

**BACKGROUND INFORMATION REGARDING
NRC REVIEW OF SRS HLW TANK SALT FRACTION CLASSIFICATION**

Discussion: U.S. Department of Energy - Savannah River (DOE-SR) has received recommendations from the Westinghouse Savannah River Company for replacement of the in-tank precipitation (ITP) process that had been under development for treatment of high-level radioactive waste (HLW). Westinghouse was forced to suspend work on this waste separation project in December 1997, after determining that it could not resolve longstanding technical problems, including safety and production concerns associated with a very flammable chemical -- benzene -- generated by the ITP process. DOE-SR and its contractors are considering several approaches for ITP replacement. The primary alternative is "small tank precipitation" which is similar in nature to the original ITP process, but is performed in small tanks built to safely manage the benzene produced in the precipitation process. The second alternative would be based on ion exchange technology, and would not generate benzene. The third alternative, involves grouting the salt waste (including Cs) and disposing of it on-site as "incidental waste." The alternatives differ in their effectiveness in separating Cs-137 from the HLW fraction. The grouting alternative is the least effective in this regard.

With respect to the third (grouting) alternative, DOE-SR has informally requested that NRC evaluate its determination that the salt fraction of the waste, once grouted and disposed of on-site, is not classified as HLW. The NMSS/DWM position on this request is that NRC has insufficient resources to perform this review, given current and projected workloads.

SRS/NMSS
February 12, 1999

**OPTIONS FOR CONSIDERATION OF DOE SRS PROPOSED
DRAFT MOU FOR HLW TANK SALT FRACTION DISPOSAL**

1. **Develop separate MOU/IA for disposition of salt fraction waste as proposed by DOE in the draft MOU.**

Points to consider:

- separability of new MOU with existing MOU for tank closure and nexus to NRDC Petition.
- time consuming, resource intensive effort to develop new MOU with need for significant coordination and Commission paper.

2. **Amend existing MOU for tank closure as provided for by agreement of both parties to encompass all requested waste classification evaluations (tank closure, salt waste disposal, evaporator disposal, etc.).**

Points to consider:

- relative ease and small effort to amend MOU - would not necessarily need Commission paper.
- any complexities associated with NRDC Petition that would be better isolated in one MOU.

3. **Advise DOE to perform a waste classification evaluation for grouted salt waste onsite disposal against the 3 Bernero criteria to determine if the waste is clearly incidental. If it is clearly incidental, DOE need not consult with NRC.**

Points to consider:

- DOE believes the salt waste classification is in the "gray" area even though the waste is class C with a Cs-137 concentration of 250Ci/m (Part 61 class C limit is 4600Ci/m).
- The additional inventory of Cs-137 in shallow land disposal from direct grouting would be several orders of magnitude greater than that estimated from current in tank processing (120MCi vice 26,000 Ci).

4. **No action. Advise DOE that we don't have resources to support their TA request.**

Points to consider:

- DOE is considering other alternatives to direct grouting but would still like to know if this approach has any fatal flaws if no other technologies are technically and economically feasible.
- Evaluations by NRC are given considerable import by the state (S. C.).
- CNWRA and NRC staff are already familiar with site features and characteristics and would apply this knowledge to salt waste evaluation.
- Believe that ENGB can support this activity with addition of 2 engineers this past year.
- Ways to convert TA dollars to FTE, if desirable.

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