



U.S. DEPARTMENT OF  
**ENERGY**

OFFICE OF  
**ENVIRONMENTAL  
MANAGEMENT**

# Environmental Management Cleanup Program Performance Measures for Fiscal Year 2015

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**Strategic & Legacy Management Committee**

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- Fulfill a Strategic & Legacy Management (S&LM) Committee Work Plan requirement to periodically provide Environmental Management (EM) performance updates.
  - Review Fiscal Year 2015 actual performance results

*Note: Fiscal Year 2016 Performance Targets will be provided once budget is finalized and operationalized*

# SRS Cleanup Program - Background

- The EM Cleanup Program for the SRS started in the 1990's.
- 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,  
Water  
& Facilities**

**Insoluble  
Waste  
(Sludge)**

**Transuranic  
(TRU)  
Waste**

**Nuclear  
Materials  
Disposition**

**Waste Site  
Remediation**

**Soluble  
Waste  
(Salt)**

**Mixed & Low  
Level Waste**

**Spent Nuclear Fuel  
Receipt, Storage  
& Disposition**

**Facilities  
Deactivation &  
Decommission**

**Tank  
Closures**

**“ How did we do in FY 2015 ? ”**



**Answer: Continued Progress but with Challenges**

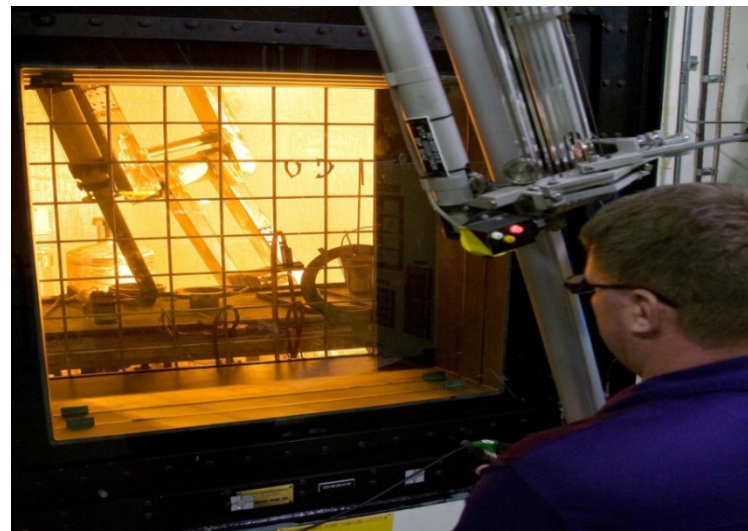


- **Temporary Closing of Waste Isolation Pilot Plant (WIPP)**
  - Delay of Transuranic Waste (TRU) shipments
- **Higher than expected level of Mercury in Liquid Waste**
  - Impacted operations of Saltstone Facility and Defense Waste Processing Facility (DWPF)
- **Antifoam issue in Defense Waste Processing Facility (DWPF)**
  - Impacted Canister production and ARP/MCU operations
- **HB Line Agitator Event and Operational Pause**
  - Impacted operations of Nuclear Materials

- Vitrified 93 Canisters of Radioactive Liquid Waste
- Completed operational closure of one Liquid Waste Tank (Tank 16)
- Spent Nuclear Fuel: Continued Dissolution of Foreign & Domestic Research Reactor fuel for uranium recovery
- Prepared Plutonium for disposition
- Continued receipt, safe storage and shipment of Nuclear Materials, including Spent Nuclear Fuel
- Significant progress towards closure of the D Area Ash Basin
- Upgrades to Site Infrastructure (Roof Replacements, Telephone System, Laboratory Facilities)
- Met 100% of FY 2015 FAA & RCRA Regulatory Milestones

# Liquid Waste: Vitrification Process

## Canister Production



Performance Measure	Unit of Measure	Actual FY14	Target FY15	Actual FY15	Cum To Date
Vitrify Insoluble Waste (Sludge)	Canisters Produced	126	156	93	3,970



# Liquid Waste: Saltstone Processing

## Saltstone Production Facility



## Saltstone Disposal Unit (SDU-6, SDU-3 & 5)



Performance Measure	Unit of Measure	Actuals FY14	Target FY15	Actual FY15	Cum To Date
Process Salt Solution	K Gallons Processed	1,167	1,200	828	10,621

# Liquid Waste: Tank Closure

## Grouting of Tank 16 (Operationally closed in Fiscal Year 2015)



Performance Measure	Unit of Measure	Actual FY14	Target FY15	Actuals FY15	Cum To Date
Close Tanks: Old Style	Tanks Closed	2	1	1	7
Close Tanks: New Style	Tanks Closed	0	0	0	0



# Solid Waste Disposal: Transuranic Waste

## Transuranic Waste (TRU) Shipment to WIPP

**Note:** WIPP Shipments  
Temporarily  
Halted



Performance Measure	Unit of Measure	Actual FY14	Target FY15	Actual FY15	Cum To Date
TRU- Legacy Shipped (in storage prior 2009)	Cubic Meters	405	0	0	11,063
TRU- Newly Generated Shipped	Cubic Meters	24	0	0	139

# Solid Waste Disposal: Mixed & Low Level Waste

Mixed Waste Shipment to Utah



Low Level Waste (LLW) New Trench - On Site

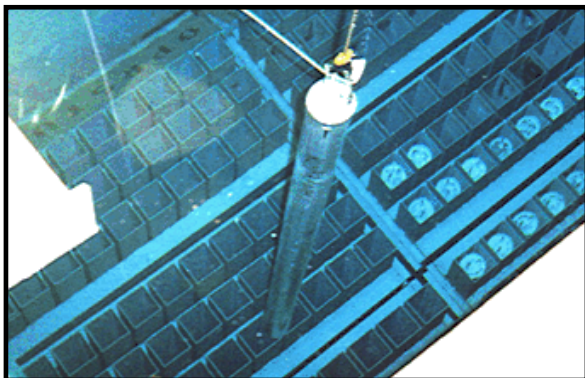


Performance Measure	Unit of Measure	Actual FY14	Target FY15	Actual FY15	Cum To Date
M&LL-Legacy (Prior to April 2008)	Cubic Meters	-	-	-	103,171
M&LL-Newly Generated	Cubic Meters	Met	< 400*	Met	< 400

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

# Spent Nuclear Fuel Receipt & Storage

Spent Nuclear Fuel (SNF) Bundle stored in L- Basin



SNF being sent to H Canyon via 70 Ton Cask



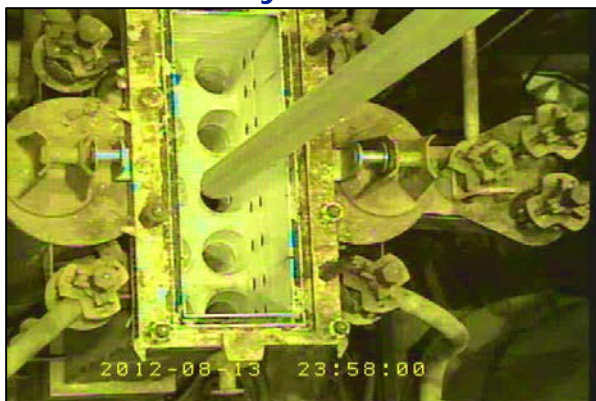
Performance Measure	Unit of Measure	EOY Actual FY14	EOY Target FY15	EOY Actual FY15
Added: New Receipts	Bundles	6	NA	4 <sup>(1)</sup>
Removed : Packaged for Transfer to H Canyon	Bundles	106	80	109
L-Basin Inventory	Bundles	3,065	2,985 + New Receipts	2,960
	Cores	120	120	120

(1) Casks received but not unloaded due to Operational Pause so an additional 19 bundles were received in FY15 but not added to the inventory total until FY2016



# Nuclear Materials Management

## Spent Nuclear Fuel (SNF) Bundle placed into H-Canyon Dissolver



## Plutonium 3013 Type Container



Performance Measure	Unit of Measure	Actual FY14	Target FY15	Actual FY15	Cum To Date
HEU Dissolved (SNF from L-Basin)	Bundles	11	69	69	80
	Cores	0	0	0	0
Plutonium Prepared for Disposition (All Paths)	Containers	10	20	8	175

## D Area Ash Project 488-2D and 488-4D



Performance Measure	Unit of Measure	Actual FY14	Target FY15	Actual FY15	Cum To Date
Remediation of Waste Sites	Waste Site	0	0	0	402
Facilities D&D*	Facilities	4	0	0	289

\*Deactivated & Decommissioned

# Performance Measures Summary through Sep 2015

<u>EM Site Cleanup- Major Categories</u>	Unit of Measure	Fiscal Year 2015		Cum to Date Actuals
		Annual Target	Actuals	
<b>Liquid Waste</b>				
Vitrify Highly Radioactive Components	Canisters	156	93	3,970
Process Low Level Components (Saltstone)	k Gallons	1,200	828	10,621
Close Tanks - Old Style	Tanks	1	1	7
Close Tanks - Newer Style	Tanks	0	0	0
<b>Solid Waste</b>				
Transuranic Waste Shipped				
Legacy TRU (prior to 2009)	Cu Meters	0	0	11,063
Newly Generated TRU	Cu Meters	0	0	139
Mixed & Low-Level Waste Shipped				
Legacy (prior to 2008)	Cu Meters	Complete	Complete	103,171
<b>Nuclear Materials</b>				
Highly Enriched Uranium: Blend Down & Ship	Trailers	Complete	Complete	Complete
Plutonium Preparation - All Paths	Containers	20	8	175
Spent Nuclear Fuel: Dissolve				
Sodium Reactor Experiment	Bundles	Complete	Complete	147
Foreign & Domestic Reactor Fuel	Bundles	69	69	80
High Flux Isotope Reactor Fuel	Cores	0	0	0
<b>Spent Nuclear Fuel Receipt &amp; Storage</b>				
Inventory in L-Basin	Bundles	NA	(105)	2,960
<b>Soil, Groundwater &amp; Facilities</b>				
Remediation of Waste Sites	Waste Sites	0	0	402
Facilities Deactivated & Decommissioned	Facilities	0	0	289

- 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.

# Acronyms

<b>AROD</b>	Amended Record of Decision (1000 bundles + 200 HFIR Cores)
<b>ARP</b>	Actinide Removal Process
<b>D&amp;D</b>	Deactivation & Decommission
<b>DWPF</b>	Defense Waste Processing Facility
<b>FFA</b>	Federal Facility Agreement
<b>HEU</b>	Highly Enriched Uranium
<b>LLW</b>	Low Level Waste
<b>MCU</b>	Modular Caustic Side Solvent Extraction Unit
<b>MLLW</b>	Mixed Low level Waste
<b>Pu</b>	Plutonium
<b>RCRA</b>	Resource Conservation & Recovery Act
<b>SNF</b>	Spent Nuclear Fuel
<b>SRE</b>	Sodium Reactor Experiment
<b>SWPF</b>	Salt Waste Processing Facility
<b>TRU</b>	Transuranic Waste
<b>WIPP</b>	Waste Isolation Pilot Plant