

Session 63
Panel: US Disposition Issues for Orphan and High Activity Mixed Waste Streams

Panel Reporter: Dick Blauvelt, Navarro Research and Engineering Inc.

This panel was assembled to focus primarily on disposition issues of orphan and high activity mixed radioactive waste. Particular attention was given to the significant inventories of 10-100nCi/g alpha mixed waste that was formerly managed as TRU waste at the generator sites but will not be headed for WIPP where concerns for preserving and optimizing capacity have affected generator load management activities. This inventory must now be treated to meet RCRA LDR requirements and be disposed of at the DOE Nevada Test Site mixed waste disposal cell which has both a limited capacity and disposal window. The panel members, facilitated by co-chairs Dick Blauvelt and Dave Eaton, CH2M-WG Idaho, reviewed and discussed the issues yet to be addressed to meet the challenges represented by this disposition activity.

The panel members included;

- Jeff Mousseau, Bechtel BWXT Idaho, LLC.
- Luke Reid, WSRC SRS
- Ken Hargis, LANS
- Jhon Carilli, US DOE NSO
- Renee Echols, Permafix
- Christine Gelles, US DOE EM HQs

Luke Reid represented one of the three generator sites on the panel and provided information regarding the treatment by macro encapsulation. Mr Reid reviewed the selection process that arrived at the use of welded stainless steel boxes for macro encapsulation. A total of 500 drum equivalents of waste were repackaged in 25 boxes for shipment to NTS. Mr. Reid also reviewed issues associated with the permitting and operation of the treatment facility, addressing the NTS WAC and the particular challenge of meeting the NTS criterion of a 90% fill volume.

Ken Hargis described the problem from the LANL site prospective. After discussing the success that LANL has had in dispositioning most of its low level mixed waste inventory, Mr' Hargis laid out the issues for the 10-100 nCi/g waste. The estimated volume of the waste is about 5000 drum equivalents of mostly debris waste but also some homogeneous sludge. It is further estimated that between 25% and 75% of the inventory is mixed waste. It must be characterized, treated, packaged and shipped to NTS prior to December 2010, a daunting task.

Jeff Mousseau, the third generator representative, spent some time in describing the significant effort the INL has undertaken in the retrieval, treatment, characterization, certification and shipment of the large TRU waste inventory stored there. They are currently the major supplier of waste to WIPP which has an impact on dealing with the problem of dispositioning their large inventory of 10-100 nCi/g mixed waste within the window of opportunity at NTS. Mr Mousseau indicated that the estimated volume could be as much as 12000M3 or approximately 60000 drum equivalents, much of which is still below grade and not retrieved. He also detailed for the

attendees some other significant challenges awaiting INL in retrieval and other certification operations.

Renee Echols presented the role the Permafix, a commercial treatment vendor, has played and will continue to play in the disposition of both DOE and commercial mixed waste that were at one time considered orphans. They are working in concert with both LANL and INL to facilitate appropriate treatment to satisfy LDR requirements. A particulate advantage that Permafix has is its ability to handle for treatment type higher activity quantities of radioactive waste. They have also achieved certification n from NTS for disposal of both low level and low level mixed waste.

Jhon Carilli provided input from the disposal site perspective. Mr. Carilli reviewed the history that has led to the current window of opportunity for DOE generators to dispose of mixed waste at NTS. The allowable volume is 20000M3 with a deadline of December 1, 2010, whichever comes first. Based on the shipments made to date, it appears that the clock will probably expire before the volume cap is reached. As of January 25, about 14 months into the 5 year window the site had received 8100 Ft3 of waste. The five year projection from the sites is for a volume that is only 25% of that allowed. NTS stands ready to assist and encourage the generator sites as it is able.

Christine Gelles, the disposition program manager from DOE EM in Washington wrapped up this session as she acknowledged that it is unlikely that the volumes of 10-100 nCi/g mixed waste currently stored at DOE sites could be dispositioned before the 12/1/10 deadline, which all agree is firm. Some of the alternatives include resolution of the NEPA issues at the Hanford site which could potentially make that location available for mixed waste disposal as had been proposed by DOE. A second approach would be to apply for a RCRA permit at NTS that would include a full blown RCRA style disposal facility with liners, leachate collection etc. Thirdly, the proposed WCS disposal facility could become a reality that would afford the DOE generators an approved disposal site for higher activity mixed waste. DOE EM is committed to explore all options for disposition of this and all other problematic mixed waste streams.

The session was reasonably well attended and was described by both the participants and attendees as an interesting and timely topic. Follow-up meetings are planned for all stakeholders and a follow-on session will be scheduled for WM08.