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 of the Nuclear Materials System Plan developed to assist in the strategic evaluation of storage and disposition of nuclear materials at SRS.
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](image1)

![L-Basin Spent Nuclear Fuel racks](image2)
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)

- Min Safe
- Full Ops
- Essential Ops

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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