SRS Citizen's Advisory Board

Recommendation No. 119

March 28, 2000

Compacted Versus Non-Compacted Waste Disposal in the E-Area Trenches

Background

SRS is currently implementing the Solid Waste System Plan (Ref. 1) which allows SRS to use the E-Area trenches for low level waste (LLW) that meets the Waste Acceptance Criteria (WAC). Otherwise, this waste with very low radionuclide concentration would be taking up space in the LLW disposal vaults that were specifically designed for high activity LLW. The SRS CAB has supported this aspect of the System Plan (Ref. 2). The predicted results of this action will increase the useful life of the vault space by 14 years and save over $63 million dollars (Ref. 3).

As part of the System Plan, three major LLW streams were compared to the trench WAC versus vault disposal. These included (1) non-incinerable/non-compactable, (2) compacted, and (3) waste currently stored in the vaults. During this assessment, the necessity to sort and compact certain waste types prior to trench disposal has surfaced as an issue, which warrants further attention. SRS has estimated an approximate cost of $4,000 per cubic meter to sort and compact waste. This compaction was initially instituted to maximize disposal space in the vaults. Since this waste stream meets the trench WAC and can now go to the trenches for disposal, the need to compact has come in question. Currently, over 6,000 cubic meters of waste which meets the trench WAC has been compacted. SRS would have realized a cost saving of $24 million dollars if this waste did not need to be compacted prior to disposal.

Comments

In addition to the cost savings, the SRS CAB sees a reduction in SRS worker exposure as an added benefit to eliminating the need to sort and compact waste. However, the SRS CAB wants assurance that the increased volume of non-compacted waste is manageable within the current space allotted for trench disposal. Furthermore, the SRS CAB is concerned about the technical issues of disposal of non-compacted waste, specifically potential long-term subsidence of the soil cover. While it is believed that the elimination of the need to compact waste would save operational funds today, the SRS CAB wants to know if this savings would be off-set by the increase in the costs of treating subsidence and consequently the long term costs of closing the trenches.

Recommendations

The SRS CAB supports the need to evaluated waste compaction and specifically recommends that SRS:

1. Investigate the need (technical, operational, and protection of human health and the environment) to compact wastes planned for trench disposal as part of the System Plan evaluation. Identify the waste steams that could be disposed without compaction and the cost that could be avoided if these wastes were not compacted prior to disposal.
2. Ensure technical concerns are defined or addressed during the System Plan evaluation including subsidence potential and impact to the Performance Assessments (PAs) and Composite Analysis (CAs). Specifically, a comparison of long range performance of the trenches with and without waste compaction across different strategies to reduce subsidence should be investigated. The investigation should also include the potential impacts of compaction versus non-compaction will have on closure of the new trenches as a function of the operating strategies.
3. Provide the SRS CAB by July 25, 2000, the System Plan schedule to perform these evaluations.

References

1. System Plan for the Solid Waste Division, Westinghouse Savannah River Company, Report WSRC-RP-98-00226, Revision 1, February 22, 1999.
2. SRS CAB Recommendation 94, "Solid Waste Division system plan Low-Level

Radioactive Waste Disposal", July 27, 1999.

3. SRS CAB Commendation, "Use of the E-Area Trenches Versus the E-Area Vaults for LLW Disposal", March 28, 2000.

Agency Responses

Department of Energy-SR