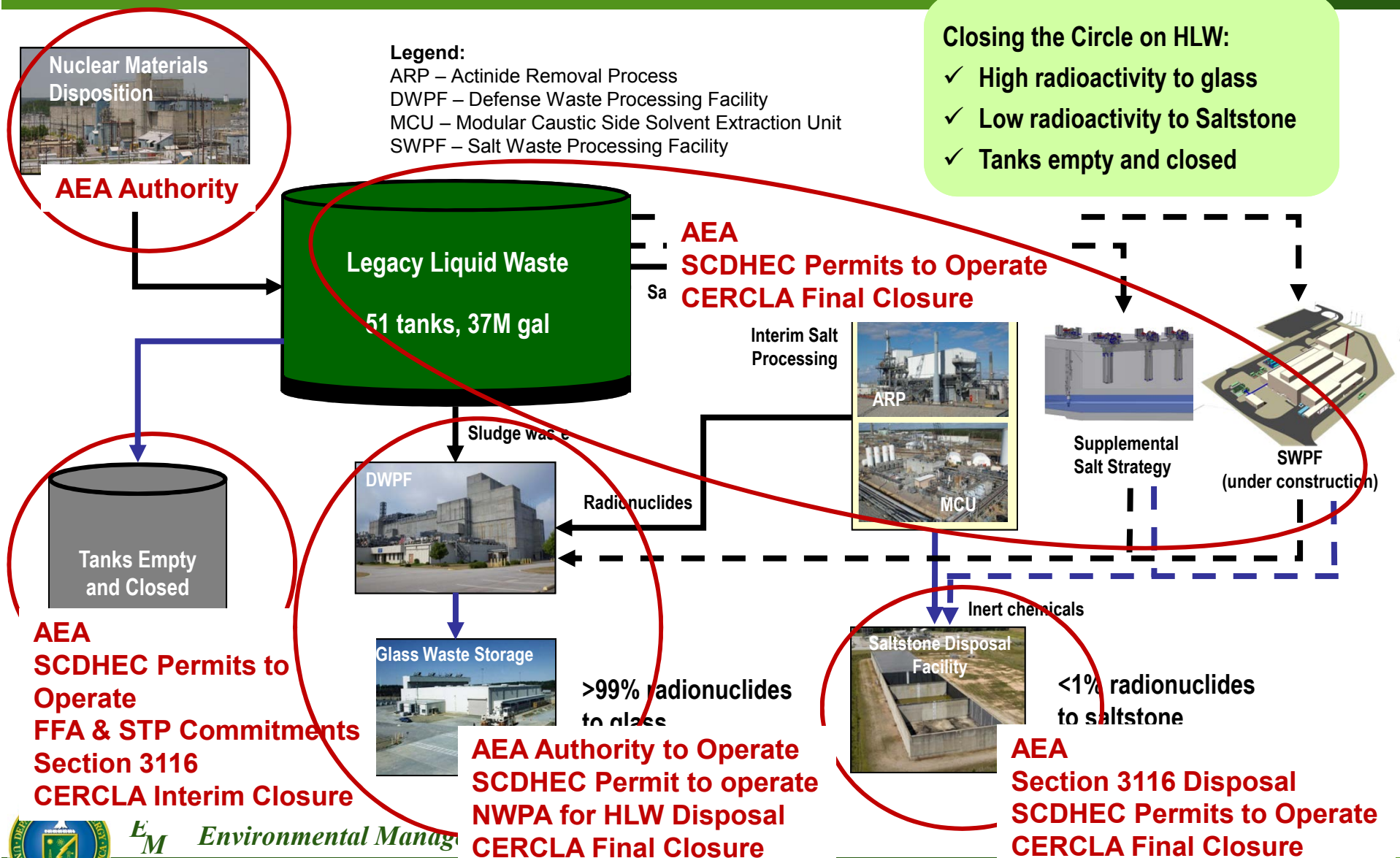
# Principal Commitments

## Site Treatment Plan (STP)

- Required by the **Federal Facility Compliance Act** (Public Law 102-368 (1993)) and SCDHEC Consent Order 95-22-HW
  - Established deadlines for treatment of SRS legacy “mixed” wastes (i.e., hazardous and radioactive) subject to land disposal restriction regulations
  - Requires obtaining SCDHEC approval prior to receipt of mixed waste from another DOE site
  - Almost all STP deadlines have now been accomplished. Remaining 2028 commitment for removal of High-Level Wastes from F- and H-Area Tanks



# SRS Liquid Waste Management



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# SRS Solid Waste Management



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13

# Summary

**SRS is fully compliant with all applicable laws, regulations and commitments and manages all radioactive wastes in a manner that is safe, technically sound and risk informed.**

- Completed disposition of legacy low-level, mixed low-level and hazardous wastes and keeping pace with new generation
- Nearing completion of legacy TRU waste disposition and will keep pace with future generation
- Making good progress in treating HLW, safely storing vitrified HLW canisters and disposing of low-level waste residuals.
- Meeting commitments in the FFA and maintaining the pace of treatment to meet STP commitment





# QUESTIONS?



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15

# BACK-UP SLIDES



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16

# Shared Goals & Values

LW

- Reduce operational risk and the risk of leaks to the environment by removing waste from tanks and closing the tanks
- Remove actinides from waste expeditiously since they impact on the environment most significantly if a leak occurs
- Maximize amount of waste ready for disposal in deep geologic repository. Make significant effort to ensure maximum amount of long-lived radionuclides are disposed in a deep geologic repository
- Remove as much cesium as practical from salt waste and dispose in parallel with vitrified sludge – avoid having cesium only waste when sludge vitrification is complete
- Limit disposal of radioactive waste onsite at SRS so that residual radioactivity is as low as reasonably achievable



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17

# Shared Goals & Values (cont.)

SRIT

- The Salt Waste Processing Facility construction and startup should meet regulatory schedules
- Legacy TRU waste shipping should continue at present pace or be accelerated
- Residual radioactivity & chemical contamination should be minimized
- SRS is not an ideal site for new disposal activities
- DOE should provide early coordination of waste/material movement with affected states
- Closing liquid waste tanks and finishing the reactor areas and operational areas that are no longer in use will allow for future funding to be focused on remaining work



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18