



U.S. DEPARTMENT OF
ENERGY

EM Performance Metrics Targets for Fiscal Year 2013

Rich Olsen

Office of Integration & Planning

DOE-Savannah River



April 9, 2013

enterprise·srs

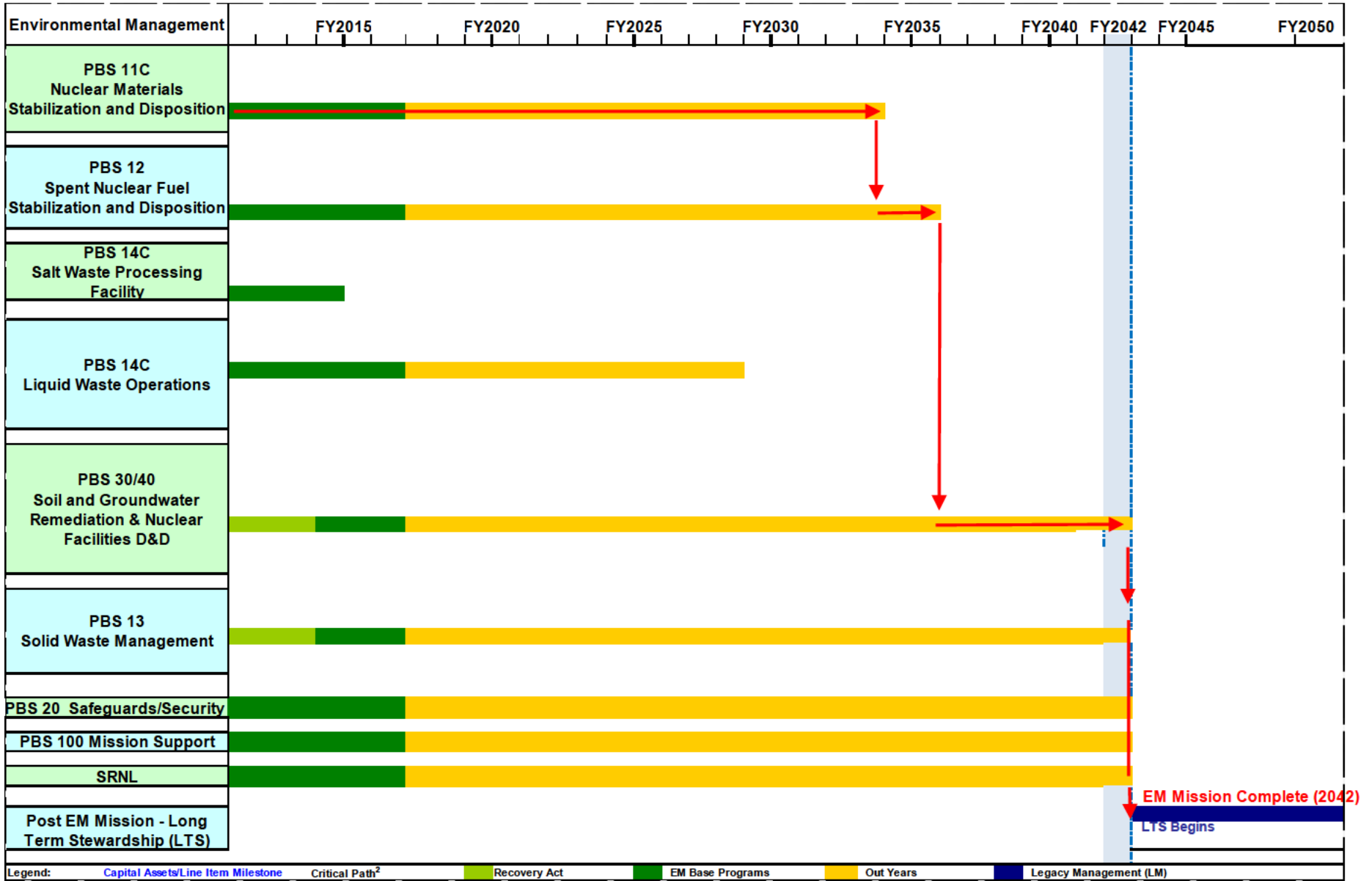
Purpose

- **Fulfill Strategic & Legacy Management committee work plan requirement to periodically provide Environmental Management (EM) performance updates.**
- **Provide EM Performance targets for Fiscal Year 2013 and actual performance through February, 2013**

Site 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 EM Program Lifecycle FY2012 Update



Site Cleanup Program - Major Areas

**Radioactive
Liquid
Waste**
PBS 14C

**Contaminated
Solid
Waste**
PBS 13

**Nuclear
Materials
Management
& Disposition**
PBS 11C, 12

**Soil,
Groundwater
& Facilities**
PBS 30

**Highly
Radioactive
Components
(Canisters)**

**Transuranic
Waste**

**Highly
Enriched
Uranium**

**Soil &
Groundwater
Remediation**

**Low Level
Components
(Salt Waste)**

**Mixed & Low
Level Waste**

Plutonium

**Facilities
Deactivation &
Decommission**

**Tank
Closures**

**Used
Nuclear
Fuel**

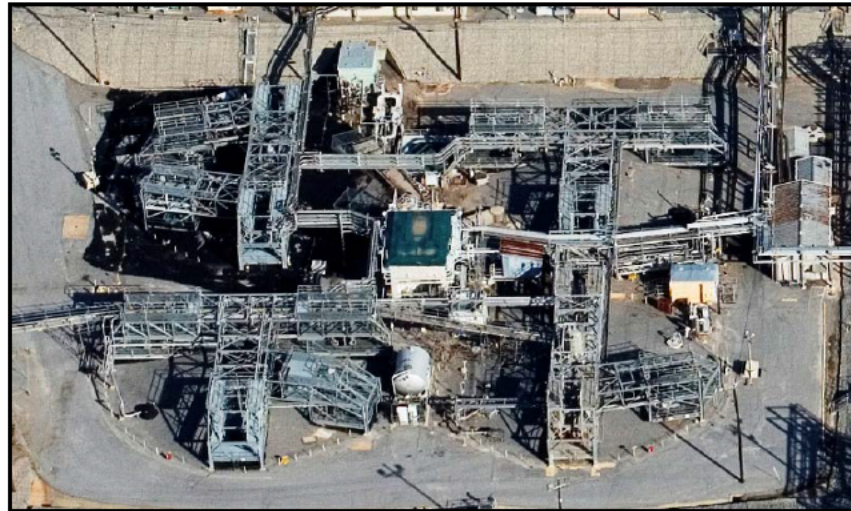
Canister Production



Saltstone Production



Tank Closure



Transuranic Waste (TRU) Shipment to WIPP



Mixed Waste (MLL) Shipment to Utah



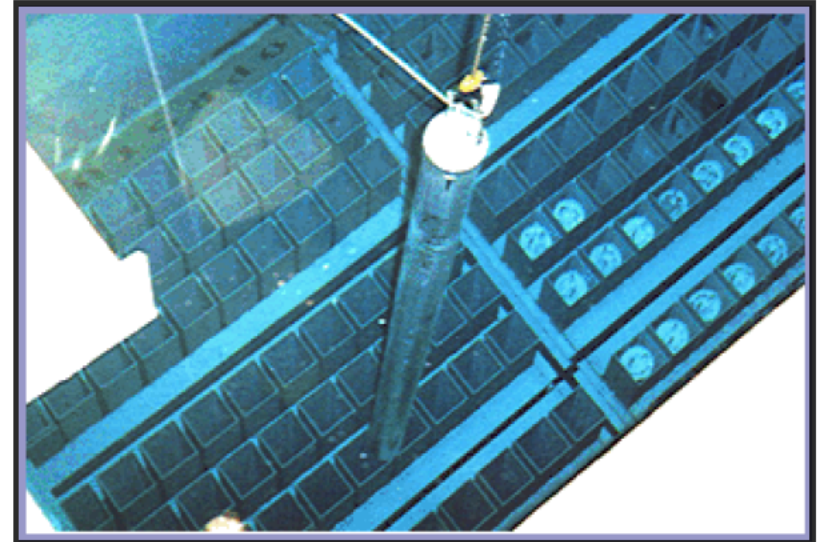
Low Level Waste (LLW) Disposal-On Site



**Plutonium
3013 Type Container**



**Used Nuclear Fuel (UNF) Bundle
Stored in L- Basin**



Soil, Groundwater & Facilities

Waste Site Remediation

R Area Ash Basin



R Area Ash Basin



Deactivation & Decommission

P Area Disassembly Basin



Heavy Water Components Test Reactor



EM Performance Report - Major Areas of Clean-up thru 2/28/13

<u>EM Site Cleanup- Major Categories</u>	Unit of Measure	Fiscal Year 2013		Cum thru FY13	End State Quantity	% Complete	Est. Year to Complete
		Actuals (FYTD)	Annual Target				
Liquid Waste							
Vitrify Highly Radioactive Components	Canisters	56	275	3,584	7,580	47%	2026
Process Low Level Components (Saltstone)	k Gallons	829	1,548	7,548	124,657	6%	2026
Close Tanks - Old Style	Tanks	0	0	4	24	17%	2022
Close Tanks - Newer Style	Tanks	0	0	0	27	0%	2028
Solid Waste							
Transuranic Waste Disposed							
Legacy TRU (prior to 2009)	Cu Meters	572	1,372	10,062	11,084	91%	2014
Newly Generated TRU	Cu Meters	24	40	97	3,980	Ongoing	2042
Mixed & Low-Level Waste Disposed							
Legacy (prior to 2008)	Cu Meters	Complete	Complete	Complete	103,171	Complete	2008
Newly Generated (accum. < 400 anytime)	Cu Meters	Met	< 400	< 400	< 400	Ongoing	2042
Nuclear Materials							
Highly Enriched Uranium: Blend Down & Ship	Trailers	Complete	Complete	Complete	336	Complete	2012
Plutonium Disposition - All Paths	Containers	0	40	127	5,600	2%	TBD
Used Nuclear Fuel: Dissolve SRE **	Bundles	21	29	28	147	19%	2014
Used Nuclear Fuel: Inventory in L-Basin	Bundles	3,181	3,179	-	3,650*	87%	TBD
Soil, Ground Water & Facilities							
Remediation of Waste Sites	Waste Sites	0	0	399	515	77%	2042
Facilities Deactivated & Decommissioned	Facilities	0	0	284	1,103	26%	2042

* Dependent upon negotiations with foreign countries & current capacity of L-Basin

** Represents Used Nuclear Fuel from Sodium Reactor Experiment (SRE) campaign

Note: Nuclear Materials section does not reflect recent Amended Record of Decision.

FY13 EM Performance Metrics Report through February 28, 2013

<u>Liquid Waste</u> <i>Measure</i>	Unit of Measure	Cum Actuals thru FY 2012	FY 2013 Analysis		End State Analysis				
			Actuals FYTD	Annual Target*	Cum Act thru 2013 (FYTD)	End State*	% Complete	Forecast to Complete	Regulatory Commitment to Complete
			2/28/13						
Highly Radioactive Components									
Canisters Produced (Vitrification)	Canisters	3,528	56	275	3,584	7,580	47%	2026	2028
Low Level Components									
Process Salt Solution (Saltstone)	k Gallons	6,719	829	1,548	7,548	124,657	6%	2026	2028
Old-style Tank Preparation and Closure									
Bulk Waste Removal Complete	Tanks	12	0	0	12	24	50%	2019	2020
Heel Removal Campaign Complete	Tanks	6	0	2	6	24	25%	2020	NA
Annuli Prepared for Closure	Tanks	2	0	2	2	16	13%	2020	NA
Tanks Isolated	Tanks	6	0	0	6	24	25%	2021	NA
Operationally Close									
Tanks	Tanks	4	0	0*	4	24	17%	2022	2022
Radioactivity									
Curies Stabilized in Canisters	k Curies	47,851	1,164	8,001	49,015	339,851	14%	2026	2028

* Tanks 5 & 6 are scheduled to be operationally closed by the end of Calendar year 3013.

Target and End State Basis

Quantities based on Liquid Waste System Plan Rev 17

Commitment to Complete

Based on FFA and Site Treatment Plan

FY 2013 EM Performance Metrics Report through February 28, 2013

<u>Solid Waste</u> <i>Measure</i>	Unit of Measure	Cum Actuals thru FY 2012	FY 2013 Analysis		End State Analysis			
			Actuals FYTD	Annual Target	Cum Act thru 2013 (FYTD)	End State	% Complete	Target Year to Complete
TRU								
Legacy TRU Waste Disposed	Cubic Meters	9,490	572	1,372	10,062	11,084	91%	2014
Newly Generated TRU Waste Disposed	Cubic Meters	73	24	40	97	3,980	On Going	TBD
MLLW & LLW								
Legacy LL & MLL Waste Disposed	Cubic Meters	103,171	Completed		103,171	103,171	100%	2008
Newly Generated LL & MLL Waste Disposed	Cubic Meters	37,774	2,850	7,800	40,624	135,017	On Going	TBD
Maintain Newly Generated Low Level Waste Below Target Level	Cubic Meters	Met	Met	< 400	Met	< 400	NA	

End State Basis
Solid Waste End State Quantities and Target Year to Complete are based on 2008 Certified Life Cycle Plan

FY 2013 EM Performance Metrics Report through February 28, 2013

<u>Nuclear Materials</u> <i>Measure</i>	Unit of Measure	Cum Actuals thru FY 2012	FY 2013 Analysis		End State Analysis			
			Actuals (FYTD)	Annual Target	Cum Act thru 2013 (FYTD)	End State	% Complete	Target Year to Complete
Highly Enriched Uranium Disposition			2/28/13					
Blend Down & Ship to TVA	Trailers	336	Metric Completed		Metric Completed		2012	
Plutonium Prepared for Disposition								
Plutonium Dissolved in H-Area	Containers	100	0	0	100	100	100%	2011
Package Pu for Shipment to WIPP	Containers	27	0	0	27	3,000	1%	TBD
Prepare Pu Oxide for MOX	Containers	0	0	40	0	2,500	0%	TBD
Total Plutonium Prepared for Disposition	Containers	127	0	40	127	5,600	2%	2033
Used Nuclear Fuel								
L-Basin Inventory	Bundles	3,195	3,181	3,179	3,181	3,650	87%	TBD
New Receipts	Bundles		5	11	NA	NA		
Loaded / Packaged for Disposition	Bundles		19	27	28	147		
Dissolved -SRE Campaign ⁵	Bundles	7	21	29	28	147	19.0%	2014

Note: Nuclear Materials Metrics do not reflect recent Amended Record of Decision

End State Basis
UNF Disposition Path is pending a Record of Decision (ROD)

- **DOE-SR will continue to update and validate Lifecycle measures for the key operational areas of EM cleanup operations.**
 - Revised Nuclear Materials targets, resulting from Amended Record of Decision (ROD), will be shared with the CAB when available
- **Suggestions from the CAB for any additional improvements are welcomed.**

Acronyms

ARP	Actinide Removal Process
D&D	Deactivation & Decommission
DWPF	Defense Waste Processing Facility
FYTD	Fiscal Year to Date
HEU	Highly Enriched Uranium
LLW	Low Level Waste
MCU	Modular Caustic Side Solvent 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