



U.S. DEPARTMENT OF
ENERGY

OFFICE OF
**ENVIRONMENTAL
MANAGEMENT**

Projected Receipts of Domestic and Foreign Research Reactor Fuels

Maxcine Maxted

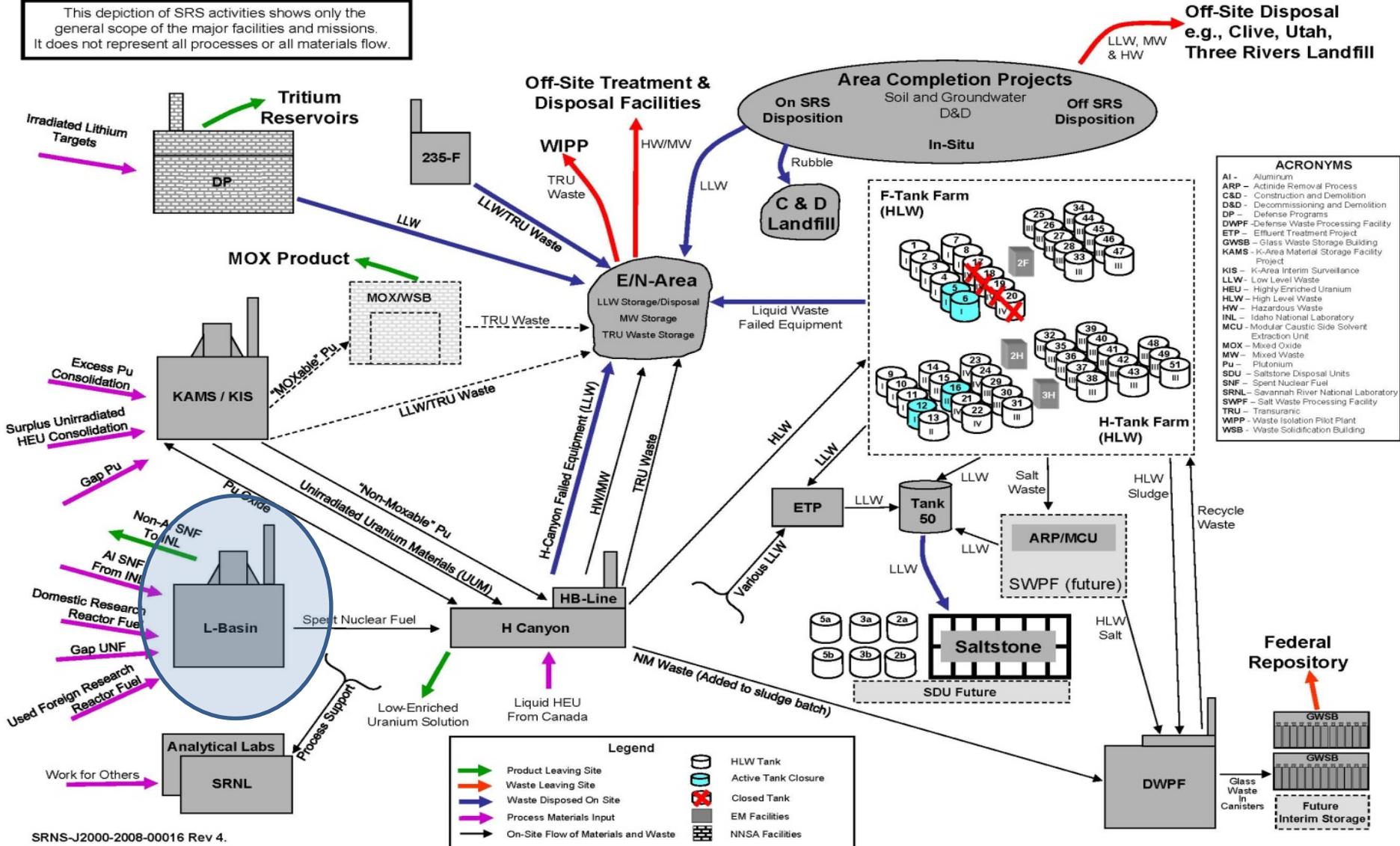
Used Nuclear Fuel Program Manager
DOE-Savannah River

Nuclear Materials Committee
December 10, 2013

- To provide information on future fuel receipts which fulfills a Nuclear Materials Programs work plan item.
- Discuss the Principles of Understanding between the State of South Carolina and DOE. This is an action from the response to recommendation #300 subpart #2.

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.



SRNS-J2000-2008-00016 Rev 4.

DOE – Department of Energy

DRR – Domestic Research Reactor

FRR – Foreign Research Reactor

HFIR – High Flux Isotope Reactor

MIT – Massachusetts Institute of Technology

MURR – Missouri University Research Reactor

SC – South Carolina

SCDHEC – South Carolina Department of Environmental Control

SRE – Sodium Reactor Experiment fuel

SRS – Savannah River Site

UNF – Used Nuclear Fuel

Current inventory as of 9/30/13

| | FY 2012 | FY 2013 |
|-------------------------|--------------|--------------|
| Ending Inventory | | |
| Bundles | 3197 | 3165 |
| Cores | 120 | 120 |
| New Receipts | 59 (bundles) | 11 (bundles) |
| Removed | | |
| SRE | 9 (bundles) | 43 (bundles) |
| FRR/DRR | 0 | 0 |
| HFIR | 0 | 0 |

Projected FY14 Inventory Changes

Receipts:

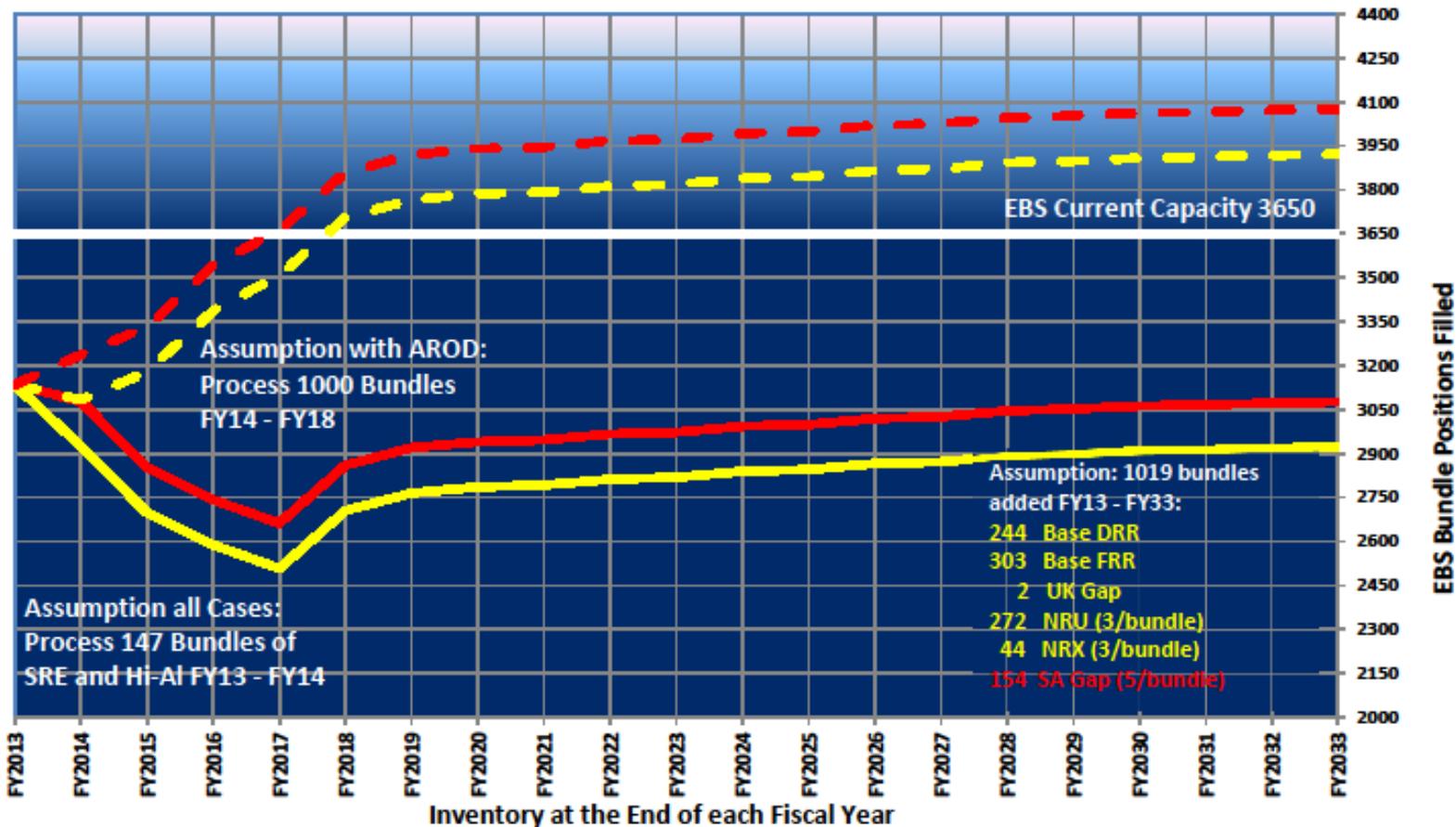
| Type of UNF | Location | Projected Receipts (bundles) |
|--------------|---|------------------------------|
| FRR | 3 Casks - Anticipated but subject to change | 12 |
| | Canada (1) | 6 |
| | United Kingdom (1) | 2 |
| | Switzerland (1) | 4 |
| DRR | | 8 |
| | MURR (3) | 6 |
| | MIT (1) | 2 |
| TOTAL | | 20 |

Removals:

| Type of UNF | Projected Bundles to be Processed |
|--------------|---|
| SRE | 95 |
| FRR/DRR | 125 (assumes funding available for 5 dissolution batches) |
| HFIR | 0 |
| Total | 220 |

Projected Basin Capacity

DRAFT EBS Bundle Positions Filled by Base FRR/DRR plus Receipt Scenarios **DRAFT**



- Most Probable Inventory with AROD: FRR/DRR + UK Gap + NRU/NRX
- Maximum Inventory with AROD: FRR/DRR + UK Gap + NRU/NRX + SA Gap
- Most Probable Inventory without AROD: FRR/DRR + UK Gap + NRU/NRX
- Maximum Inventory without AROD: FRR/DRR + UK Gap + NRU/NRX + SA Gap

7/24/2013

Principles of Understanding

- 1980 Agreement between the State of South Carolina and DOE which is administered by SCDHEC. It acknowledges the need for mutual cooperation in the safe transport of radioactive waste.
- Signed by Governor Richard Riley and the Acting Under Secretary of Energy Worth Bateman on October 30, 1980.
- It applies to all shipments of radioactive waste by or for DOE, to or from any waste disposal/storage site located in South Carolina. Also includes shipments of non-commercial and foreign spent nuclear fuel to SRS.
- DOE accepts responsibility for shipments and takes action in response to claims, actions, or proceedings brought against DOE due to radiological injury or damage to persons or property.

Principles of Understanding (cont)

- Principles do not apply to shipments under National Security or Defense.
- Submitted annually by January 1, to the Commissioner of SCDHEC
- Submitted Information includes:
 - Name and address of DOE Shipper
 - Written certification that each DOE shipper has current disposal license and waste acceptance criteria
 - Written certification that justifies the radioactive waste shipped will be generated from its national security or defense functions.
 - Inspection requirements at SRS to ensure no violations of packaging and transportation requirements.

Overall inventory was reduced in FY2013 to below the FY2012 inventory total.

The Amended Record of Decision allows the continued use of L-basin without additional costs for new storage racks.

Projections show that FY2014 inventory will be reduced to below FY2013 inventory total.

Principles of Understanding is the mechanism that notifies SCDHEC of the wastes and UNF that is coming into and out of SRS.