U.S. DEPARTMENT of ENERGY

SRS Spent Nuclear Fuel Program Update

75 Years of service to the Nation
SRS™
SAVANNAH RIVER SITE
★ 1950-2025 ★

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Citizens Advisory Board, Full Board Meeting
20 May 2025

CAB
Savannah River Site Citizens Advisory Board

Agenda

SRS Spent Nuclear Fuel (SNF) Program Update

- **Mission**
  - MOA's
- **L Basin Overview**
- **L Basin Storage**
  - Wet
  - Dry
  - Capacity Rollup
- **Cask Processing**
- **Receipts**
- **Shipments**
- **Summary**

L-Area Facility

SRS Spent Fuel Program Mission

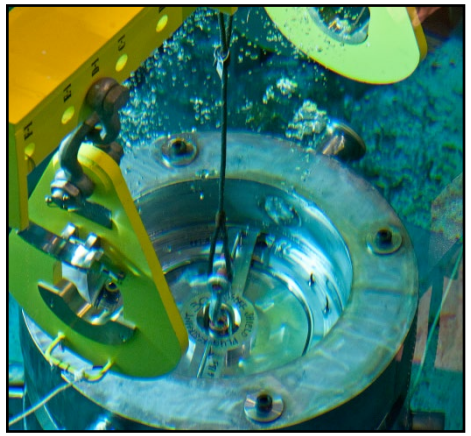
- Receive and store aluminum-based SNF from foreign & domestic research reactors
- Support National Nuclear Security Administration's (NNSA) nonproliferation effort for removal of Highly Enriched Uranium (HEU) from reactor sites (~34 Foreign Countries)
- Support Office of Nuclear Energy and the Office of Science ongoing reactor programs (~5 Domestic)
- Store legacy SRS nuclear materials
- Package and ship fuel for disposition
- Four MOA's

L-Basin Overview

- **Steel-reinforced concrete structure**
- **Approximately 3.4 million gallons of water**
- **Pool depth of 17’ to 50’**
- **Water provides shielding for worker safety**
- **No active cooling**
- **Systems to maintain water level, clarity, and purity**
- **Storage configurations include:**
  - *Expanded Basin Storage (EBS) Racks*
  - *High Flux Isotope Reactor (HFIR) Racks*
  - *Oversized Can (OSC) Racks*
  - *Bucket Storage Racks*
  - *Bucket Storage Rows*

Example Cask Processing

Receive Cask/
Removed Impact Limiters

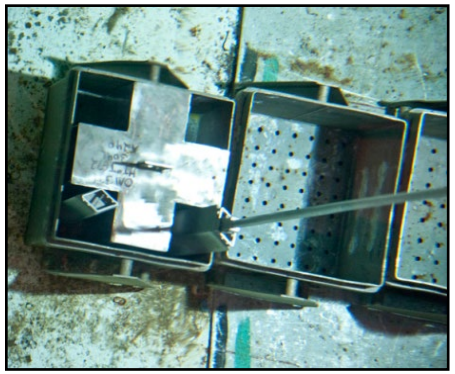


Cask Placed Under Water

Lid Removed

Reassembly & Ship
Empty Cask

Cask with fuel ready for verification



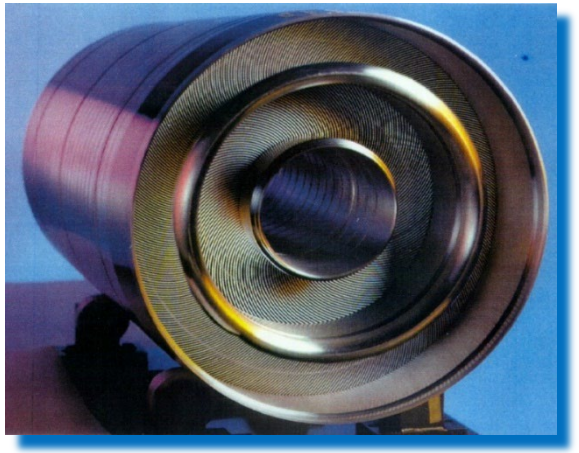
Fuel Removal & placed in bucket for
transfer to Basin from Transfer Bay

L Area Basin Storage

- **Expanded Basin Storage (EBS) Racks**
  - Fixed geometry for criticality control
  - 3650 positions
  - 3048 occupied
  - Space to add more racks if needed

L Area Basin Storage

- **HFIR Racks**
  - 120 positions
  - 76 occupied
- **Bucket Storage Racks**
  - 18 positions
  - 4 occupied
- **Oversize Can (OSC) Racks**
  - 42 positions
  - 23 occupied
- **Bucket Row Storage**
  - 39 positions
  - 26 occupied



HFIR Core

OSC Rack

L Area Dry Fuel Storage

- **Disassembly Area Dry Fuel Storage Area**
  - 23 Drum Positions
  - 22 Occupied
- **Slug Vault Dry Fuel Storage Area**
  - 16 Drums (full)

Pacific Northwest National Laboratory (PNNL) Drums (55 gal)

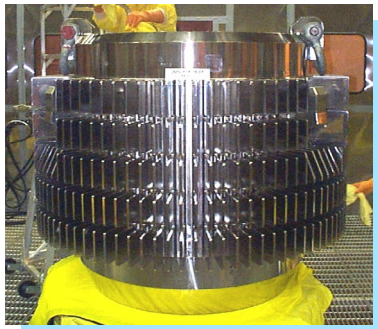
Mound Drums (30 gal)

Spent Fuel Cask Examples

GE-2000

JRF-90Y-950K

LWT



JMS-87Y-18.5T

BRR

JRC-80Y-20T

Fuel Receipts

- **FY25 Receipts**
  - Foreign Research Reactors: 0 Casks/ 0 assemblies
  - Domestic Research Reactors: 16 casks / 32 assemblies & 12 HFIR cores
- **FY26 Forecast Receipts**
  - Foreign Research Reactors : 6 casks / 200 assemblies
  - Domestic Research Reactors : 13 casks / 32 assemblies & 9 HFIR cores

← BRR Cask

GE2000 Cask →

Fuel Shipments to H Canyon

FY25 Shipments (casks)

Material Test Reactor Fuel: 4
HFIR: 2
Mark 18 A Target: 1

- **FY26 Forecast Shipments (casks)**
  - Material Test Reactor Fuel: 6
  - HFIR: 1
  - Mark 18 A Target: 4

SRS 70-Ton Cask →

Summary

- Mission
- L Basin Overview
- L Basin Storage
- Cask Processing
- Receipts
- Shipments
- Department continues to safely receive and store SNF to reduce global threat.
- Basin annual inventory volume will continue to decrease in support of Accelerated Basin De-inventory