

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 27, 1999

**TO:** G. W. Cunningham, Technical Director  
K. Fortenberry, Deputy Technical Director

**FROM:** D. F. Owen, RFETS Site Representative

**SUBJECT:** RFETS Activity Report for the Week Ending August 27, 1999

Staff member J. Troan and outside expert D. Volgeneau were on site this week reviewing implementation of the RFETS work control program in Building 771.

**Building 771 Deactivation.** Size reduction operations using the new Inner Tent Chamber were started on Wednesday of this week. Initial operations on the first glovebox (removal of glovebox windows) were observed by Board staff. The PremAire suit in use (full body outer “bubble” garment and hood, with supplied air and full face respirator) made for awkward and difficult movement of the three person crew within the outer enclosure. RFETS will be collecting various radiological data during at least the first 10 gloveboxes to support a future decision on whether the new Inner Tent Chamber can be used with a reduced level of personnel protective equipment, such as powered air purifying respirators.

The engineering design package for the next generation (or Phase 2) Inner Tent Chamber was provided to the staff this week and is under review. (III-B.1.a)

**Recommendation 94-1.** An amended Record of Decision addressing management of sand, slag and crucible residues (SS&C) was issued this week. As a result, RFETS is now planning on shipping SS&C to WIPP for disposal in lieu of SRS for processing as currently stated in the DOE Implementation Plan for Recommendation 94-1. DOE-RFFO will request formal plans and resource estimates from Kaiser-Hill regarding this change and is intending to work with DOE-Headquarters to develop a revised Recommendation 94-1 Implementation Plan. The Attachment provides a summary of information provided to the staff by DOE-RFFO and Kaiser-Hill representatives on tentative plans and preliminary estimates regarding this change. (III-A.1.a)

**Building 771 Work Control Program:** Board staff and an outside expert reviewed implementation of the RFETS Integrated Work Control Program (IWCP) in Building 771 deactivation activities. While progress is being made, deficiencies were noted with the understanding of the IWCP and execution of hazard analysis and development of safety controls for worker protection under the IWCP. Most noteworthy, radiological hazards and controls continue to be separately analyzed and defined and not fully integrated with the main hazard analysis and development of controls efforts during activity work planning. The staff will report separately to the Board on this review. (III-B.1.a)

cc: Board Members

**Information Related to Shipping RFETS Sand, Slag and Crucible (SS&C) to WIPP**

- Inventory: The RFETS SS&C inventory is about 3000 kg of bulk material containing about 130 kg of plutonium. The RFETS SS&C is **not** considered to be mixed waste by Colorado, which has a RCRA-related reciprocity agreement with New Mexico.
- Material Packed in Preparation for Shipment: About 2800 kg of SS&C has been packed in preparation for shipment. The material is packed in 1673 produce (or "food pack") cans in nylon bags. Approximately 1100 kg of this packed inventory has greater than 20 Curies (Ci) per produce can. SRS has received 112 kg in 71 produce cans.
- Planned Efforts to Ship RFETS SS&C to WIPP:
  1. Obtain a Revision to the TRUPACT-II SARP: Vented containers are currently required for shipment within the TRUPACT-II. RFETS is developing justification that the produce cans and nylon bags vent hydrogen. Failure to obtain this revision will require all produce cans containing SS&C to be unpacked in a glovebox and repacked into vented containers prior to packaging for shipment.
  2. Direct Packaging of Cans: Produce cans that have less than 10% Pu concentration would not require blending-down to meet safeguards limits. Up to about 1200 of the produce cans are estimated to have less than 10% Pu and would be placed directly into Pipe Overpack Containers (POCs) without repacking in a glovebox. This population includes almost all of the approximately 900 produce cans in the less than 20 Ci population and up to about 300 cans from the greater than 20 Ci population.
  3. Blending Down: The remaining population of produce cans having greater than 10% Pu concentration would be unpacked and blended-down with material having less than 4% Pu. The produce cans with blended-down material would then be placed into POCs.
- Facilities and Schedule: The glovebox operations would be done in Building 371, Room 3602. Salt residue operations are currently planned in Room 3602 until about August 2000. SS&C operations would then start and last about 6 months (single shift), completing in March 2001. Failure to obtain revision to the TRUPACT-II SARP and having to repack all SS&C cans would add up to 6 more months to the planned SS&C operations. Such additional operations would potentially delay the planned start of deactivation of Room 3602 from May 2001 to October 2001.
- Cost: RFETS roughly estimates that this effort will cost between \$9-10 million, including operations, packaging the cans in about 1000 POCs, and WIPP certification and shipping preparations.