



U.S. DEPARTMENT OF
ENERGY

Presentation to the SRS Citizens Advisory Board

SRS Performance Measures Update

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EM Environmental Management
safety ♦ performance ♦ cleanup ♦ closure

Purpose

- Share format changes to the Performance Measures Report as suggested by the CAB
- Provide an update of EM Performance Measures through August FY 2010

Acronyms

| | |
|----------------|---|
| ARRA | American Recovery & Reinvestment Act |
| DRR | Domestic Research Reactor |
| D&D | Decommission & Demolition |
| FFA | Federal Facility Agreement |
| FRR | Foreign Research Reactor |
| GWSB | Glass Waste Storage Building |
| LEU | Low Enriched Uranium |
| HEU | Highly Enriched Uranium |
| LLW | Low Level Waste |
| LLMW | Low Level Mixed Waste |
| MLLW | Mixed Low level Waste |
| NU | Natural Uranium |
| SCDHEC | South Carolina Dept of Health & Environmental Control |
| SNF | Spent Nuclear Fuel |
| SRNS | Savannah River Nuclear Solutions |
| SRR | Savannah River Remediation |
| SWPF | Salt Waste Processing Facility |
| TRU | Transuranic Waste |
| TVA | Tennessee Valley Authority |

Performance Measures - CAB suggested changes

1. Demonstrate alignment with Site Strategic Plan & EM Mission Achievement
2. For each measure, provide % Complete status & End State target year
3. Color-code FY2010 actuals to provide easier identification of those measures that are ahead, on or behind schedule
4. Show both ARRA and End State Targets for TRU, MLL, LL, Remediation and Facility D&D measures
6. Create graphical analysis and lifecycle projections for key performance measures

Progress towards to EM Mission Achievement

| <u>EM Site Cleanup- Major Areas</u> | (as of 8/31/10) | <u>End State % Complete</u> |
|---|-----------------|--|
| Nuclear Materials | | |
| Dissolve, Blend, Ship Nuclear Materials | | |
| Plutonium Dissolved | | 7% |
| LEU* Shipped to Tennessee Valley Authority vendor | | 56% |
| Spent Nuclear Fuel (from FRR & DRR) Dissolved | | 0% |
| Liquid Waste | | |
| Disposition Radioactive Liquid Waste | | |
| Produce Canisters | | 41% |
| Process Salt Solution | | 3% |
| Close Tanks | | 4% |
| Solid Waste | | |
| Disposition Radioactive Solid Waste | | |
| Transuranic (TRU) Waste Shipped | | 42% |
| Mixed Low-Level & Low-Level Waste Dispositioned | | 82% |
| Soil & Ground Water | | |
| Complete Remediation of Waste Sites | | 72% |
| Facilities | | |
| Decommission / Demolish Facilities | | 26% |

* Note: LEU is the result of blending HEU with natural Uranium

EM Performance Measures – thru August FY 2010

| <u>Nuclear Materials</u> | Unit of Measure | Cum Actuals thru FY 2009 | FY 2010 Analysis | | End State Analysis | | | |
|--|-----------------|--------------------------|------------------|---------------|--------------------------|-----------------|------------|-------------------------|
| <i>Measure</i> | | | Actuals FYTD | Annual Target | Cum Act thru 2010 (FYTD) | End State | % Complete | Target Year to Complete |
| Plutonium & Enriched Uranium | | | | | | | | |
| Plutonium Dissolved in H-Area for Disposition ¹ | Containers | 42 | 29 | 29 | 71 | 967 | 7% | 2019 |
| LEU Shipped to TVA Vendor (LEU = HEU blended with NU) ² | Trailers | 297 | 20 | 20 | 317 | 564 | 56% | 2019 |
| SNF (from FRR & DRR) Dissolved (To begin in FY 2011) | Bundles | 0 | 0 | 0 | 0 | Being Developed | 0% | 2019 |

Nuclear Materials Notes:

- 1. Quantities Since 2008, End State Quantity is Pre- Decisional (Includes LAP Containers)
- 2. LEU = Low Enriched Uranium
HEU = Highly Enriched Uranium
NU = Natural Uranium
SNF = Spent Nuclear Fuel
FRR = Foreign Research Reactor
DRR - Domestic Foreign Reactor
LAP = Low Activity Plutonium
- 3. Start-up of HB-Line South will double through-put capacity of plutonium disposition

On / Ahead of Schedule

Behind Schedule

End State Basis

Nuclear Materials End State Quantities and Target Year to Complete are based on 2008 Certified Life Cycle Plan

EM Performance Measures – thru August FY 2010

| <u>Liquid Waste</u> | Unit of Measure | Cum Actuals thru FY 2009 | FY 2010 Analysis | | End State Analysis | | | |
|--|-----------------|--------------------------|------------------|---------------|--------------------------|-----------|------------|-------------------------|
| Measure | | | Actuals FYTD | Annual Target | Cum Act thru 2010 (FYTD) | End State | % Complete | Target Year to Complete |
| | | | 8/31/10 | | | | | |
| DWPF Canisters Poured & Tested | | | | | | | | |
| Canisters Produced | Canisters | 2,795 | 179 | 190 | 2,974 | 7,235 | 41% | 2028 |
| Tank Preparation and Closure | | | | | | | | |
| Bulk Waste Removal Complete | Tanks | 7 | 0 | 2 | 7 | 51 | 14% | |
| Heel Removal Campaign Complete | Tanks | 4 | 0 | 2 | 4 | 51 | 8% | |
| Annuli Prepared for Closure ² | Tanks | 0 | 0 | 2 | 0 | 43 | 0% | |
| Three Agency Preliminary Approval ³ | Tanks | 4 | 0 | 2 | 4 | 51 | 8% | |
| Three Agency Final Approval ³ | Tanks | 2 | 0 | 2 | 2 | 51 | 4% | |
| Tanks Isolated | Tanks | 2 | 0 | 1 | 2 | 51 | 4% | |
| Operationally Closed | Tanks | 2 | 0 | 0 | 2 | 51 | 4% | 2029 |
| SPF Salt Solution Processed | | | | | | | | |
| Salt Solution Processed | k Gallons | 2,967 | 1,005 | 2,220 | 3,972 | 120,690 | 3% | 2028 |
| Radioactivity | | | | | | | | |
| Curies Stabilized in Canisters ⁴ | k Curies | 23,800 | 6,469 | 7,254 | 30,269 | 385,000 | 8% | 2028 |

Liquid Waste Notes:

1. GWSB # 3 Contingency Capacity - TBD
2. 43 of 51 Tanks Require Annuli Preparation
3. Approval to Cease Waste Removal
4. Estimate based on Sludge Batch Sampling

5. Canister Storage Space Available: 1616 (As of end 8/31/2010)

- On / Ahead of Schedule
- Behind Schedule

End State Basis

Liquid Waste End State Quantity and Target Year to Complete are based on Rev 15 System Plan

EM Performance Measures – thru August FY 2010

| <u>Liquid Waste</u> | | Unit of Measure | Cum Actuals thru FY 2009 | FY 2010 Analysis | | End State Analysis | | | |
|--|--------------|-----------------|--------------------------|------------------|--------------------------|--------------------|------------|-------------------------|--|
| Measure | Actuals FYTD | | | Annual Target | Cum Act thru 2010 (FYTD) | End State | % Complete | Target Year to Complete | |
| DWPF Canisters Poured & Tested | | | | | | | | | |
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| SPF Salt Solution Processed | | | | | | | | | |
| Salt Solution Processed | k Gallons | 2,967 | 1,005 | 2,220 | 3,972 | 120,690 | 3% | 2028 | |
| Radioactivity | | | | | | | | | |
| Curies Stabilized in Canisters ⁴ | k Curies | 23,800 | 6,469 | 7,254 | 30,269 | 385,000 | 8% | 2028 | |

Tanks 5 and 6 planned for late CY 2010. No impacts to Federal Facility Agreement (FFA) Commitments.

Tanks 18 and 19 planned for late CY 2010. No impacts to Federal Facility Agreement (FFA) Commitments.

Tank 18 to complete in CY2010. Tank 19 in progress for completion CY2011. No impacts to FFA Commitments.

Performance has not impacted Liquid Waste or other Programs. Contingency maintained to support facility operations.

Liquid Waste Notes:

- 1. GWSB # 3 Contingency Capacity - TBD
- 2. 43 of 51 Tanks Require Annuli Preparation
- 3. Approval to Cease Waste Removal
- 4. Estimate based on Sludge Batch Sampling

- 5. Canister Storage Space Available: 1616 (As of 8/31/2010)

On / Ahead of Schedule
 Behind Schedule

End State Basis

Liquid Waste End State Quantity and Target Year to Complete are based on Rev 15 System Plan

EM Performance Measures – thru August FY 2010

| <u>Solid Waste</u> | Unit of Measure | Cum Actuals thru FY 2009 |
|--------------------------------------|-----------------|--------------------------|
| Measure | | |
| TRU, MLLW & LLW | | |
| RH-TRU Waste Shipped for Disposal | | 17 |
| CH-TRU Waste Shipped for Disposal | | <u>6,165</u> |
| Total Transuranic Waste Shipped | Cubic Meters | 6,182 |
| LL & MLL Waste Disposed ¹ | | |
| Legacy | | |
| Newly Generated | | |
| Total | Cubic Meters | 105,564 |

| FY 2010 Analysis | |
|------------------|---------------|
| Actuals FYTD | Annual Target |
| 8/31/10 | |
| 0 | 1 |
| 456 | 520 |
| 456 | 521 |
| | |
| | |
| 7,194 | 7,655 |

| End State (Lifecycle) Analysis | | | |
|--------------------------------|---------------|------------|-------------------------|
| Cum Act thru 2010 (FYTD) | End State | % Complete | Target Year to Complete |
| | | | |
| 17 | 68 | | |
| <u>6,621</u> | <u>15,590</u> | | |
| 6,638 | 15,658 | 42% | 2038 |
| | | | |
| | | | |
| 112,758 | 137,579 | 82% | 2038 |

1. LL = Low Level
MLL = Mixed Low Level

 On / Ahead of Schedule

 Behind Schedule

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

EM Performance Measures – thru August FY 2010

| <u>Area Completion</u> | Unit of Measure | Cum Actuals thru FY 2009 |
|--|------------------|--------------------------|
| <i>Measure</i> | | |
| Remediations & Facilities D&D'd | | |
| Remediations Completed | Release Sites | 368 |
| Facilities -Decommission & Demolition | | |
| Industrial Facilities- Major ¹ | | 232 |
| Nuclear Facilities | | 11 |
| Radioactive Facilites | | <u>7</u> |
| Total Facilities D&D'd | Major Facilities | 250 |

| FY 2010 Analysis | |
|------------------|---------------|
| Actuals FYTD | Annual Target |
| 8/31/10 | |
| | |
| 5 | 1 |
| | |
| 3 | 4 |
| 0 | 0 |
| <u>0</u> | <u>0</u> |
| 3 | 4 |

| End State (Lifecycle) Analysis | | | |
|--------------------------------|-----------|------------|-------------------------|
| Cum Act thru 2010 (FYTD) | End State | % Complete | Target Year to Complete |
| | | | |
| | | | |
| 373 | 515 | 72% | 2038 |
| | | | |
| 235 | 759 | | |
| 11 | 191 | | |
| <u>7</u> | <u>40</u> | | |
| 253 | 990 | 26% | 2032 |

Notes

1. Excludes smaller ancillary buildings

 On / Ahead of Schedule

 Behind Schedule

End State Basis

Area Completion End State Quantities and Target Year to Complete are based on 2008 Certified Life Cycle Plan

EM Performance Measures – thru August FY 2010

| <u>Recovery Act (2009 - 2012)</u> | Unit of Measure | 2009 Actual |
|---|-----------------|--------------|
| <i>Measure</i> | | |
| Funding Spent | | |
| SRNS | | 225,506 |
| SRR | | <u>104</u> |
| Total | \$ (000) | 225,610 |
| Solid Waste Disposition | | |
| RH-TRU Waste Shipped for Disposal | | 17 |
| CH-TRU Waste Shipped for Disposal | | <u>281</u> |
| Total Transuranic Waste Shipped | Cubic Meters | 298 |
| PAD 1 - % TRU Waste Removed | % | 0% |
| PAD 1 - % TRU Waste Disposed | % | 0% |
| Mixed Low Level Waste Disposed ¹ | | 325 |
| Low Level Waste Disposed ¹ | | <u>2,067</u> |
| Total MLLW / LLW | Cubic Meters | 2,392 |
| Maintain Newly Generated Low Level Waste Below Target Level | Cubic Meters | Met |
| Nuclear Material Disposition | | |
| Depleted Uranium Oxide Shipped | Drums | 0 |

| FY 2010 Analysis | |
|------------------|----------------|
| Actuals FYTD | Annual Target |
| 8/31/10 | |
| 460,033 | 520,093 |
| <u>77,612</u> | <u>100,000</u> |
| 537,645 | 620,093 |
| 0 | 1 |
| 456 | 520 |
| 456 | 521 |
| 82% | 100% |
| 0% | 0% |
| 68 | 78 |
| <u>7,126</u> | <u>7,577</u> |
| 7,194 | 7,655 |
| Met | < 400 |
| 6,214 | 6,214 |

| End State ARRA Analysis | | | |
|--------------------------|----------------|------------|-------------------------|
| Cum Act thru 2010 (FYTD) | ARRA End State | % Complete | Target Year to Complete |
| | | | |
| 685,539 | 1,415,400 | 48% | 2012 |
| <u>77,716</u> | <u>200,000</u> | 39% | 2011 |
| 763,255 | 1,615,400 | 47% | 2012 |
| | | | |
| 17 | 39 | 44% | |
| <u>737</u> | <u>4,961</u> | 15% | |
| 754 | 5,000 | 15% | 2012 |
| | | | |
| 82% | 100% | 82% | 2011 |
| 0% | 90% | 0% | 2012 |
| | | | |
| 393 | 755 | 52% | |
| <u>9,193</u> | <u>17,231</u> | 53% | |
| 9,586 | 17,986 | 53% | 2011 |
| | | | |
| Met | < 400 | NA | |
| | | | |
| 6,214 | 15,603 | 40% | 2011 |

Recovery Act Notes:

- 1. Legacy Waste disposition complete; Newly Generated Waste disposition is Ongoing

On / Ahead of Schedule

Behind Schedule

ARRA End State Basis
Recovery Act End State Quantities and Target Year to Complete are based on ARRA Certified Baseline

EM Performance Measures – thru August FY 2010

| <u>Recovery Act (2009 - 2012)</u> | | Unit of Measure | 2009 Actual | FY 2010 Analysis | | End State ARRA Analysis | | | |
|---|---------------|-----------------|-------------|------------------|--------------------------|-------------------------|------------|-------------------------|--|
| Measure | Actuals FYTD | | | Annual Target | Cum Act thru 2010 (FYTD) | ARRA End State | % Complete | Target Year to Complete | |
| Soil & Water Remediation | | | | 8/31/10 | | | | | |
| Characterized for Remediation | Waste Sites | 4 | 12 | 13 | 16 | 23 | 70% | 2011 | |
| Remediation Systems Installed | Systems | 2 | 3 | 6 | 5 | 12 | 42% | 2011 | |
| Remediations Completed | Release Sites | 2 | 5 | 1 | 7 | 14 | 50% | 2011 | |
| Ground Water Plumes Remediated | # of Plumes | 1 | 2 | 3 | 3 | 7 | 43% | 2011 | |
| Facility Decommission & Demolition | | | | | | | | | |
| Industrial Facilities- Major | | 0 | 3 | 4 | 3 | 10 | | | |
| Industrial Facilities- Ancillary | | | 4 | 4 | 4 | 4 | | | |
| Total Industrial Facilities | | | 7 | 8 | 7 | 14 | 50% | 2011 | |
| Radioactive Facilities | | 0 | 0 | 0 | 0 | 16 | 0% | 2011 | |
| Total Facilities D&D'd | Facilities | 0 | 7 | 8 | 7 | 30 | 23% | 2011 | |
| Reactors Decommissioned | # Completed | 0 | 0 | 0 | 0 | 3 | 0% | 2012 | |
| Operational Footprint Reduction (75%) | | | | | | | | | |
| Site Remediated/ Footprint Reduction | Square Miles | 0 | 75 | 109 | 75 | 233 | 32% | 2012 | |

On / Ahead of Schedule
 Behind Schedule

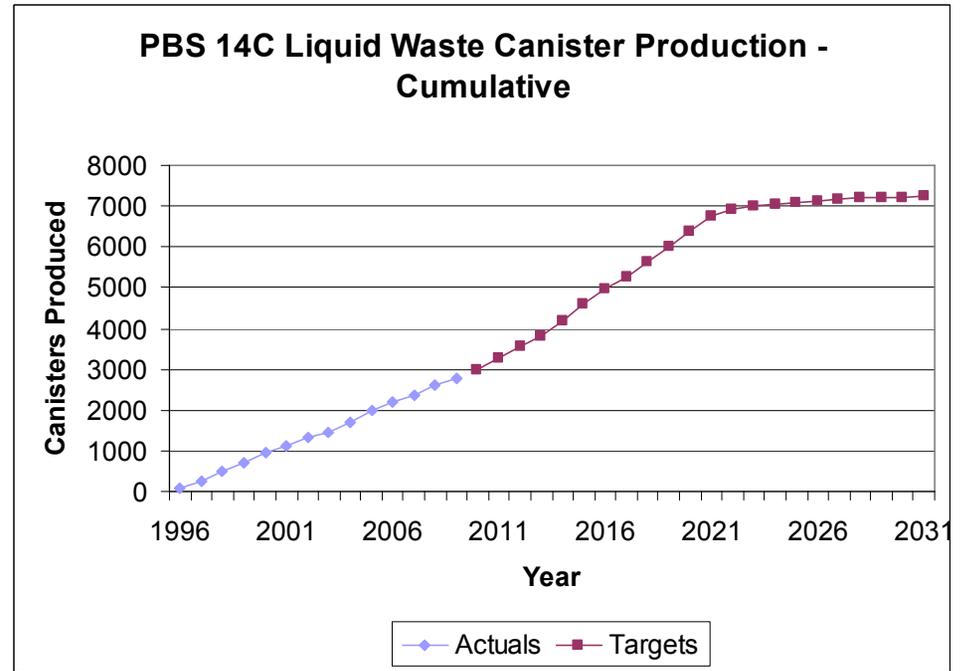
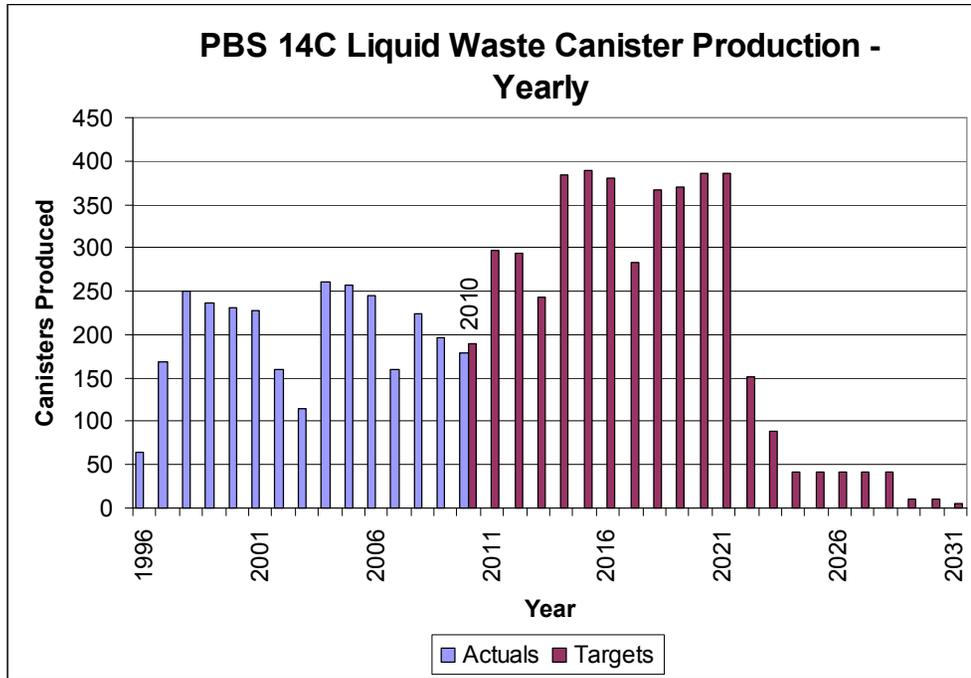
ARRA End State Basis
 Recovery Act End State Quantities and Target Year to Complete are based on ARRA Certified Baseline

Work in Progress

For each major Performance Measure, a graphical depiction of the lifecycle (historical and forward looking) is being developed

The following measure for Liquid Waste – Canister Production is an example of how such projections will be demonstrated

Example Analysis: Liquid Waste Canister Production



End State Basis: Liquid Waste End State Quantity and Target Year to Complete are based on Rev 15 System Plan

Summary and Path Forward

- DOE-SR will continue to develop Lifecycle graphs for the key operational areas of EM operations
 - Target: End of 1st qtr FY11
- Performance Measure targets for FY11 are being finalized and will be reflected in October (1st month of FY11) report
- Starting in FY11, TRU measure will be separated into Legacy & Newly Generated categories
- Suggestions from the CAB for any additional improvements are welcomed