Waste Isolation Pilot Plant

WIPP STATUS UPDATE
Presented to
Southern States Energy Board
Joint Meeting of the Radioactive Materials Transportation Committee and Transuranic Waste Transportation Working Group
Charleston, South Carolina
December 11, 2013

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Transportation Packaging Manager
National TRU Program
U. S. Department of Energy
Carlsbad Field Office

CBFO Goals 2014

MISSION
Provide safe, compliant, and efficient characterization, transportation, and disposal of defense TRU waste.

VISION
Enable a nuclear future for our country by providing safe and environmentally responsible waste management.
Planned Shipping Activities

<table>
<thead>
<tr>
<th>Site</th>
<th>FY-2013</th>
<th>FY-2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argonne National Laboratory</td>
<td>35</td>
<td>44</td>
</tr>
<tr>
<td>Idaho National Laboratory</td>
<td>372</td>
<td>497</td>
</tr>
<tr>
<td>Los Alamos National Laboratory</td>
<td>185</td>
<td>246</td>
</tr>
<tr>
<td>Savannah River Site</td>
<td>178</td>
<td>110</td>
</tr>
<tr>
<td>Oak Ridge National Laboratory</td>
<td>0</td>
<td>45</td>
</tr>
<tr>
<td>Totals</td>
<td>770</td>
<td>959</td>
</tr>
</tbody>
</table>

New Initiatives

NRC TRUPACT-II Revision 23 and HalfPACT Revision 6

- Submitted April 2012
- Approved June 2013
- New payload container the Critically Control Overpack (CCO)
- Higher Fissile Gram Equivalent (5,320 FGEs per shipment maximum, 380 FGEs per container)
- Reclassification of TRUPACT-HalfPACT outer vessel from containment to confinement
- Addition of normal conditions of transport activity limits
- Revisions to fabrication and maintenance drawings to facilitate repairs

New Initiatives cont.

- Increase funding for WIPP infrastructure improvements
- Obtain approval for two additional disposal panels
- Conduct Salt Experiments
- Resume ORNL shipments
- Begin TRUPACT-III shipments from LANL and INL
Accomplishments

- Received 700th RH shipment
- Received first shipment of Shielded Containers
- Initiated the Southeast New Mexico Roadway Safety Integrated Project
- Assisted LANL in meeting the New Mexico Framework Agreement (removal of 2,600 m³)
- Received NM Mine Operator of the Year award

1st WIPP Shielded Container Shipment

- Argonne National Laboratory – September 9, 2013
- Each HalfPACT
  - One shielded container assembly
  - Three shielded containers
- Three HalfPACT’s
- 9 containers per shipment
- Potential to reduce number of RH 72 B shipments

Shielded Container

- Used to ship remote-handled TRU waste in contact-handled shipping packages (HalfPACT)

<table>
<thead>
<tr>
<th>Height (inches)</th>
<th>Inside - 29¾</th>
<th>Outside - 35¾</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diameter (inches)</td>
<td>Inside - 20¾</td>
<td>Outside - 23¾</td>
</tr>
<tr>
<td>Maximum Gross Weight</td>
<td>2,260 pounds</td>
<td></td>
</tr>
<tr>
<td>Empty Weight</td>
<td>1,726 pounds</td>
<td></td>
</tr>
<tr>
<td>Lid</td>
<td>33 inch thick carbon steel</td>
<td></td>
</tr>
<tr>
<td>Bottom</td>
<td>3 inch thick carbon steel</td>
<td></td>
</tr>
<tr>
<td>Outer shell</td>
<td>11 gauge carbon steel</td>
<td></td>
</tr>
<tr>
<td>Inner shell</td>
<td>7 gauge carbon steel</td>
<td></td>
</tr>
<tr>
<td>Shielding</td>
<td>1 inch nominal lead casting</td>
<td></td>
</tr>
<tr>
<td>Inner Payload</td>
<td>30 gallon drum</td>
<td></td>
</tr>
</tbody>
</table>
Shielded Container Being Surveyed at ANL

WIPP Status

- Disposal capacity of 6.2 million cubic feet
  - Current volume disposed: approximately 3.2 million cubic feet
- Over 14 million loaded miles
  - Shipments expected to continue up to 2050 time frame
  - Dependent on waste identification/acceptability
- 22 generator sites cleaned of all legacy TRU waste
- WIPP maintenance outage scheduled for 2/14/14 – 3/10/14 (no shipments during outage)

Total Shipments (as of December 2, 2013)

| Contact Handled | 11034 |
| Remote Handled  | 724   |
| **Total**       | **11,758** |
Shipments Received (as of December 2, 2013)

<table>
<thead>
<tr>
<th>Site</th>
<th>Shipments</th>
<th>Loaded Miles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argonne National Laboratory</td>
<td>191</td>
<td>327,893</td>
</tr>
<tr>
<td>Bettis Atomic Power Laboratory</td>
<td>5</td>
<td>10,655</td>
</tr>
<tr>
<td>GE Veloxco Nuclear Center</td>
<td>32</td>
<td>44,800</td>
</tr>
<tr>
<td>Idaho National Laboratory</td>
<td>5,774</td>
<td>8,034,624</td>
</tr>
<tr>
<td>Los Alamos National Laboratory</td>
<td>1,311</td>
<td>448,362</td>
</tr>
<tr>
<td>Lawrence Livermore National Laboratory</td>
<td>18</td>
<td>24,804</td>
</tr>
<tr>
<td>Nevada Nuclear Security Site</td>
<td>48</td>
<td>57,312</td>
</tr>
<tr>
<td>Oak Ridge National Laboratory</td>
<td>131</td>
<td>173,903</td>
</tr>
<tr>
<td>Rocky Flats Environmental Technology Site</td>
<td>2,045</td>
<td>1,466,444</td>
</tr>
<tr>
<td>Hartford Site</td>
<td>572</td>
<td>1,034,176</td>
</tr>
<tr>
<td>Sandia National Laboratory</td>
<td>8</td>
<td>2,200</td>
</tr>
<tr>
<td>Savannah River Site</td>
<td>1,623</td>
<td>2,438,348</td>
</tr>
<tr>
<td>Total To WIPP</td>
<td>11,758</td>
<td>14,045,851</td>
</tr>
</tbody>
</table>

WIPP Transportation Training

- Training Team Lead is Marsha Beekman, (575) 234-8487. Call Marsha to schedule training.

- Training completed (January through November 30, 2013)
  - MERRTT 346
  - MERRTT T-T 75
  - Compressed MERRTT 269
  - Hospital Course 146
  - Dispatcher 12
  - Total Trained 850

- Exercises
  - Conducted a WIPPTREX in Andrews, TX, December 5, 2013

Carrier Audits (Calendar Year 2013)

Carlsbad Field Office Surveillance Audits - Incorporated DOE Motor Carrier Evaluation Program (MCEP) Checklist
- Cast Specialty Transportation, Inc. - Conducted June 25 – 27, 2013: No findings
- One recommendation regarding records organization and storage
- Visionary Solutions, LLC - Conducted May 21 – 23, 2013: No findings

State Contract Carrier Reviews
- Cast Specialty Transportation, Inc. - Conducted by Colorado State Patrol on April 30, 2013: No findings
- Visionary Solutions, LLC - Conducted by Tennessee Highway Patrol on May 7 – 8, 2013: No findings

Calendar Year 2014 Audits

- Conducted by Carlsbad Technical Assistance Contractor
Budget

??

Hours-of-Service Rules as of July 1, 2013

• May drive only if 8 hours or less have passed since end of driver’s last off-duty or sleeper-berth period of at least 30 minutes [49 CFR 397.5 mandatory "in attendance" time for hazardous materials may be included in break if no other duties performed]

• Sleeper Berth Provision
  – Drivers using a sleeper berth must take at least 8 hours in the sleeper berth, and may split the sleeper-berth time into two periods provided neither is less than 2 hours.

DOT Guidance on Off-Duty Time

Federal Register July 12, 2013

• Question 2: What conditions must be met for a commercial motor vehicle driver to record meal and other routine stops made during a work shift as off-duty time?
  – Guidance: Drivers may record meal and other routine stops, including a rest break of at least 30 minutes intended to satisfy 49 CFR 395.3(a)(3)(ii), as off-duty time provided:
    1. The driver is relieved of all duty and responsibility for the care and custody of the vehicle, its accessories, and any cargo or passengers it may be carrying.
    2. During the stop, and for the duration of the stop, the driver must be at liberty to pursue activities of his/her own choosing.

DOT Hours-of-Service Exemption

- DOE requested a limited exemption from the hours-of-service regulation pertaining to rest breaks (49CFR 395.3(a)(3)(ii)), to allow contract-driver employees transporting security-sensitive radioactive materials to be treated the same as drivers transporting explosives, as provided in §395.1(q). Section 395.1(q) states that operators of commercial motor vehicles carrying Division 1.1, 1.2, or 1.3 explosives subject to the requirement for a minimum 30-minute rest break in §§395.3(a)(3)(ii) may use 30 minutes or more of “attendance time” to meet the requirement for a rest break.

- Compliance with §395.3(a)(3) is required by July 1, 2013.

WGA Surveillance Requirement

- WGA PIG Requirement: “Carrier and its drivers must provide constant surveillance of all loaded (TRU waste) shipments.”

  Note: The term “constant surveillance” is explicitly defined in the contract and generally requires at least one driver to remain awake in the front of the tractor cab or to stay within 100 feet of the vehicle and keep it in constant unobstructed view.

Hours-of-Service Exemption

- Valid July 1, 2013 to June 30, 2015
- For DOE security-sensitive radioactive materials (includes TRU waste)
- Must carry copy of exemption
- Use real-time tracking (TRANSCOM for TRU shipments)
- Use of electronic on-board recorders
- FMCSA monitors safety performance
**Hours-of-Service Exemption**

- **WIPP Driver Rotation**
  - 11 hours driving on start (at 8 hrs, a 30-min break)
  - Rotate drivers
  - 10 hours berth time (at least 8 hrs continuous)
  - Rotate drivers
  - 10 hours driving time (at 8 hrs, a 30-min break)
- Exemption allows us to record security surveillance as non-driving duty time (not off-duty time) and take credit for breaks.

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**TRANSCOM**

**Overview of Changes and Status**

**Functional Concept**

- Transport unit is assigned a communication transponder
- Transponders communicate with terrestrial and satellite technology
- Vehicles send positional data at predefined intervals
- Messaging is bidirectional
- Position, message, and other data are polled by TRANSCOM for inclusion into the database
TRANSCOM Communication Center

TRANSCOM Communication Center (TCC)

- Operators
  - Staff monitoring center and help desk 24/7
  - Maintain system operability
  - Track shipments, log anomalies, set security controls
  - Liaison with shippers, carriers, and DOE stakeholders
  - Manage communication and status changes within application
- Coordinate outages for maintenance of system
- Set scheduling arrangements, ensure seamless tracking and mediation of users

81 Organizations in 29 States

430 Total Users

- Administrators/Operators: 19
- Shippers: 32
- Carriers: 3
- Group Admin: 84
- Read Only Users: 302
### Shipments per year

**Annual Shipments - FY 2001 - 2013**

- Over 23,400 shipments.

### Types of Shipments

- **Shipment Types monitored by TRANSCOM FY01 - FY13**
  - Transuranic: 48.7%
  - Special nuclear materials: 26.7%
  - Spent / Foreign Reactor Fuel: 1.4%
  - Equipment tracking (no load)

### Status – Nov 2013

- **TRANSCOM** system 3.0 released December 2012
- **Basic System Features:**
  - Modern MCP200 transponders from Qualcomm
  - Data service from Omnitracs
  - Terrestrial and satellite feeds
  - Logical data hub
  - Oracle DB
  - Standardized maps and TRANSCOM data layers
  - Web interface (no client software)
- **New 5-year contract award made to MaChis LCITE on November 14, 2013, for TRANSCOM system and communication center**
Features/TRANSCOM 3.0

- Access shipment details from the status board: vehicle information, latest position, messages, copy of BOL, and view route
- User preferences (e.g., email shipment status changes, audible alerts, etc.)
- Enhanced mapping: Road distance between 2 points, access to shipment details, messaging, weather report for shipment location, Google API interface
- New system alerts improve transportation security for TCC (e.g., shipment stops, transponder stops updating, driver is not authenticated when vehicle starts, etc.)

Features (cont.)

- Compatible with mobile web devices (Tested: iOS and Android)
- Reporting output available PDF or CSV format
- Organization account management module – allows designee (Group Administrator) to add/remove read-only users from their organization

New TCC Help Site

- Features
- On-line training
- User forms
- Announcements
- Newsletter

For more information on TRANSCOM please visit the official website or contact your support team.
User Training

On-Line TRANSCOM Training
- Access to training on the TCC support site at http://tcc.transcom.energy.gov
- Step-by-step videos with narrative for each user type
- Screen casts provide visual guidance for each topic covered
- Self-paced exams are available at same link with immediate feedback

Classroom Training
- 2014, there will be a reduction in the number of traditional classes
- Users will be asked to provide their own interface devices (iPads, laptop, etc.)
Security Controls

Layers of controls in place to protect information:
- **Access:** authentication, role-based access to shipping types, and user privileges matched to application modules to fit needs.
- **Data:** encryption employed at database and web application.
- **Physical:** DOE monitored and guarded facility.
- **Virtual:** Redundant data feed, with layered network infrastructure.
- **Administrative:** Access controlled on a need to know basis; TCC staff trained, tested on security procedures.
- **Other:** COOP site for backup, two locations for emergency ops.

Contacts

DOE TRANSCOM Program Manager:
- Stephen Casey (steve.casey@cbfo.doe.gov)
- 575.234.7643

TRANSCOM Contractor:
- Ma-Chis, Lower Creek Indian Tribe Enterprises
- Project Manager - Sharon Taylor
- Help Desk Support 575.234.7105

User help site: [http://tcc.transcom.energy.gov/](http://tcc.transcom.energy.gov/)
### TRU Transportation Incidents/Accidents
(September 2012 through September 2013)

<table>
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<tr>
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<th>Carrier</th>
<th>Mutation</th>
<th>Event Type</th>
<th>Details</th>
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<tbody>
<tr>
<td>9/1/12</td>
<td>GBG</td>
<td>8005</td>
<td>Out of Service Collision</td>
<td>Vehicle involved in a collision with another vehicle, causing damage to both vehicles. No injuries reported.</td>
</tr>
<tr>
<td>9/1/12</td>
<td>GBG</td>
<td>8005</td>
<td>Traffic Accident</td>
<td>Vehicle involved in a minor traffic accident with another vehicle, no injuries reported.</td>
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