

Savannah River Site Citizens Advisory Board

Recommendation #278 SRS Waste & By-Products Matrix

Background

The Savannah River Site (SRS) was built in the early 1950's. Its mission was to produce nuclear materials to support America's defense at a critical time in the United States' history. Over the more than 50 years of operation, a variety of nuclear wastes and by-products were generated at the site. Also, additional wastes and by-products have been brought to the SRS from other locations within the Department of Energy's (DOE) jurisdiction and from sources, both foreign and domestic, not part of the DOE system.

Over the years the awareness of the hazards associated with nuclear materials has increased. Handling technologies and work practices related to nuclear materials have improved to afford greater safety for workers at the site, stakeholders living in proximity of the site and other stakeholders.

Previous missions inevitably resulted in the generation of waste and by-products not intended to be stored at the site. The current mission of the site includes clean-up and remediation related to previous missions and work practices. The current mission also includes processing on-site and off-site materials, materials from outside the DOE complex and foreign receipts.

The mission of the CAB includes providing information to stakeholders about issues of concern to them. One issue of very high concern to the workers and stakeholders is the amount of waste and by-products that are currently on site or potentially coming to the site. SRS was never intended, studied or tested to be a long term repository for nuclear wastes and by-products. Recent developments related to the Yucca Mountain Repository have raised the level of concern about how DOE plans to meet its commitments to SRS stakeholders i.e., to expeditiously disposition waste from SRS to a designated national repository.

Recommendations

1. The CAB recommends that the Department of Energy provide an initial **SRS Waste & By-Products Matrix** in the requested format (See attached example matrix and notes on format). The initial matrix should be completed no later than the scheduled November 15th 2011 Full Board meeting. The initial matrix should list all wastes and by-products at the site, planned to come to the site or under consideration to come to the site.
2. The CAB recommends that the Department of Energy provide semi-annual updates to the CAB that contains the past updates in order to facilitate monitoring progress vs. commitments.
3. The CAB recommends that the Department of Energy provide **SRS Waste & By-Products Matrix** reports that are useful for posting on the CAB webpage. These reports can be in the requested format or any other format that the CAB and DOE deem useful to workers and stakeholders.
4. The CAB recommends, as a starting point, that the Department of Energy provide a preliminary, one time, Waste Inventory report. The scope of this inventory is nuclear and hazardous wastes stored in L Basin, H and F Tank Farms, Glass Waste Storage Building, K-Area Material Storage, and E/N Areas (See last page).

Notes on format:

The format is an Excel spreadsheet with a single worksheet for each semi-annual update. Each separately identifiable material should be listed. A material is considered separately identifiable if it is different from other materials in its source, material type or disposition path. The sample format is attached with an example material completed (not necessarily correct) to show the requested level of detail and an explanation of the fields is below:

Material

Material Type:

1. Uranium (HEU, DUO, etc.)
2. Plutonium (Pu-239, Pu-238, etc.)
3. MOX
4. Tritium
5. Contaminated with other nuclear materials
6. Chemically contaminated
7. Other Contaminates
8. Heavy water

Source:

There are several known sources of Nuclear Waste and By-products including:

1. SRS Legacy material
 - a. Tank cleanouts
 - b. Other (specific)
2. Nuclear materials and spent nuclear fuel from other DOE sites.
3. Nuclear materials and spent nuclear fuel from domestic non-DOE sites.
4. Material from foreign reactors and other sources
5. Material from dismantling nuclear weapons
6. Other

Quantity (in allowable units)

1. Currently at SRS
2. Anticipated amount yet to be received at SRS
3. Amount shipped to other sites from SRS

Potential Vulnerabilities

1. Describe present storage form
2. Describe timeframe for storage in this present condition
3. Describe "Driver" for storage in more stable configuration
4. Describe proposed end state

Disposition Path

1. DOE decisions required to allow processing or disposition
2. Funding plans & issues, equipment or process planned for disposition
3. Final disposition location not interim storage
4. Investments required to allow processing or disposition
5. Potential issues (political or technical) to disposition
6. Estimated final disposition date

Storage:

1. Description of storage facilities at SRS
2. Percent of current storage facilities currently being utilized

3. Quantification of additional storage facilities required at SRS

Status:

1. Percent of total waste or by-product sent to final disposition since previous report or intermediate progress as appropriate.

Specifications, Prototype Waste Inventory Report

Waste of Interest: All wastes stored at facilities identified on the CAB's "Savannah River Site, Waste and Material Flow Path" Chart:

1. L- Basin
2. F- and H-Tank Farms
3. Glass Waste Storage Buildings
4. K-Area Material Storage Facility
5. E/N-Area
6. Other storage facilities not identified on the Flow Chart.

Information of Interest

1. Curies of radioactive wastes
2. Net weight of radioactive and hazardous wastes
3. Gross volume and weight of dispositioned wastes.

It is requested that these inventories be available to the CAB less than 30 days after receipt of this recommendation.

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Adopted date: July 26, 2011

Sponsored by the Waste Management Committee

SRS Waste & Nuclear Materials Matrix

Material Type	Material Source	Quantity		Potential Vulnerabilities	Potential issues (political or technical to final disposition)	Decisions Required / Decision Process / Due Date for Action	Disposition Equipment & Process Required	Funding Plans & Issues	Final Disposition Location	Estimated final Disposition Date	Storage			Status		
		Currently at SRS	To Be Received								Shipped from SRS to Other Sites	SRS Storage Location	Occupancy of current storage	Anticipated investment in storage facilities	% Complete	% Completed since Last report
Example																
Storage Tank Supernatant Liquid	SRS Legacy Waste	35.4 MM Gal 175 M Curries	0	0	Moderate Risk of tank risk	Resolution of final long term repository	Yucca Mountain Repository resolution of other long term strategy	Salt waste processing / salt stone / DWPF / Glass Waste Storage	Completion of SWPF Completion of long term repository	Long term repository yet to be defined	Unknown	Glass waste storage facilities	75% full	Up to 3 additional glass waste buildings required as \$5MM each	Tank cleaning 40% Glassification 30% Final disposition 0%	Tank cleaning 35% Glassification 25% Final disposition 0%