



U.S. DEPARTMENT OF  
**ENERGY**

OFFICE OF  
ENVIRONMENTAL  
MANAGEMENT

# Environmental Management Cleanup Program Performance Measures Status for Fiscal Year 2014

---

**Rich Olsen**

*Planning Analyst*

DOE-Savannah River

**Citizens Advisory Board**

**May 19, 2014**

## Purpose

- Provide Fiscal Year 2014 Targets and Year to Date actuals (through April) for EM performance measures.
- Fulfill a Strategic & Legacy Management (S&LM) Committee Work Plan requirement to periodically provide Environmental Management (EM) performance updates.

# Acronyms

ARP	Actinide Removal Process
D&D	Deactivation & Decommissioning
DWPF	Defense Waste Processing Facility
HEU	Highly Enriched Uranium
LLW	Low Level Waste
MCU	Modular Caustic Side Solvent Extraction Unit
MLLW	Mixed Low level Waste
Pu	Plutonium
SRE	Sodium Reactor Experiment
SWPF	Salt Waste Processing Facility
TRU	Transuranic Waste
UNF	Used Nuclear Fuel
WIPP	Waste Isolation Pilot Plant

## SRS Cleanup Program - Background

- The EM Cleanup Program for the SRS started in the 1990's.
  - Current Lifecycle Estimate (scope, cost, schedule) indicates EM cleanup completion by 2042.
- Performance Measures have been developed to track progress towards end state targets.

# SRS Cleanup Program – Major Areas

**Radioactive  
Liquid  
Waste**

**Solid  
Waste**

**Nuclear  
Materials**

**Soil,  
Groundwater  
& Facilities**

**Insoluble  
Waste  
(Sludge)**

**Transuranic  
(TRU)  
Waste**

**Used  
Nuclear Fuel**

**Contaminated  
Soil and  
Groundwater**

**Soluble  
Waste  
(Salt)**

**Mixed & Low  
Level Waste**

**Highly Enriched  
Uranium (HEU)**

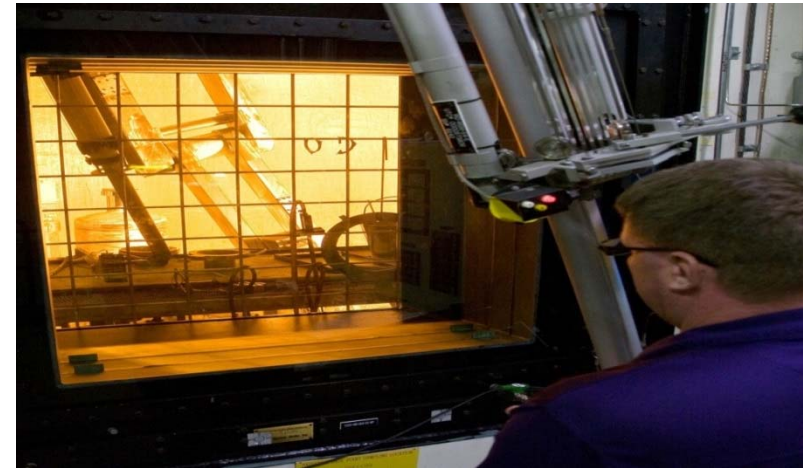
**Facilities  
Deactivation &  
Decommissioning**

**Tank  
Closures**

**Plutonium (Pu)**

# Liquid Waste: Vitrification Process

## Canister Production



Performance Measure	Unit of Measure	Actual FY13	Target FY14	Actuals FY14	YTD Cum FY14	End State	% Compl.	Est. Year Complete
Vitrify Insoluble Waste (Sludge)	Canisters Produced	225	125	47	3,798	7,580	50%	2028

6



# Liquid Waste: Saltstone Processing

## Saltstone Production Facility



## Saltstone Disposal Unit (SDU2)



Performance Measure	Unit of Measure	Actuals FY13	Target FY14	Actuals FY14	YTD Cum FY14	End State	% Compl.	Est. Year Complete
Process Salt Solution	K Gallons Processed	2,005	1,200	42	8,766	124,657	7%	2028

7

# Liquid Waste: Tank Closure

## Grouting of Tanks 5 & 6 (Operationally closed in Fiscal Year 2014)



Performance Measure	Unit of Measure	Actual FY13	Target FY14	Actuals FY14	YTD Cum FY14	End State	% Compl.	Est. Year Complete
Close Tanks: Old Style	Tanks Closed	0	2	2	6	24	25%	2022
Close Tanks: New Style	Tanks Closed	0	0	0	0	27	0	2028

Note: Target is to close 2 additional tanks in Fiscal Year 2015

8



# Solid Waste Disposal: Transuranic Waste

## Transuranic Waste (TRU) Shipment to WIPP



Performance Measure	Unit of Measure	Actual FY13	Target FY14	Actuals FY14	YTD Cum FY14	End State	% Compl.	Est. Year Complete
TRU- Legacy (in storage prior 2009)	Cubic Meters	1,168	716	405	11,063	11,600	95%	2015
TRU- Newly Generated	Cubic Meters	42	118	24	139	3,980	Ongoing	TBD

# Solid Waste Disposal: Mixed & Low Level Waste

## Mixed Waste Shipment to Utah



## Low Level Waste (LLW) New Trench - On Site



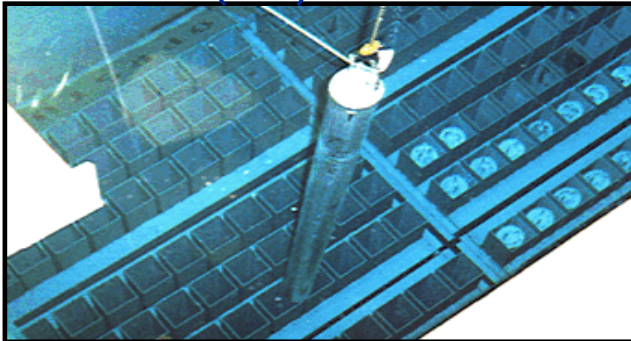
Performance Measure	Unit of Measure	Actual FY13	Target FY14	Actuals FY14	YTD Cum FY14	End State	% Compl.	Est. Year Complete
M&LL-Legacy (Prior to April 2008)	Cubic Meters	-	-	-	-	103,171	100%	2008
M&LL-Newly Generated	Cubic Meters	Met	< 400*	Met	< 400	< 400	Ongoing	TBD

\* Accumulation of M&LL not to exceed 400 Cu Meters at anytime

10

# Used Nuclear Fuel Receipt & Storage

Used Nuclear Fuel (UNF) Bundle stored in L- Basin



UNF being sent to H Canyon via 70 Ton Cask

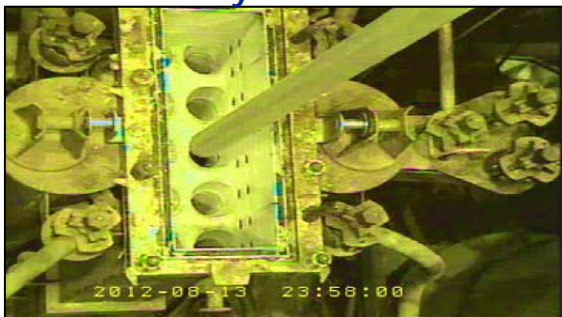


Performance Measure	Unit of Measure	EOY Actual FY13	Target FY14	Actuals FY14	EOY Target FY14	End State	Target Year
L-Basin Inventory	Bundles Cores	3,165 120			3,067 120	0 0	TBD TBD
Added: New Receipts	Bundles Cores		8 0	0 0			
Removed* : Packaged for Transfer to H Canyon	Bundles Cores		106 0	44 0			

\* Authorized to Remove : Up to 1,000 Bundles and 200 HFIR cores per Amended Record of Decision and 148 Bundles of Sodium Reactor Experimental fuel

# Nuclear Materials Management

Used Nuclear Fuel (UNF) Bundle placed  
into H-Canyon Dissolver



Plutonium 3013 Type Container



Performance Measure	Unit of Measure	Actual FY13	Target FY14	Actuals FY14	YTD Cum FY14	End State	% Compl.	Est. Year Complete
HEU Blend & Ship (Earlier Campaign)	Trailers	-	-	-	-	336	100%	2012
HEU Dissolved (UNF from L-Basin)	Bundles Cores	45 0	106 0	38 0	77 0	1,148* 200*	7% 0%	TBD
Plutonium Prepared for Disposition	Containers	30	10	0	157	5,600	3%	2031

- Authorized to Dissolve : Up to 1,000 Bundles and 200 HFIR cores per Amended Record of Decision and 148 Bundles of Sodium Reactor Experimental fuel.

12



# Soil, Groundwater & Facilities

## D Area Ash Basins Remediation Planning



## P Area Groundwater Characterization\*



## Continuance of Post Remediation /Permit Compliance



Performance Measure	Unit of Measure	Actual FY13	Target FY14	Actuals FY14	YTD Cum FY14	End State	% Compl.	Est. Year Complete
Remediation of Waste Sites	Waste Site	0	0	0	400	515	78%	2042
Facilities D&D'd	Facilities	0	0	0	285	1,103	26%	2042

\* Assessment of the nature & extent of possible groundwater contamination

13

# Performance Measures Summary through April 2014

EM Site Cleanup- Major Categories	Unit of Measure	Fiscal Year 2014		Cum Actuals	End State Quantity	% Complete	Est. Year to Complete
		Actuals (FYTD)	Annual Target				
<b>Liquid Waste</b>							
Vitrify Highly Radioactive Components	Canisters	47	125	3,798	7,580	50%	2026
Process Low Level Components (Saltstone)	k Gallons	42	1,200	8,766	124,657	7%	2026
Close Tanks - Old Style	Tanks	2	2	6	24	25%	2022
Close Tanks - Newer Style	Tanks	0	0	0	27	0%	2028
<b>Solid Waste</b>							
Transuranic Waste Disposed							
Legacy TRU (prior to 2009)	Cu Meters	405	716	11,063	11,600	95%	2015
Newly Generated TRU	Cu Meters	24	118	139	3,980	Ongoing	2042
Mixed & Low-Level Waste Disposed							
Legacy (prior to 2008)	Cu Meters	Complete	Complete	Complete	103,171	Complete	2008
<b>Nuclear Materials</b>							
Highly Enriched Uranium: Blend Down & Ship	Trailers	Complete	Complete	Complete	336	Complete	2012
Plutonium Preparation - All Paths	Containers	0	10	157	5,600	3%	2031
Used Nuclear Fuel: Dissolve							
Sodium Reactor Experiment	Bundles	38	96	90	148	61%	2014
Foreign & Domestic Reactor Fuel	Bundles	0	10	0	1,000	0%	TBD
High Flux Isotope Reactor Fuel	Cores	0	0	0	200	0%	TBD
<b>Used Nuclear Fuel Receipt &amp; Storage</b>							
Inventory in L-Basin	Bundles	(44)	NA	3,121	0	Ongoing	TBD
<b>Soil, Groundwater &amp; Facilities</b>							
Remediation of Waste Sites	Waste Sites	0	0	400	515	78%	2042
Facilities Deactivated & Decommissioned	Facilities	0	0	285	1,103	26%	2042

14

## Summary

- DOE-SR will continue to track & monitor performance measures for the key operational areas of EM cleanup operations.
- Suggestions from the CAB for any additional improvements are welcomed.