



U.S. DEPARTMENT OF  
**ENERGY**



# Overview of the Savannah River Site Nuclear Materials System Plan

**Maxcine Maxted**

Nuclear Materials Program Manager

*Citizens Advisory Board*

*January 23, 2018*

## Purpose

- To provide an overview the Nuclear Materials System Plan developed to assist in the strategic evaluation of storage and disposition of nuclear materials at SRS.

H-Area



K-Area



L-Area



235-F

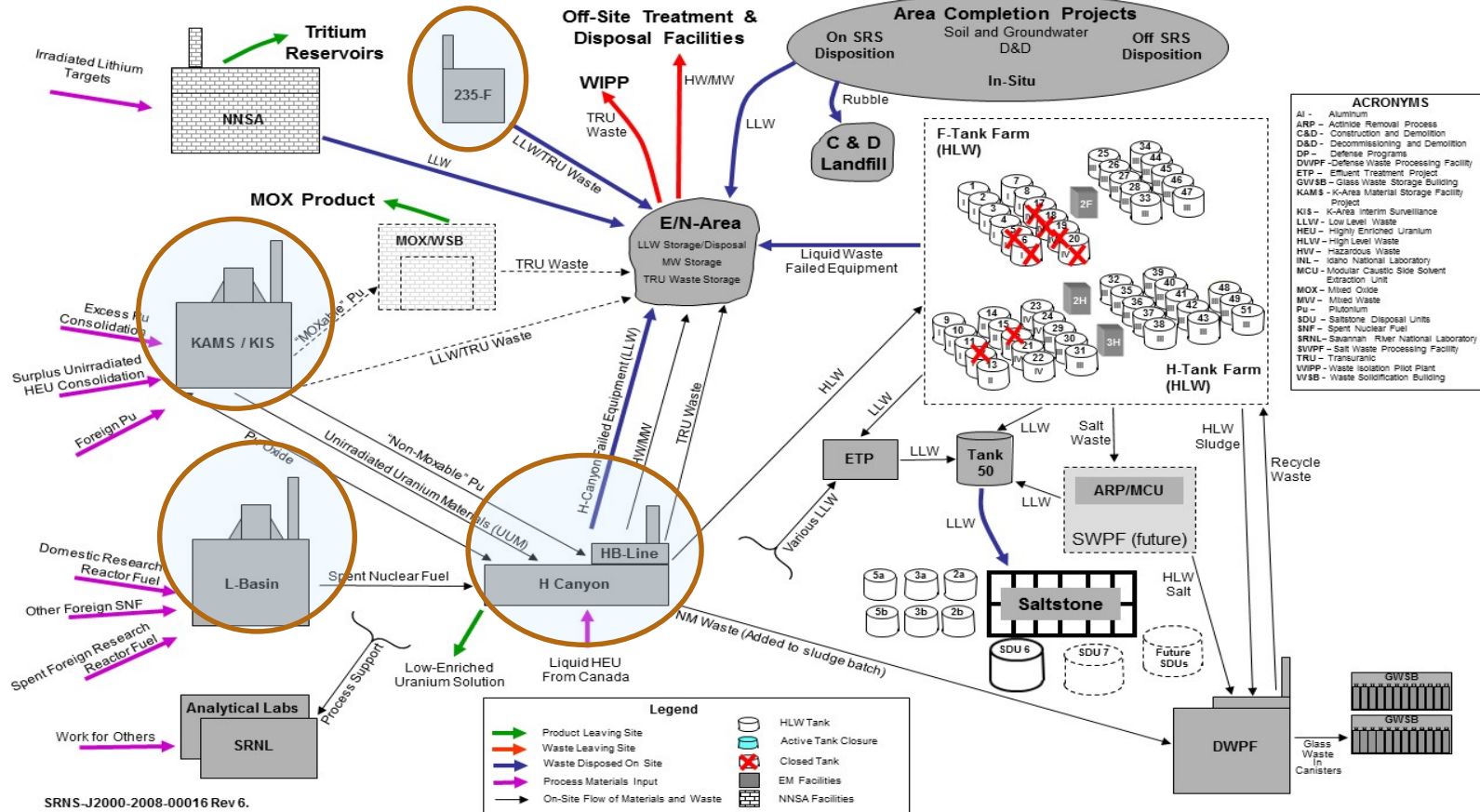


# Savannah River Site Waste and Material Flow Path

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.

Areas specific to the presentation

Off-Site Disposal  
e.g., Clive, Utah,  
Three Rivers Landfill





# Nuclear Materials System Plan

- Consists of two volumes:
  - Volume 1 dedicated to Spent Nuclear Fuel, Enriched Uranium and Heavy Water
  - Volume 2 dedicated to Surplus Plutonium



K-Area Plutonium Storage



L-Basin Spent Nuclear Fuel racks

## 2018 Nuclear Materials System Plan - Purpose

---

- **Lays out Goals for the SRS Nuclear Material Program:**
  - Continue storing and processing nuclear materials in a safe and environmentally sound manner
  - Recover and downblend enriched uranium from research reactor fuel for reuse in Tennessee Valley Authority (TVA) reactors
  - Maintain adequate storage space in nuclear material facilities to allow for receipt and storage of shipments deemed necessary by the Department
  - Complete the de-inventory of all SNF from L-Area
  - Minimize quantities of High Level Liquid Waste generated as low as practical to stay within the planning limits of the SRS Liquid Waste Disposition System Plan
  - Reduce the costs of continuing operations, surveillance, and maintenance of EM-owned facilities
- **Identifies risks to the completion of SRS NM Program:**
  - Aging facilities and infrastructure
  - Maintaining a qualified workforce
  - Adequate Funding to support the execution of the SRS NM System Plan.

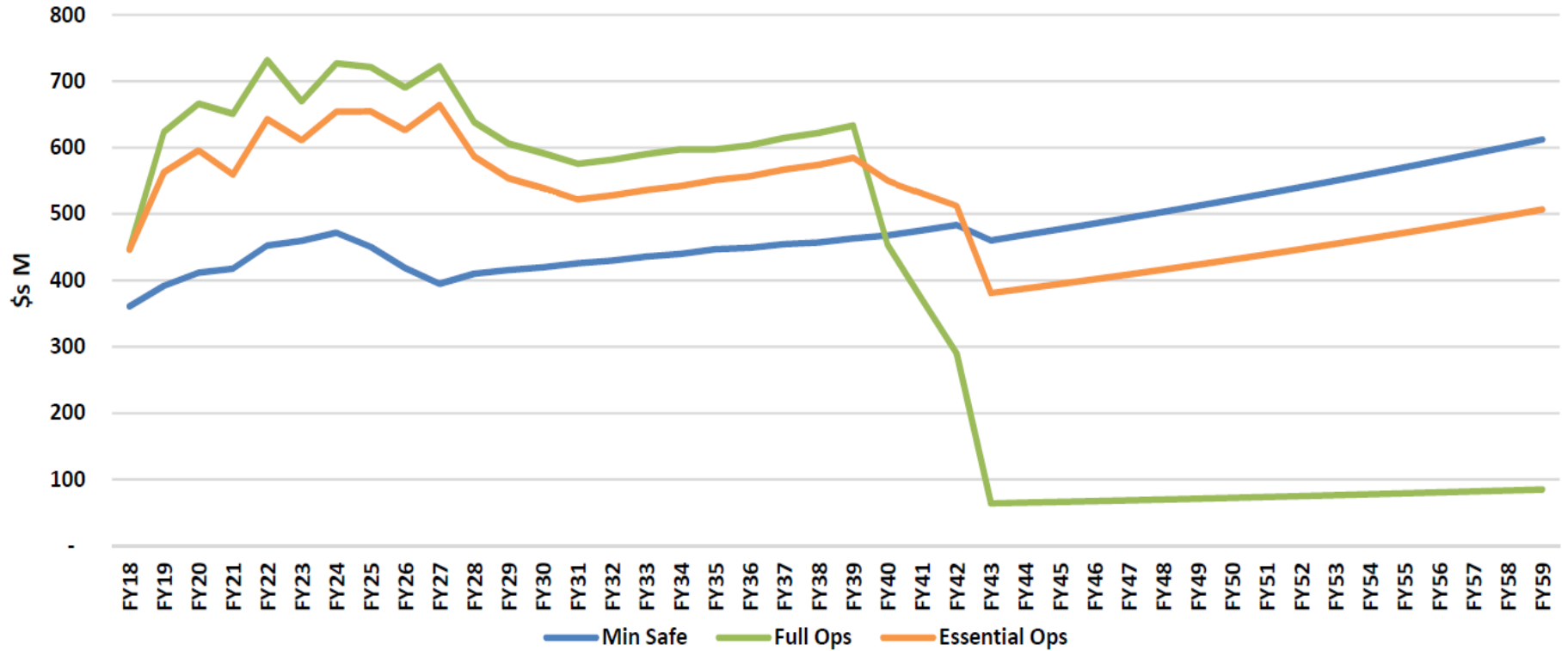
## 2018 Nuclear Materials System Plan - Improvements

---

- Documents inputs and assumptions used in the System Plan
- Identifies the needs (regarding facility requirements/throughputs and personnel needs)
- Provides a tool for scenario evaluation on a real time basis using a computer model versus the manpower intensive method used in the past for Nuclear Materials
  - Still requires evaluation of the model outcome to ensure it is feasible
- Provides a lifecycle look at the Nuclear Materials program based on various options:
  - Minimum safe scenario
  - Essential Operations: current integrated lifecycle estimate with H-Canyon processing the Amended Record of Decision fuel only (1000 bundles and 200 High Flux Isotope Reactor Cores) then proceeding with dry storage of remaining fuel
  - Full Operations: processes all the aluminum based SNF and no dry storage at SRS.

## Projected NM planning costs through FY2059

EMO System Plan Life Cycle Cost Estimate (H, K, L, E and F Areas)



## Summary

---

- SRS NM System Plan provides a more detailed understanding of the NM mission and requirements for execution
- Provides a standard set of assumptions/inputs
- Provides a management tool in evaluating strategic decisions