

## WM2009 Conference Panel Report

### **Panel Session 53: Disposition of US DOE High-Activity Mixed LLW-What Capacity Do We Really Need**

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

This panel was assembled to focus on the disposition of DOE high activity mixed waste. The US DOE sites have the bulk of the inventory of 10-100nCi/g alpha mixed waste that was formerly managed as TRU but is not eligible for WIPP disposal. In addition, its activity exceeds the limits for the Energy Solutions mixed waste disposal site. Furthermore, it must now be treated to meet LDR requirements. Permafix and Energy Solutions are currently authorized to treat B, C- like mixed waste. The treated waste can only be disposed of at the DOE Nevada Test Site and the NTS has a window of opportunity for the disposition of these mixed waste streams that will close on December 1<sup>st</sup> of this year. Identification, characterization and treatment to meet LDR standards prior to certification and shipment for disposal have proven to be time consuming and costly with shipments to NTS to date falling short of what is authorized. With that window definitely closing, panel members considered what options could be and/or should be pursued to assure continued access for disposition of mixed B/C waste inventories from DOE. The panel discussed the potential for access to the Hanford site, the possibility of seeking a fully permitted site at the NTS and whether the WCS Class A, B, C mixed waste disposal site slated to be open in the third quarter of 2010 could serve the DOE mixed waste inventory of interest. All panel members along with the attendees and facilitated by co-chairs Dick Blauvelt and Christine Gelles, DOE/EM HQ, reviewed and discussed the issues and the challenges represented by this disposition activity.

The panel members included

- James Zovi, Bechtel BWXT Idaho, LLC.
- James Blankenhorn, LANL
- Renee Echols, Permafix
- Paul Larsen, Energy Solutions
- Jhon Carilli, US DOE NSO
- Ty Blackford, CH2M Hill, Hanford
- Mike Lauer, Waste Control Specialists
- Christine Gelles, US DOE EM HQ

James Zovi noted that the INL has about 13000M3 of low level mixed waste that must be treated prior to disposal. The target date for working off this inventory is 2015 with 29108 being the compliance date negotiated with the State. While treatment of some of the waste can be a problem, the larger issue for INL is where the waste can go after the current NTS site is closed.

Renee Echols discussed the multiple treatment capabilities of Permafix, a commercial treatment vendor with NTS certification for disposition of mixed waste including DOE's high activity mixed waste. They have recently received authorization for a thermal destruction unit for PCBs. Along with standard macro encapsulation techniques, stabilization, and solidification, they have remote size reduction and sorting

capabilities. They are able to handle SNM and high does rate materials. In addition, R&D facilities are able to develop treatment techniques for problematic waste streams.

Paul Larsen from Energy Solutions provided an update on their Bear Creek TN facility that provides a second commercial option for treatment of high activity mixed waste. The RCRA permit currently allows macroencapsulation along with a sort and segregate operation. Future treatment processes to be permitted at Bear Creek will include but is not limited to stabilization, amalgamation, chemical reduction and deactivation. Energy Solutions has NTS certification.

Jhon Carilli provided input from the NTS low level mixed waste disposal site perspective. The allowable volume of mixed low level waste is 20000 M<sup>3</sup> with a deadline of December 1, 2010, whichever comes first. When the site opened in 2005 it was projected that less than 50% of the capacity would be utilized. Projections now indicate that close to 84% of the capacity will be used if the forecasts hold true. The majority of that waste will come in FY2010. Through 2/1/09 a total of 5895 M<sup>3</sup> has been received. Jhon noted that there is a zero tolerance policy for non-compliance with the NTS WAC. He highlighted several instances where waste shipments had to be returned and certification was lost for a period of time for one generator. He indicated that the site is eager to assist generators in getting their mixed waste to NTS for disposal before the window closes.

Ty Blackford from the Hanford site talked about the Environmental Remediation Disposal Facility (ERDF) which is for onsite only remediation, low level and low level mixed waste. Hanford is working off its mixed waste inventory utilized on site and commercial treatment vendors. A second facility, the Integrated Disposal Facility (IDF) is currently authorized for 165,000M<sup>3</sup> but could have a total capacity of 1 million M<sup>3</sup>. That would allow the disposition of offsite mixed waste but would require some permit revisions and settling of some NEPA issues. Co-located treatment storage and disposal capability make it an attractive alternative

Mike Lauer of Waste Control Specialists (WCS) discussed the existing capabilities they have for treatment, storage and disposal of radioactive, mixed radioactive and hazardous waste. While they have certain unique capabilities for long term storage of a host of radioactive materials, the focus of interest has been on the status of the license to operate a class A, B, C mixed waste disposal facility for Federal mixed waste. The final license was received on January 14 and construction will begin at the end of June with the facility being operational in July of 2010. The capacity of the Federal Waste Disposal Facility will be 8.1M ft<sup>3</sup> of Class A, B and C low level and low level mixed waste

Christine Gelles, the Director of the Office of Disposal Operations for DOE EM in Washington wrapped up this session. She indicated that there is a high priority in DOE EM to move forward with the disposition of this waste at all DOE sites. There will likely be some added support for this effort from the administration's stimulus package. With the current mixed waste disposal site closing as scheduled in December, DOE is giving serious consideration to seeking a fully permitted mixed waste disposal cell at NTS. It is possible that it could be ready in time for seamless disposition. In addition, DOE will continue to monitor progress on NEPA and other issues at the Hanford Reservation. Discussions with WCS regarding the most recent events at their site relevant to the disposal of federal high activity mixed wastes will continue.

The session was well attended. The participants support a follow-on session and expressed the need for a full session on this topic to allow the participation of additional generators and a more complete presentation and discussion of the issues. Dick Blauvelt will take this recommendation to the PAC.