On Monday, May 12, I left my Denver house at 7AM and returned at 11PM, having spent the day on flights that were aborted, or waiting for customer service, or waiting for an evening flight that was cancelled without warning or reason. I thus missed the Tuesday WIEB HLRW Committee meeting and the Ad Hoc Working Group meetings, but managed to arrive just in time for the networking reception.

The following notes exclude sessions that I was unable to attend:

- **DOE Transportation Topics**: reports by Scott Wade (NNSS), Dan Sullivan (WVDP) and Jeff Shelton (ORNL).
- The Interface Between Storage and Transportation: reports by Nigel Mote (NWTRB), Bernard White and David Pstrak (NRC), and Adam Levin (AHL Consulting).
- Enhancements to Shipment Security: reports by Mike Wangler (DSOE-NE), Willie Lee and Stuart Easson (NRC), Craig Moss (ORNL), and Carla Schreiber (NE State Patrol).
- Emergency Response Planning, Training, and Exercises: reports by Laura Dressen (IN & CSG/MW), Mike Rutherford (TX Dept of State Health Svcs), Tom Clawson (TRG), and Ellen Edge (DOE-EM).
- Engaging States, Tribes and the Public: reports by Ken Niles (OR & WIEB HLRW), Heather Westra (Prairie Island), Blake Williams (Secured Transp Svcs), Charles Messick (NNSA).

**Keynote Speaker: Lake Barrett**

Lake Barrett (former acting director of DOE-OCRWM) discussed the prospects for the nation’s high-level radioactive waste program, noting that, while the sun is the best disposal site, it poses a transportation problem. Since the sun is not readily accessible, Barrett thinks Yucca Mountain would still provide safe disposal, and that Yucca’s tuff is more “adaptive” than other disposal media.

Barrett’s view is that DOE (responding to Harry Reid and other Democrats who don’t want a disposal solution) is hiding behind the BRC recommendations—consent-based siting, a new single-purpose agency, etc. However, with federal breach of contract costs running at about $500MM annually, reality will eventually kick-in, forcing action of some sort. Meanwhile, Barrett advocates initiatives on railcar development, storage facility siting and generic repository standards.

Barrett anticipates a Senate hearing on shutdown reactors, but does not anticipate real action (establishment of a Federal Corporation; a permanent funding fix) until after Obama leaves office at the end of 2016.

**WIPP Status**

Andy Walker and Steve Casey provided a status report on WIPP. Current indications are that:

- There was no linkage between the salt haul truck fire at WIPP’S north end and the later release, in disposal panel #7.
- There was no roof bolt failure, and no roof fall.
- Organic (rather than inorganic) absorbent material (used as packing in disposal drums) may have caused drums to burst, releasing radionuclides.
- Drums were packaged with organic absorbent material in Los Alamos; some such drums may have been shipped to WCS in Texas.
Walker and Casey offered no estimates regarding:
- When the recovery process might be complete;
- Drums that might need to be removed and re-packaged;
- Whether repackaging would occur at WIPP or at the shipment origin;
- The implications for the DOE-EM TRU waste program;
- Impacts of the WIPP closure at other DOE sites;
- The lessons learned reporting process.

**Transportation Information Systems**
- Truck safety: Gaylon Fuller (CAST) and Randahl Mills (Visionary Solutions) reported on several truck safety devices:
  - ZONAR, used for electronic pre-trip and post-trip vehicle inspections.
  - OnGuard: a collision mitigation system;
  - SafeTrak: provides lane departure warnings;
  - EOBR: Electronic on-board recording: records hours-of-service; communications; fuel tax obligations.
- Web-TRAGIS: Mark Tuttle reported on TRAGIS improvements, as Mark Abkowitz rolled out START in the lobby.
- TRANSCOM3: Sharon Taylor reviewed the capabilities of TRANSCOM3, which is operated from the TRANSCOM Communication Center in Carlsbad, NM. Taylor is an employee of MaChis/LCITE, a tribal economic development agency based in Kingston, AL.
- Transportation Security and the Global Threat Reduction Initiative: Paul Singley (ORNL) discussed (in general terms) capabilities (such as geo-fencing) used to enhance security in transport.

**Rail Shipment Planning, Execution, and Regulation**
- Ray English (NNPP) reviewed dedicated train shipment under the DOE/DOE settlement agreements with UP, BNSF, Norfolk-Southern, and (upcoming) CSX.
  - The carrier must provide dedicated train service, if requested.
  - The shipment surcharge is about $35 per mile\(^1\).
  - Extra service charges will apply to enroute inspections, outreach support, limitations on carrier routing choices, extra security, etc.
  - Ray was asked about “safe havens” as they apply to rail shipment. He replied that safe havens are not much used in rail shipment. Sidings used as safe havens would be picked by the rail carrier. Rail carriers can “create” a safe haven by doing certain things.
- Terri Kneitel described the process she went through to transport low-level radioactive waste by rail from Brookhaven National Lab. Her presentation was my favorite from NTSF’14. The complications and hassles are eye-popping, highly entertaining, and the basis for some serious lessons-learned.
- Gary Vaughn is the Watco VP for transportation rules and regulatory compliance, based in Pittsburg KS, about 100 miles south of Kansas City. Watco owns several shortline railroads. He

\(^{1}\) Ray says that, without the settlement agreements, the surcharge would be $100/mile. He did not say whether these charges apply equally to single and multiple cask dedicated trains.
observes that shortlines rarely have alternative routes. He uses a tool called HTRAM, as an alternative to RCRMS\(^2\).

- Kevin Blackwell reported that FRA’s report on the Lac-Mégantic rail accident\(^3\) is not yet complete. He says that the accident is clearly attributable to human error, with little connection to SNF transport. He referred us to recent Railroad Safety Advisory Committee\(^4\) recommendations on securement, train crew size, and risk reduction, and to the DOT Secretary’s “Call to Action” in response to recent oil tanker car accidents.\(^5\)

**Preparing to Ship Spent Nuclear Fuel**

Jeff Williams reviewed the status of his Nuclear Fuel Storage and Transportation program, noting that, at present, we don’t know where we are going or when. Still, the BRC report (in Chapter 13) noted items that could and should be addressed while waiting for legislative direction. The NFST program costs $33MM annually, and includes significant systems analysis work (very little of which has been discussed with the WIEB HLRW Committee or other SRGs). NFST has Hank Jenkins-Smith working on siting preferences, but no inquiry into transportation risk perception was

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\(^2\) The Rail Corridor Risk Management System (RCRMS) is a software tool that provides assistance to all Class I railroads in the routing of hazmat shipments to meet federal requirements. RCRMS was developed under a project originally funded by DHS/FEMA for $5,000,000. Subsequently, CSX funded the project for continued refinement and to enhance the tool functionality for $4,754,293. RCRMS is the result of thorough analysis and prioritization of the 27 risk factors identified by the TSA to be accounted for in all hazmat rail route planning. RCRMS undergoes modifications and updates based on continuing analysis of rail hazmat transportation data. The project has been funded in four phases and the current year award is $1,893,060 with $1,514,488 provided by the FRA. This project was completed in December 2012.

\(^3\) The Lac-Mégantic derailment occurred in the town of Lac-Mégantic, located in the Eastern Townships of the Canadian province of Quebec, at approximately 01:15 EDT, on July 6, 2013, when an unattended 74-car freight train carrying Bakken formation crude oil ran away and derailed, resulting in the fire and explosion of multiple tank cars. Forty-two people were confirmed dead, with five more missing and presumed dead. More than 30 buildings in the town's centre, roughly half of the downtown area, were destroyed. Initial newspaper reports described a 1 km blast radius.

\(^4\) FRA: Railroad Safety Advisory Committee. The Committee shall seek agreement on the facts and data underlying any real or perceived safety problems; identify cost effective solutions based on the agreed-upon facts; and identify regulatory options where necessary to implement those solutions. In determining whether regulations are necessary, the Committee shall take into account section 1(a) of Executive Order 12866 (Regulatory Planning and Review). [https://rsac.fra.dot.gov/home.php](https://rsac.fra.dot.gov/home.php)

\(^5\) In response to recent accidents involving crude oil shipments by rail in the U.S. and Canada, U.S. Transportation Secretary Anthony Foxx has issued a "Call to Action," calling on rail company executives, associations, shippers, and others to discuss how stakeholders can prevent or mitigate the consequences of rail accidents that involve flammable liquids. Nearly a million shipments of hazardous materials move throughout the U.S. each day. While most of these shipments reach their final destinations without incident, accidents can and do occur. DOT remains committed to the safe transport of flammable liquids by all modes of transportation, including the nation’s 140,000 mile freight railroad network. The Department’s safety approach includes efforts to ensure shippers and carriers are taking all of the required precautions to transport flammable liquids safely. In 2012, PHMSA and the Federal Railroad Administration began focusing heavily on the safe transport of crude produced in the Bakken Shale region of the U.S. On August 29, 2013, PHMSA and FRA launched Operation Classification to verify that crude oil is being properly classified in accordance with federal regulations. This includes activities such as unannounced spot inspections, data collection and sampling at strategic terminal and trans-loading locations that service crude oil.
It appears that NFST is committed to “mostly rail, using dedicated train”, and is contemplating rail upgrades to make that work.

Matt Feldman of ORNL is DOE’s “lead lab person” regarding SNF transportation. He sees lots of overlap between institutional, operational, and hardware dimensions of the task. He will meet with the railroads (AAR?) next Friday on operational issues, and is planning tabletop reviews of initial routes. (Really? When we still don’t know where we are going or when?) It appears that DOE is still deciding whether AAR rule S-2043 requires 8 or 12-axle railcars. Each railcar, it appears, will carry a single cask, but there are 8 different cask types, with different weights and configurations.

Jay Jones says that the recently-released Draft NTP focuses on the goals of the BRC report, addresses the National Academies’ 2006 recommendations, and is consistent with WIPP and FRR transport experience. He requests feedback, and plans a series of webinars.

Erica Bickford discussed Section 180(c). Tammy Ottmer asked whether DOE will publish a Federal Register Notice to capture the results of the current Interregional Team initiative. Jeff Williams agrees that this might be a good idea, but notes that it is not his decision. Jane Beetam asked whether DOE will address routing criteria—why one route might be preferred over another.

Several retirements were noted:
- Ray English, from NNPP, on June 26.
- Chuck Messick, from NNSA;
- Jane Beetam, from the State of Missouri and CSG/MW