



U.S. DEPARTMENT OF
ENERGY

OFFICE OF
**ENVIRONMENTAL
MANAGEMENT**

SRS L-Basin Used Nuclear Fuel Program Update

Presentation to the Nuclear Waste Technical Review Board

Maxcine Maxted

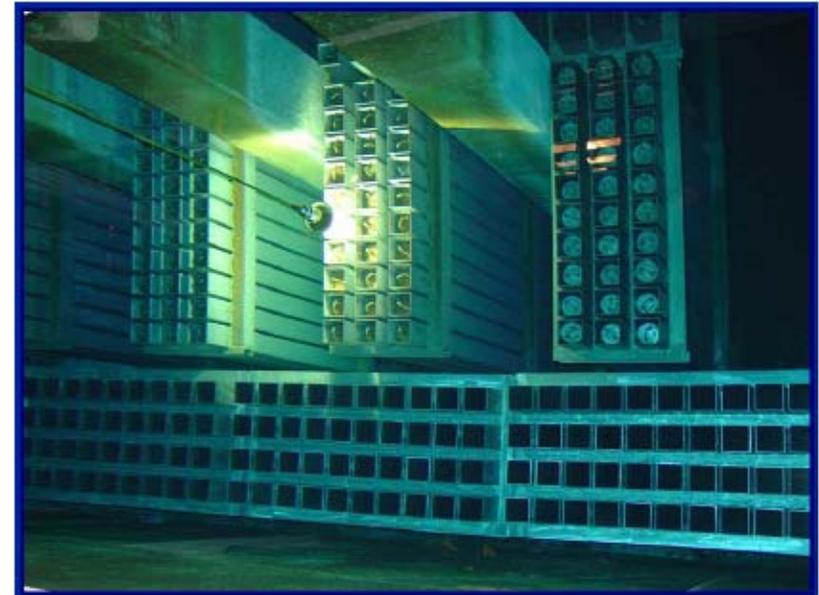
Spent Nuclear Fuel Program Manager

Savannah River Site

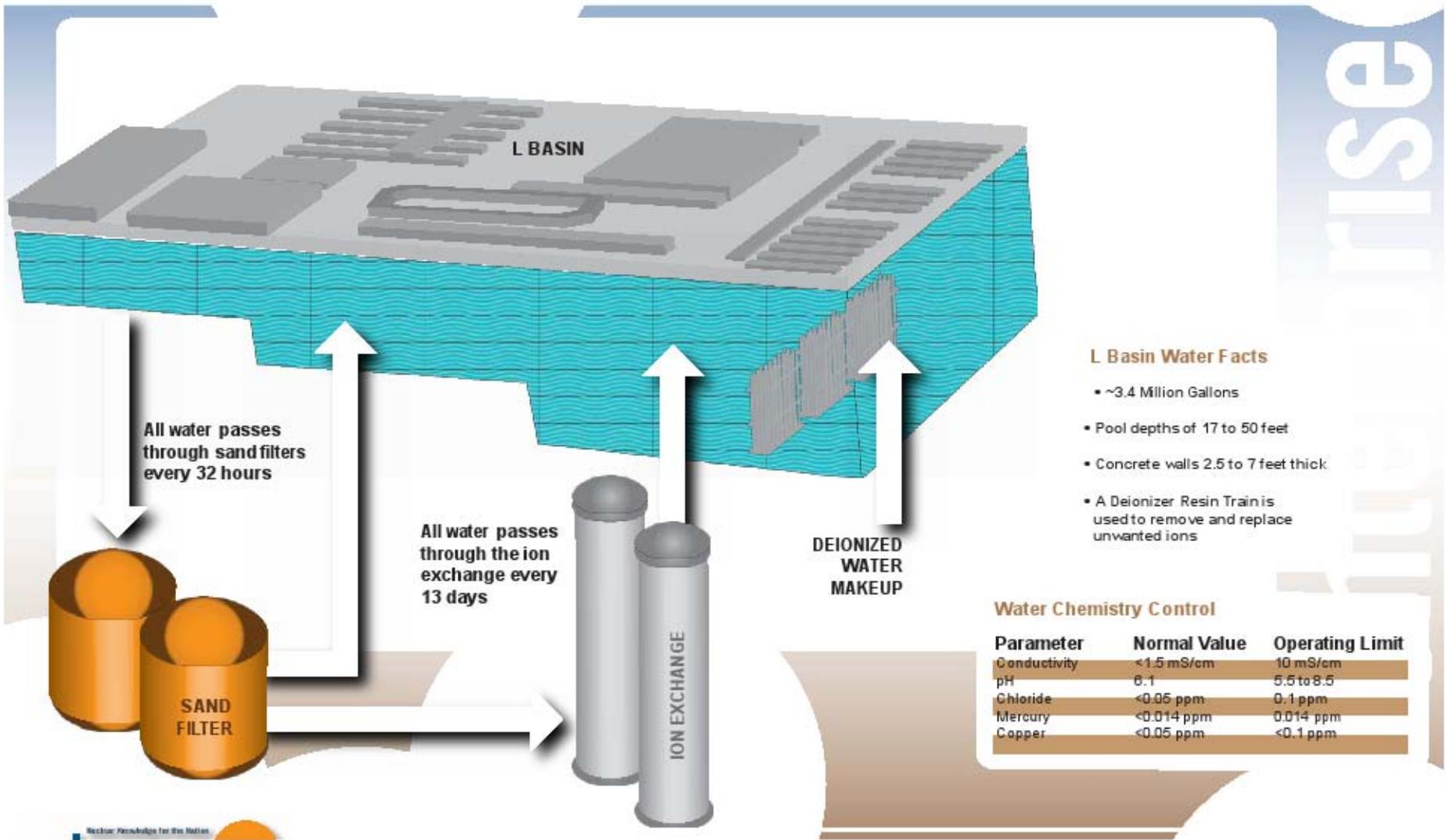
October 29, 2014

Overview of L-Basin

- L-Basin was expanded from the original reactor basin in the 1990s
 - ~3.4 Million gallons of water
 - Pool Depth 17 to 50 feet
 - Receives typical FRR/DRR Material Test Reactor Fuel Assemblies
 - One transfer bay for receipts/shipments



L-Basin Water Purification System



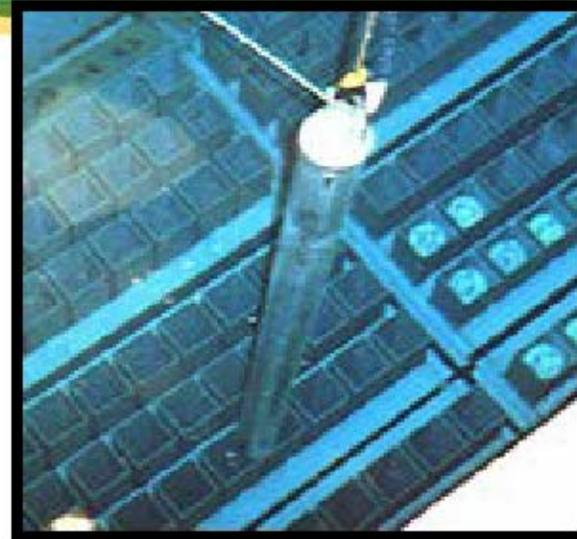
Inventory at SRS

- Approximately 18,400 Assemblies
 - Aluminum Based & Stainless Steel/Zirconium Based UNF (~90%)
 - Highly Enriched & Low Enriched UNF (75% vs 25%)
 - Various shapes, sizes, burn-up percentage, degradation
- Safely and Securely Stored in Reinforced Concrete Facility, Underwater Basin (L-Area)
- Continuous Surveillance and Maintenance
 - 50 additional years of safe storage



L-Basin Stored Fuels and Capacities

- L-Bundled fuel
 - Typical FRR/DRR Material Test Reactor Fuel Assemblies
 - ~90% full
 - 3045 bundles
 - AROD processing decision eliminates need for new racks



- High Flux Isotope Reactor (HFIR) Fuel Racks

- 100% full
- 120 Cores
- AROD processing decision eliminates need for new racks

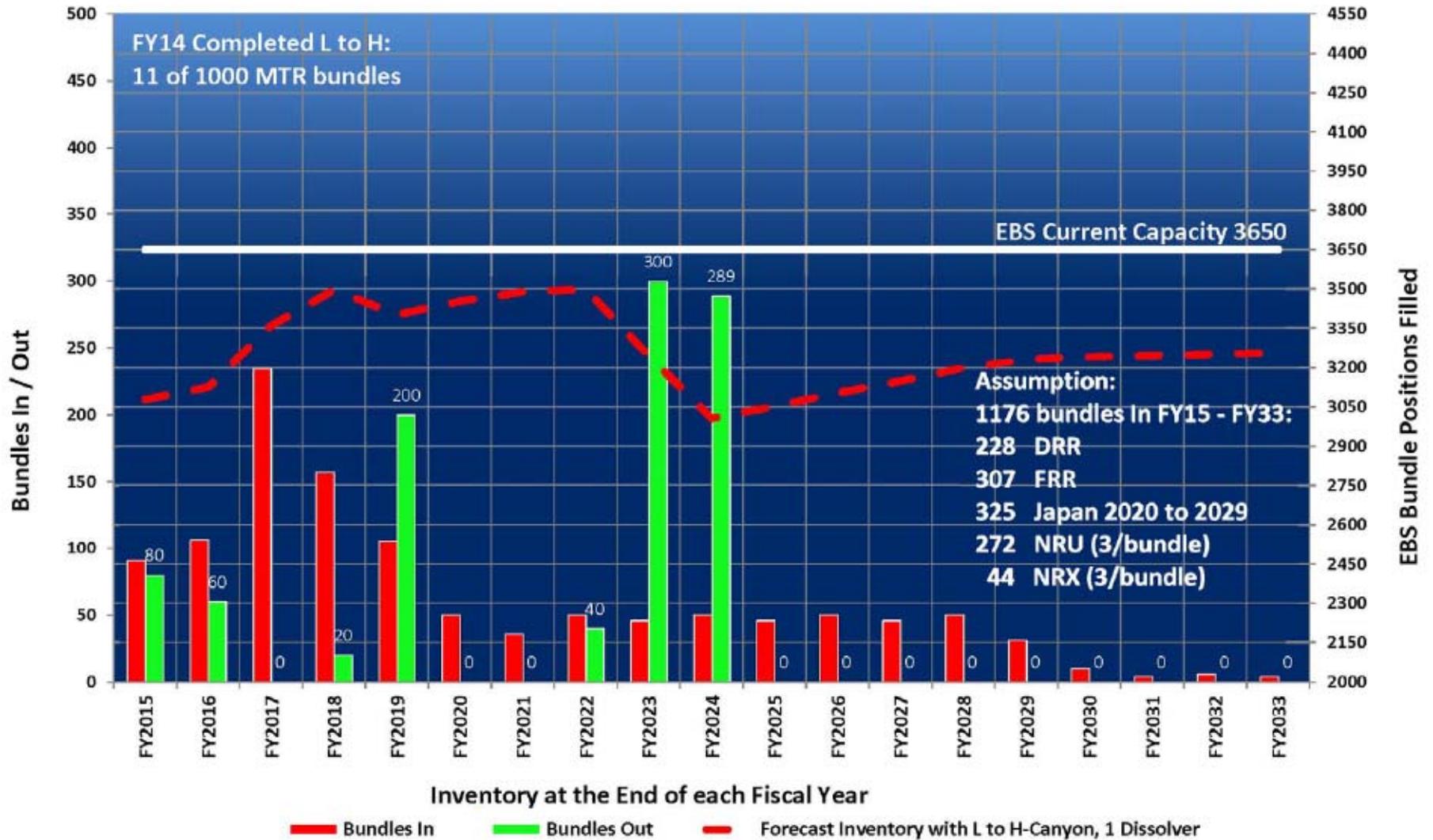


- Isolation Cans

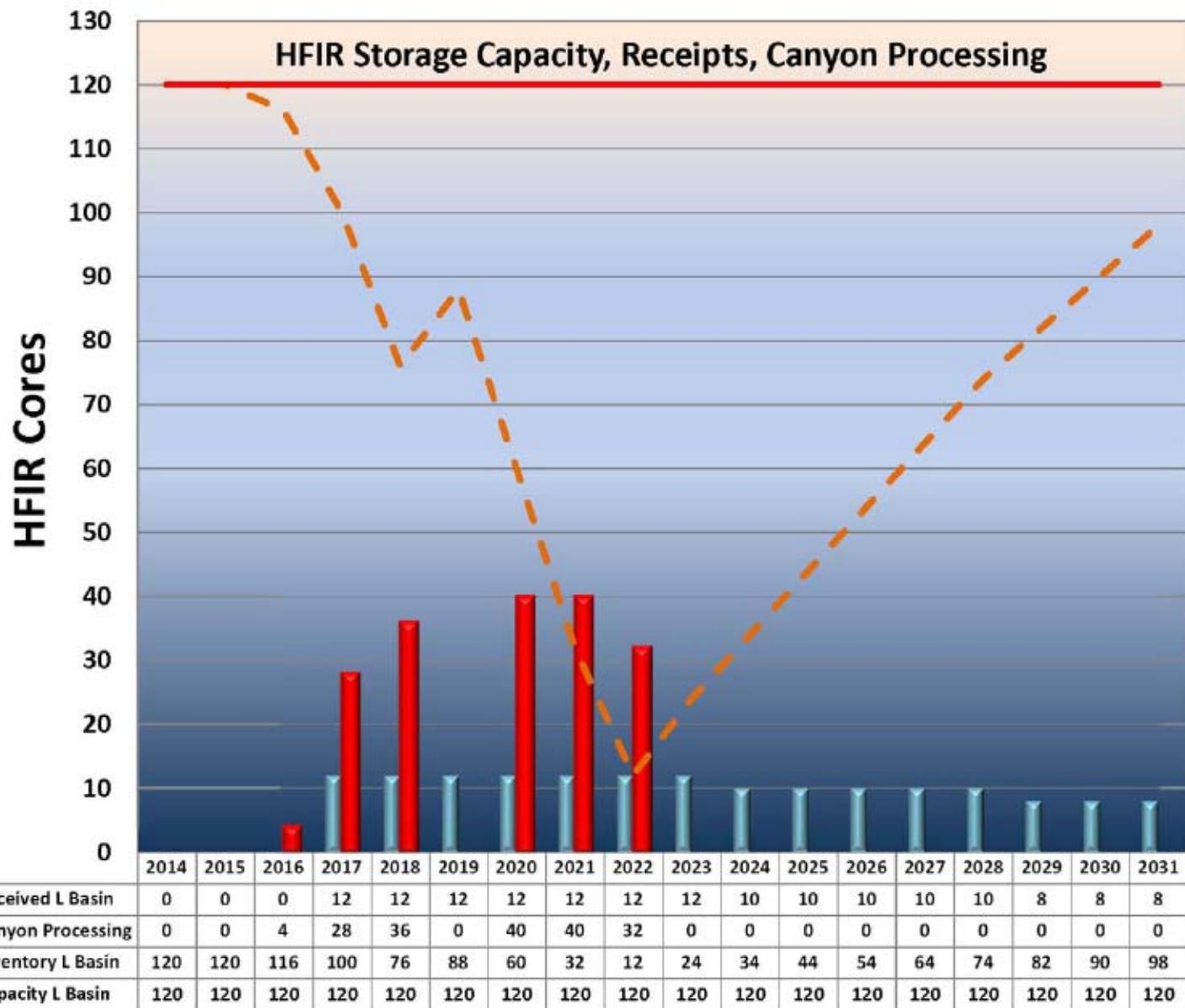
- Over 400 individual isolation cans stored in 12 oversized cans



Forecast EBS Bundle Positions Filled by FRR/DRR Receipts with H-Canyon Processing



10-9-14



- AECL has NRU/NRX fuel that is longer and heavier than typical Material Test Reactor Fuel
 - Contract signed in 2012 where prepayment of \$10 Million made for the modifications to be made for receipt of the fuel in L-basin
- Modifications to the Shielded Transfer System (STS) are required to remove the fuel from the LWT cask.
- New unloading station developed to remove the fuel from the basket and load it into bundles for storage in L-basin.
- Fabrication of the STS modifications are expected by end of Calendar Year 2014
- Receipts expected to begin in March 2015.
- Multi-year shipping campaign
- No other modifications are expected for typical MTR Fuels.
- All non-typical MTR fuels will be evaluated on a case-by-case basis.

Any Questions?

Dave Rose will now present on the extended life
of L-Basin