

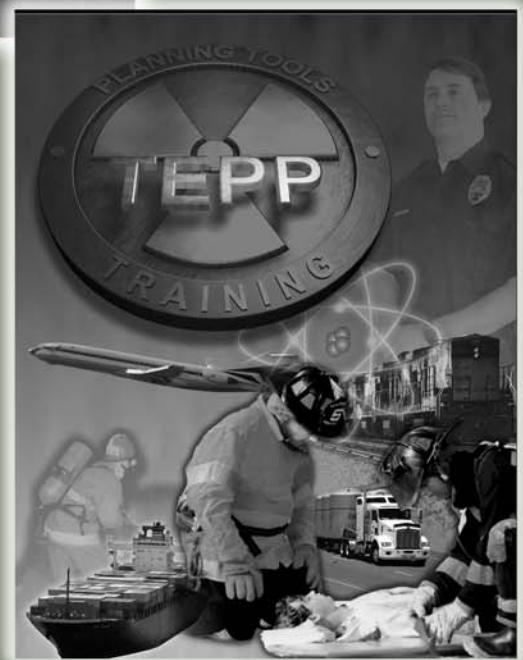
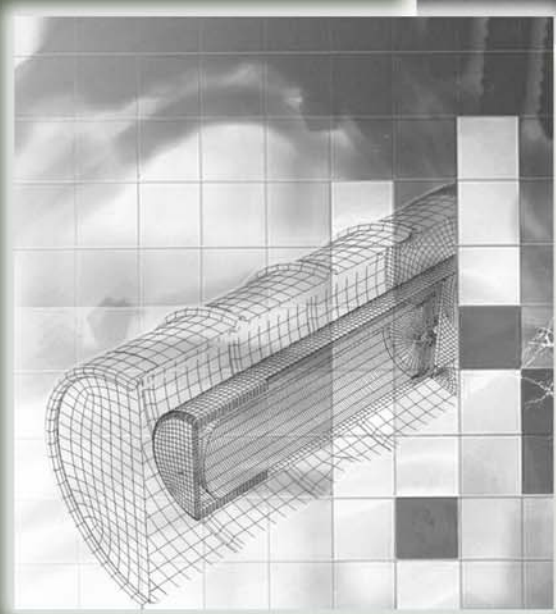
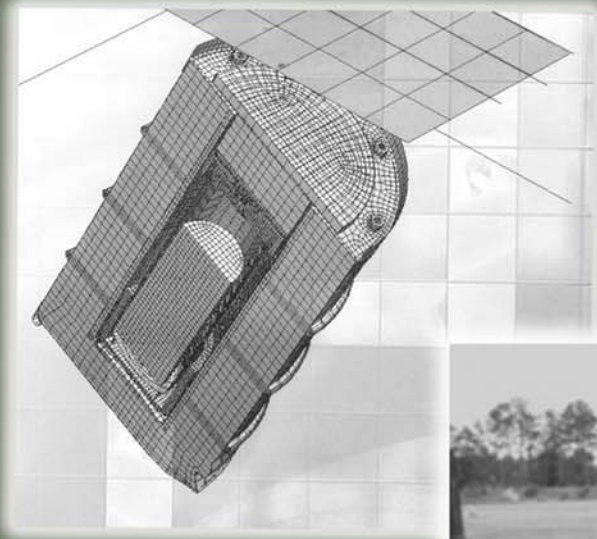
US Department of Energy  
Office of Packaging  
and Transportation



*Working to Ensure the Safety and Security of Hazardous Materials Shipments*

# Annual Report

## FY 2012



# Executive Summary



The Office of Environmental Management (EM) was established to mitigate the risks and hazards posed by the legacy of nuclear weapons production and research. The most ambitious and far ranging of these missions is dealing with the environmental legacy of the Cold War. Many problems posed by its operations are unique, and include the transportation of unprecedented amounts of contaminated waste, water, and soil, and a vast number of contaminated structures during remediation of the contaminated sites. Since Fiscal Year (FY) 2004, EM has completed over 150,000 shipments of radioactive material and waste.

The mission of the Department of Energy (DOE) Office of Packaging and Transportation (OPT) positioned within EM is to provide the tools, guidance, support, and oversight to assure that shipments of radioactive and other hazardous materials are carefully planned, tracked, safe, secure, timely and efficient to meet the needs of DOE programs, and to protect the health and safety of workers and the public. In FY 2012, DOE made over 13,000 hazardous material shipments. EM made about 75 percent of the shipments. *OPT provides the centralized support, expertise, and efficiency that cannot be provided through a site-by-site ad hoc approach.*

Some major accomplishments in FY 2012 include:

- Completing 34 package certification actions related to review and approval of new transportation packages, amendments, renewals, special approvals, and terminations.
- Coordinating with the Energy Facility Contractors Group to resolve Departmental transportation issues such as the *Release Contamination Limits Working Group*, which worked to identify inconsistencies in radiation survey requirements between shipping and receiving sites, leading to non-acceptance of shipments at the receiving sites.
- Collaborating with the General Services Administration in efforts to bring the Department's transportation/traffic management activities in line with other Federal agencies in an effort to reduce overall transportation costs.
- Negotiating tenders rates with truckload (TL) and less-than-truckload (LTL) carriers for Department-wide use. The negotiated tender rates resulted in a savings of 10 percent for TL shipments and 28 percent for LTL shipments.
- Partnering with state and tribal instructors, along with instructors from the DOE Radiological Assistance Program and the Waste Isolation Pilot Plant, the Transportation Emergency Preparedness Program (TEPP) provided 112 training courses in 26 different states, resulting in 2,009 responders being trained. An additional 57 state-taught brings the total to 2,853 responders trained in 169 classes using TEPP training materials.

- Recognition at the Secretary's Honor Award Program for Packaging Certification Program (PCP) staff contributions to the Argonne National Laboratory Nuclear Footprint Reduction and Deactivation Plan. PCP worked with a diverse group of Federal and contractor employees who persistently and innovatively worked together across several organizations and DOE programs to achieve a highly favorable result.
- Providing assistance to the field through transportation compliance assessments at Portsmouth Gaseous Diffusion Plant and Moab sites, by identifying cost avoidance opportunities and working to implement program and process enhancements.





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## 1. OVERVIEW OF THE OFFICE OF PACKAGING AND TRANSPORTATION

The Office of Packaging and Transportation (OPT) in the Office of Environmental Management provides packaging and transportation services to the entire DOE complex. The Atomic Energy Act of 1954, as amended, gives DOE broad authorities to regulate all aspects of activities involving radioactive material that are undertaken by DOE or on its behalf, including transportation. Authorities for OPT flow from 41 CFR 109-40, which establishes DOE's transportation management authorities, and DOE Orders 460.1, *Packaging and Transportation Safety*, DOE Order 460.2, *Departmental Materials and Transportation Management*, and DOE Manual 460.2-1, *Radioactive Material Transportation Practices Manual*. The Manual was developed through a collaborative effort under the Senior Executive Transportation Forum (established by the Secretary of Energy in January 1998) to coordinate the efforts of Departmental elements involved in the transportation of radioactive material and waste.

The mission of OPT is to provide the tools, guidance, support, and oversight to assure that DOE shipments of hazardous and radioactive material are carefully planned, tracked, safe, secure, timely and efficient to meet the needs of DOE programs and to protect the health and safety of workers and the public. OPT is constantly seeking opportunities for cost savings and leveraging Departmental resources to utilize economies of scale. By doing this, sites reduce operating expenses associated with packaging and transportation activities and are able to apply more of their funds to other mission support needs. OPT provides the following services for the Department:

- *Program and Site Support:* Managing and coordinating the Departmental transportation logistics program including automated systems and tools, carrier evaluations, national freight rate tenders and contracts negotiations, and availability of commercial transport equipment to meet programmatic requirements.
- *Regulations and Standards Support:* Monitoring transportation regulatory actions by reviewing Federal Register, IAEA, and other agency documents that may impact DOE operations and keeping program offices and the federal and contractors packaging and transportation community at DOE sites informed of changes.
- *Packaging Certification:* Managing the DOE Packaging Certification Program for certification of fissile and Type B packagings which conform to U.S. Department of Transportation (DOT) and U.S. Nuclear Regulatory Commission (NRC) requirements.
- *Transportation Risk Reduction:* Optimizing Departmental transportation logistics by providing services such as evaluation of safety and performance metrics, identifying opportunities for improvements and risk reduction, performing site packaging and transportation compliance assessments, and managing the DOE motor carrier evaluation program to ensure activities are safe, secure, economical, and meet applicable regulatory requirements.
- *Emergency Preparedness and Outreach:* Administering the Transportation Emergency Preparedness Program (TEPP) to address concerns expressed by corridor states and tribes about planning and preparedness along the DOE shipping corridors.



## 2. PACKAGING AND TRANSPORTATION HIGHLIGHTS IN FISCAL YEAR 2012

### 2.1 PROGRAM AND SITE SUPPORT

Maintaining a transportation logistics program that includes automated systems/tools, carrier evaluations, negotiation of national freight rate tenders/contracts, and availability of commercial transport equipment to meet programmatic requirements.

#### 2.1.1 *Automated Transportation Management System*

Early development of the Automated Transportation Management System (ATMS) was prompted by a 1989 DOE Inspector General's report outlining significant opportunities for cost savings and operational efficiency through electronic commerce. Today's system allows users to electronically prepare shipments, determine best rates, prepare shipping documents, and audit transportation bills before they are paid. It helps users evaluate carrier performance and use collected data to analyze opportunities for system-wide and site-specific logistics improvements. An important feature of ATMS is its capability to safely manage radioactive and other hazardous materials shipments in a complex regulatory environment.

ATMS is a force-multiplier technology which delivers a framework enabling management and operations to ensure risk informed and cost effective decisions are made. These efforts allow the reduction of operational costs by combining requirements into a centralized enterprise architecture following the methodology that as contractors change, the tools they use to support DOE's mission do not, thus preserving historical data that can be used for future transportation activities.

In FY 2012, to improve access and reduce overall operating/maintenance costs, ATMS adopted a "cloud first" policy to align with datacenter consolidation initiatives driven by the Office of the Chief Information Officer. ATMS is becoming more "data aware," allowing users to have better access to information in a timely, targeted and prioritized manner. This will enable OPT to have better benchmark data and assist in reducing transportation costs across the complex.

OPT has undertaken an initiative to conduct a pilot test of the General Services Administration's (GSA) new transportation management system (Transport Integrator). The purpose of the pilot is to determine if the DOE community can benefit from using the GSA system in some combination with the ATMS. The pilot is scheduled to be completed in May 2013 with a determination of a path forward by the end of FY 2013.

OPT is collaborating with the Department of Transportation (DOT), Pipeline and Hazardous Materials Safety Administration (PHMSA), Hazardous Materials Automated Cargo Communication for Efficient and Safe Shipments (HM-ACCESS) initiative to identify and eliminate barriers and reduce Departmental costs through the use of paperless hazard communication technologies. This approach will improve the delivery of critical hazardous materials safety information throughout the transportation chain. OPT shared information about current initiatives at Oak Ridge National Lab and cost benefits which have been realized by electronic shipping systems. PHMSA's is exploring approaches that define transportation system requirements necessary to allow enhanced hazardous material communication using electronic transfer of information. ATMS has aligned its framework to accommodate HM-ACCESS initiative as well as support the Environmental Protection Agency initiative, eManifest.

### 2.1.2 Energy Facility Contractors Group

OPT worked to establish the Packaging and Transportation Subgroup (PTSG) under the Energy Facility Contractors Group (EFCOG) Waste Management Working Group to seek out and promote the best management and operating practices associated with the packaging and transportation activities at DOE and National Nuclear Security Administration (NNSA) facilities. The PTSG is focused on complex wide integration and experience transfer while supporting cost effective and efficient hazardous and radioactive materials and wastes packaging and transportation options. Initiatives underway include:

- Problem with Suspect Counterfeit Components on DOT Approved Ratchet Type Straps – Tie Down Strap Working Group:* Sites were finding suspect counterfeit bolts and discarding the devices. Per DOT Regulations 49 CFR 393.108, straps are tested to their breaking point. When strap tie down devices fail, it is normally the webbing that has failed, not the ratchet device. The EFCOG Quality Assurance (QA) Group recommended that procurement specifications not call out or specify the size or grade of bolts to be utilized in the tie down ratchet mechanism, and instead specify only the “breaking strength” of the straps.
- DOE v. DOT Release Contamination Limits:* Receiving sites were finding contamination on incoming shipments and rejecting those shipments. The PTSG found there is an inconsistency between the criteria used by the shipping and receiving sites. They are working to develop a consistent approach to meet applicable regulations for release and acceptance of packages and commercial carrier equipment used for transportation of radioactive material at DOE sites.
- Trailer Contamination Super Sack Sub Working Group:* Shipments with soft-sided (super sack) packages were arriving at receiving sites with contaminated trailers. The group developed a number of recommendations and best practices to prevent or minimize the recurrences of equipment contamination issues, and the proper use of soft-sided packaging for transport and disposal of waste. The final report with recommendations was transmitted to the Associate Deputy Assistant Secretary for the Office of Waste Management on October 4, 2012.



### 2.1.3 Transportation Management Council

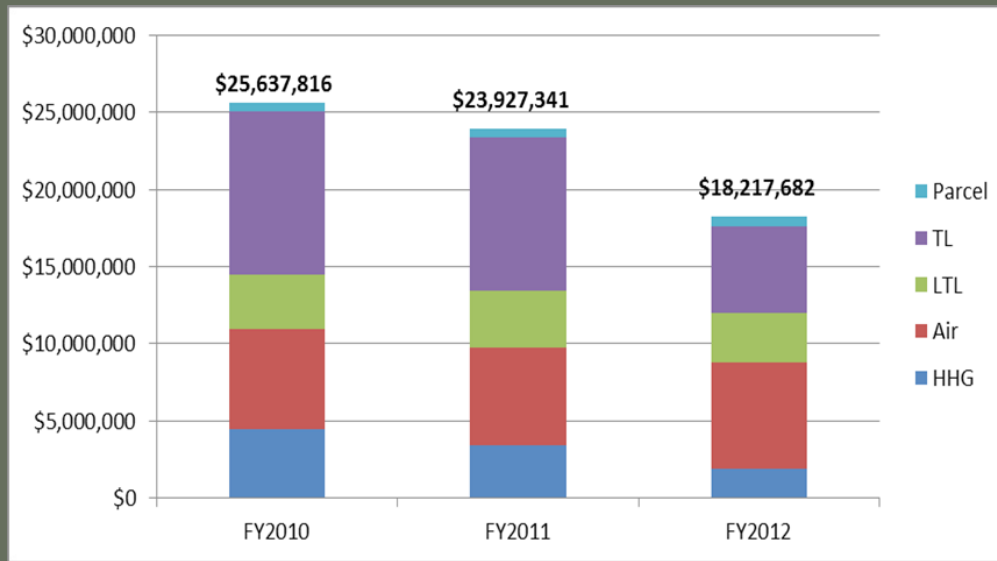
OPT serves as the federal advisor to the Transportation Management Council (TMC). TMC provides a forum for the identification, analysis, and resolution of traffic management, transportation operations, and transportation safety issues to support the shipping needs of DOE and its contractors. TMC promotes cooperation and communication across programmatic and contractor lines; effective resource utilization; consistent application of requirements; and standardization of traffic management, transportation operations, and motor carrier safety.

One important goal for the TMC is the negotiation of tender rates with carriers for the entire complex. In FY 2012, TMC completed the renegotiation of tenders for both the Less Than Truck Load (LTL) and Truck Load (TL) carriers. Based on information from ATMS, DOE realized a cost avoidance through use of the negotiated tenders in calendar year (CY) 2012 of 24.8 percent, or a \$6 million savings. The transportation



spend reported in ATMS for the past 3 years is presented in the chart below. Overall, transportation costs are down; however, because not all sites use ATMS, the transportation spend is likely much higher.

**Total Transportation Spend by Year**



NOTE: Represents only those sites that use ATMS—about 20 shipping sites.

**2.1.4 Packaging Management Council**

OPT serves as federal advisor to the contractor’s Packaging Management Council (PMC). PMC addresses Departmental challenges with the selection, procurement, design, fabrication, loading, and movement of packages containing hazardous/radioactive material. Due to the diversity in technical and regulatory knowledge required to fully understand the packaging requirements for these materials, PMC provides a forum for the identification, analysis, and resolution of DOE packaging issues.

Through the Supplier Evaluation Working Group, PMC developed supplier QA evaluation checklists, including sixteen different DOT areas of disciplines and welding requirements. These checklists can be used by all DOE contractors when procuring hazardous/radioactive material containers, thus reducing the costs associated with each contractor to develop their own checklists.

In September 2012, PMC began coordinating with the EFCOG QA Working Group to review and standardize current packaging specifications including appropriate QA requirements for the commonly used DOT-compliant 55-gallon drum. The joint EFCOG/PMC working group is focused on reducing the costs associated with procurement of these types of drums by establishing one DOE drum specification to be used by all sites. Doing so will result in significant cost avoidance for the sites by providing the ability to procure standardized drums that meet the necessary safety functions at a lower cost.



### 2.1.5 Site Support of Transportation Activities

OPT routinely supports site transportation activities by providing information, coordination and guidance. Some examples of this support are discussed below.

*Foreign Research Reactor (FRR) Cross Country Shipments:* EM has joint responsibility with NNSA for the cross-country FRR fuel return shipments destined for Idaho and Savannah River Sites. In FY 2012, two shipments were completed – one eastbound (first time), and one westbound. OPT worked with NNSA to develop the transportation plans and to coordinate the shipment schedules, communications, and notifications with the states and tribes along the transportation corridors.

- In late summer, Idaho National Lab (INL) shipped previously irradiated but usable fuel elements to Vienna, Austria. The shipment was made to send used low-enriched nuclear fuel from the INL storage facility to the Savannah River Site (SRS), and then on to a research reactor in Austria to support the return of the high enriched nuclear fuel back to the INL in support of the FRR program objectives.
- In early winter, spent fuel was transported from an overseas TRIGA research reactor via the Naval Weapons Station port in Charleston, South Carolina, now known as the Joint Base Charleston – Weapons Station, to Savannah River Site and subsequently cross-country to INL.
- *Radioisotope Thermoelectric Generators (RTGs) Transportation to Nevada National Security Site for Disposal:* OPT provided assistance to Oak Ridge in preparing fact sheets and coordinating communications with the State Regional Groups to support five shipments of RTGs to Nevada. The RTGs were designed to be used in for various missions; however, they were never deployed for use and have been stored at the Oak Ridge National Lab (ORNL). It was determine the RTGs could be disposed as waste at the Nevada National Security Site. OPT reviewed and approved the use of a Type B package (Model 2000 shipping cask) for shipping the RTGs.



## 2.2 REGULATIONS AND STANDARDS SUPPORT

OPT monitors the Federal Register for regulatory actions that would impact the DOE packaging and transportation community. In FY 2012, over 41 actions were identified. This information is provided to the DOE community through OPT's Regulatory Update Newsletter, as well as the OPT field conference calls. OPT coordinates inputs from the field and other DOE organizations for providing unified Departmental comments to requests for Notices of Proposed Rulemaking.

### 2.2.1 American National Standards Institute (ANSI)

OPT supports the management of ANSI N14 Standards Committee on Packaging and Transportation of Radioactive Materials (N14) by actively participating in Executive Committee meetings and through consensus standards development. The use of consensus standards results in cost avoidance by providing an acceptable process for meeting regulatory requirements. In FY 2012, OPT worked with the ANSI N14 Committee to issue the following standards:

- N14.1 - Packaging of Uranium Hexafluoride for Transport



- N14.7 - Guide to the Design and Use of Shipping Packages for Type A Quantities of Radioactive Materials
- N14.36 - Measurement of Radiation Level and Surface Contamination for Packages and Conveyances

### **2.2.2 International Standards Organization (ISO)**

OPT participates in the activities and collaborates in the development of ISO consensus standards to ensure effective and efficient transportation of DOE shipments. ISO Standards 7195, *Packaging of Uranium Hexafluoride (UF<sub>6</sub>) for transport*, and 12807, *Leakage Testing of Packages*, are based on ANSI N14.1 and N14.5. ISO agreed to consider transforming N14.7 and N14.36 into ISO standards after the publication by ANSI.

In FY 2012, OPT continued to work with the International Atomic Energy Agency through the Transportation Safety Standards Committee as a member of the US delegation along with DOT and the NRC to ensure that international standards adopted by the US will not have an adverse impact on DOE packaging and transportation activities.

## **2.3 PACKAGING CERTIFICATION PROGRAM**

OPT manages the DOE Packaging Certification Program (PCP) for review and approval of fissile and Type B packages. This program is authorized under DOT regulations and is required to be maintained at least equivalent to the NRC packaging certification program. OPT works closely with NRC to ensure consistency, prevent unnecessary NRC involvement in DOE package certification activities, and explore evolving analytical approaches for more accurate results. This partnership with NRC continues to strengthen and results in more efficient and effective use of Departmental resources complex wide. PCP provides technical support, guidance and training to enhance the effectiveness and efficiency of the package certification process, from the conceptual stage to termination of the packaging life. This improved efficiency and coordination has resulted in many millions of dollars in savings to the Department over the past decade.

### **2.3.1 Packaging Certification Training Courses and Guidance**

The PCP program supports all aspects of DOE packaging certification needs, including providing guidance and training for key activities:

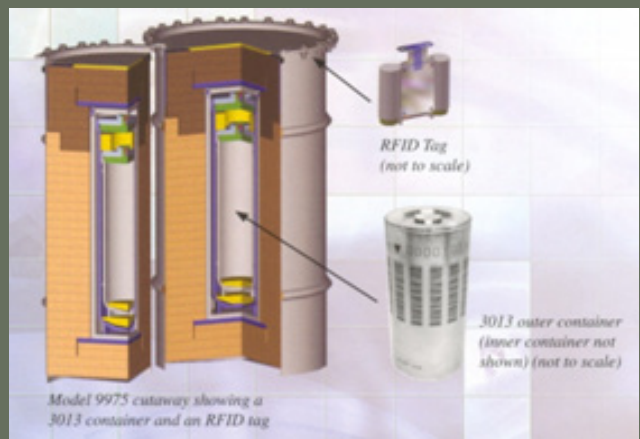
- Preparation and review of Safety Analysis Reports for Packaging
- ASME Code compliance for packaging design and fabrication (e.g., analytical techniques, welding and nondestructive examination)
- Packaging operations and maintenance
- Packaging quality assurance

This training and guidance has resulted in an improved understanding of requirements by the DOE packaging designers, users, and fabricators and has resulted in efficiencies through higher quality applications for packaging certification, thus reducing the amount of time required for review and approval of the requests. The PCP Training courses are highly regarded and well attended by NRC staff and the international community.

### 2.3.2 Packaging Certification Activities

As a Department-wide program, PCP supports EM and other program offices (e.g., Office of Science, Office of Nuclear Energy, and NNSA) in the review and approval of packages needed to accomplish their respective critical missions. In FY 2012, PCP completed 34 packaging certification request actions, including the following Certificates of Compliance (CoC):

- CoC 9516 amendment approval in support of shipment needs by the Office of Nuclear Energy for plutonium oxide in RTGs. These RTGs provide highly reliable power sources for use in deep space and terrestrial missions.
- CoC 9519 amendment approval in support of shipment needs by the Office of Nuclear Energy and Office of Science.
- CoC 9975 amendment approval in support of shipment needs by various sites throughout the complex.
- CoC 9979 amendment approval in support of shipment needs by various sites throughout the complex.
- CoC 9315 amendment approval in support of highly enriched uranium shipments primarily needed by NNSA.
- CoC 9867 approval in support of plutonium oxide shipments primarily needed by NNSA.
- CoC 9977 amendment approvals in support of shipment needs by various sites throughout the complex. One amendment allowed for the extension of periodic leak testing to greater than a one-year period if used in conjunction with a radiofrequency identification (RFID) device for monitoring environmental conditions to ensure temperature limits are not exceeded. Another amendment allowed for shipments of two 3013 canisters for plutonium oxide, rather than one canister per package; which will result in a significant cost avoidance for the Department.



### 2.3.3 Packaging Certification Technical Support

Through PCP, OPT reviews and approves QA Programs for design, fabrication, testing, maintenance, and use of certified packagings. OPT also audits the implementation of the QA Programs for those activities. During FY 2012, OPT performed six audits including packaging designers, fabricators and users. OPT maintained its vigilance on the proper implementation of QA requirements throughout the certification process to avoid safety concerns, which could likely result in significant project delays and cost overruns to resolve.

OPT continued coordinating the implementation of its RFID technology under PCP to reduce costs associated with radioactive material shipments. The RFID transmits continuous, almost real-time, information from sensors attached to transportation packages for tracking and monitoring and transmitted to a remote receiver located many miles away. Other benefits of the system include enhanced safety, safeguards, security and materials accountability. In addition, worker radiation exposure can be greatly reduced by decreasing the need for manned surveillance while having full access to real-time data and continuous monitoring of environmental conditions.

OPT worked with the World Institute for Nuclear Security, the World Nuclear Transport Institute, and Argonne National Laboratory to develop guidance for this RFID technology and other electronic systems for tracking radioactive materials in transport. The Under Secretary for Nuclear Security and NNSA Administrator (Thomas D'Agostino) briefed President Obama on this guidance for the Second World Nuclear Security Summit held in Seoul, Republic of Korea, in March of 2012.

One transportation application that was accomplished in FY 2012 using this RFID technology was in tracking and monitoring shipments of Zero Power Reactor plates containing U-233 from Oak Ridge National Laboratory to the device assembly facility (DAF) in Nevada. The RFIDs allowed for monitoring during transport and continue to provide monitoring during storage at DAF.

In addition, PCP staff was recognized at the Secretary's Honor Award Program for their contributions to the Argonne National Laboratory Nuclear Footprint Reduction and Deactivation Plan, which resulted in significant risk reduction, enhanced compliance, and operational cost savings. PCP worked with a diverse group of Federal and contractor employees who persistently and innovatively worked together across several organizations and DOE programs to achieve highly favorable results.

For additional information about PCP, visit the [Radioactive Material Packaging \(RAMPAC\) website](http://rampac.energy.gov) at <http://rampac.energy.gov>.

## 2.4 TRANSPORTATION RISK REDUCTION

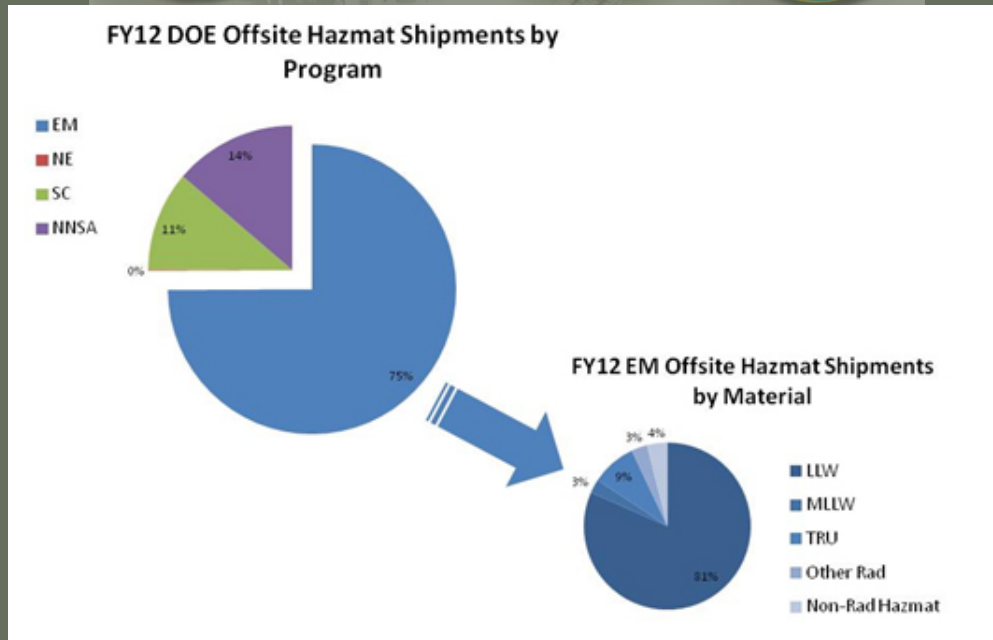
### 2.4.1 Hazardous Materials Shipment Summary

Data obtained from ATMS queries and data calls from non-ATMS user sites show that DOE completed more than 13,000 offsite hazardous material shipments totaling 5.8 million miles in FY 2012. Sub-category level information is not always available and the data calls did not capture all shipments, since there are currently no effective means for readily obtaining this information from all program offices. OPT is working to develop a mechanism to more readily obtain this information in the future.

DOE Shipments by Program Office/Mode

	Air	Air Mileage	Rail	Rail Mileage	Highway	Highway Mileage	Total Shipments	Total Mileage
<b>EM</b>	26	32,777	7,238	298,939	2,499	2,408,885	9,763	2,740,601
<b>NE</b>	15	25,362	0	0	3	3,232	18	28,594
<b>SC</b>	846	879,114	0	0	612	335,311	1,458	1,214,425
<b>NNSA</b>	906	1,279,421	0	0	885	538,322	1,791	1,817,743
<b>Totals</b>	1,793	2,216,674	7,238	298,939	3,999	3,285,750	13,030	5,801,363

The following chart shows a breakdown of shipments by DOE program, and a further breakdown for the shipments by material type for EM:



#### 2.4.2 Accidents/Incidents/Violations

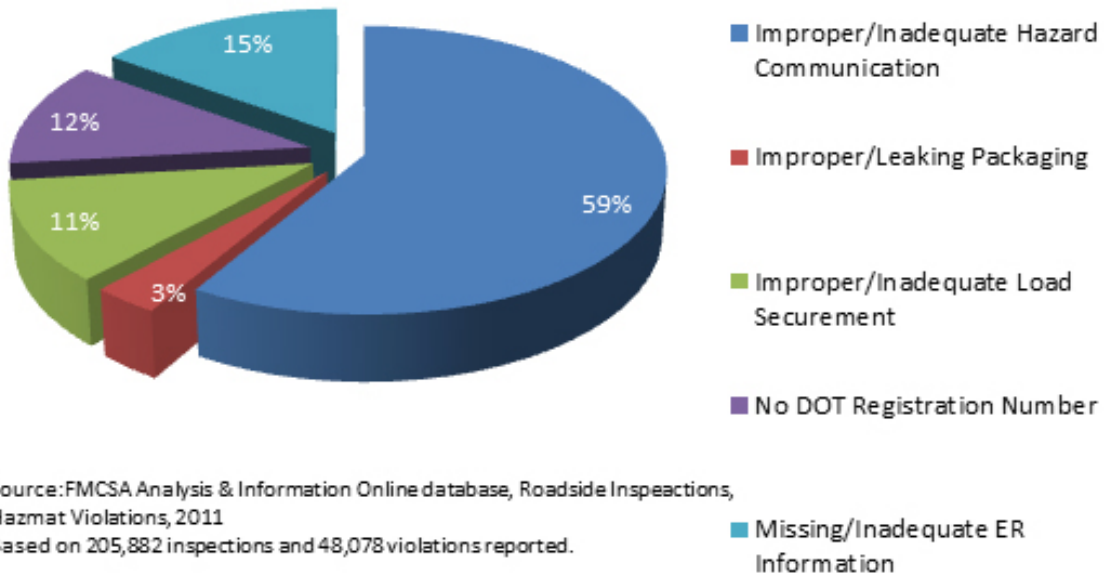
Because of DOE's unique missions and materials, it can be difficult to benchmark performance against other agencies or the commercial sector. Regardless, there is value in evaluating what the commercial transportation industry is doing, and assessing DOE operations with this information in mind. DOE sites have demonstrated exceptional performance in transportation activities over the past few years without serious transportation incidents or significant enforcement actions from DOT. A quick review of DOE transportation-related occurrences since January 2011 shows that approximately 40 percent of these occurrences involved subcontractors.

Unfortunately, a negative trend was identified through multiple DOE oversight activities in FY 2012 regarding the inconsistency of DOE Order requirements being flowed down to subcontractors. In addition, it was found that some of our prime contractors are not performing adequate oversight of their subcontractors. Also, some of the prime contractors are subcontracting out the packaging and transportation functions, and did not have sufficient expertise to oversee compliance for those activities. Contractor transportation managers need to work with the contracting/procurement organizations to ensure adequate and appropriate language is included in subcontracts with packaging and transportation scopes, and that periodic oversights be conducted as required by DOE 460.2 as well as Federal regulations.

In comparing DOE trends with the FMSCA, which provides the Roadside Inspection data on its website: <http://ai.fmcsa.dot.gov/safetyprogram/home.aspx>, some of the data have been extracted in the chart on the following page. Note that hazard communication violations (shipping papers, marking, labeling and placarding) still dominate.

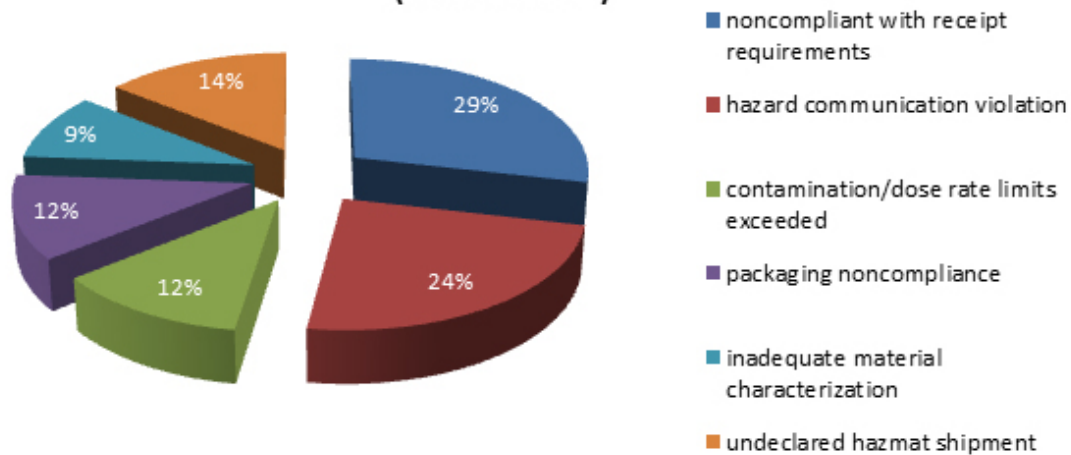


**DOT (FMCSA) TOP HAZMAT VIOLATIONS FOR 2011**



The number of transportation occurrences has been trending down over the last few years (as indicated through the Occurrence Reporting and Processing System (ORPS) database). However, as shown in the figure below many of the causes of these occurrences are in the same areas as they have been for the past decade.

**Areas of Noncompliance for Offsite Shipment Occurrences (2011-Nov 2012)**



Notes:  
 "Non-compliant with receipt requirements" includes WAC issues and shipments where the wrong material/package was shipped  
 "Packaging noncompliance" includes incorrect packaging, leaking packaging, and issues with packaging CoC  
 "Material characterization" includes inadequate characterization for acceptance and improper hazard class determination  
 "Undeclared hazmat shipments" includes those shipped by DOE contractors and also those received from commercial vendors

In reviewing the Occurrence Reporting and Processing System, the areas constituting 90 percent of the noncompliances, in descending order, were:

- Noncompliance with Waste Acceptance Criteria/receipt requirements
- Hazard communication
- Packaging noncompliance
- Material characterization
- Undeclared hazardous materials (hazmat)

To convey information on transportation incidents to our external stakeholders (State Regional Groups, tribes, etc) OPT developed reporting criteria that follows the Federal regulatory requirements of DOT and NRC. In FY 2012 there were four transportation incidents involving DOE hazardous material shipments that met the reporting criteria:

- November 2011: *Contamination:* Los Alamos National Laboratory (LANL) received a Notice of Violation (NOV) from the State of Utah as a result of incoming receipt inspection and survey at the EnergySolutions, Clive facility.
- February 2012: *Characterization:* The State of Washington Department of Transportation issued a NOV to LANL for a discrepancy in reporting americium-241 activity in a waste container.
- June 2012: *Accident:* A crash occurred on a Nevada state highway with a shipment of empty bins being returned to Lawrence Livermore National Laboratory. The driver was transported to the hospital and treated and released.
- August 2012: *Packaging:* The State of Utah issued an NOV to Brookhaven National Lab resulting from the arrival of a Low Level Radioactive waste shipment in torn containers at the EnergySolutions facility in Utah.

### 2.4.3 Site Assessments

OPT uses the Transportation Safety and Oversight Compliance Assurance Program (TCAP) as a peer review process to assist sites and their contractors in conducting compliance reviews of their packaging and transportation activities. TCAP assessments have resulted in numerous cost efficiencies in site contractor activities.

During FY 2012, OPT attempted to implement a less intrusive assessment process on the sites by requesting and reviewing site self assessments rather than performing onsite assessments. However, this approach was found to be ineffective in assessing all areas of activity subject to the Orders. Consequently, OPT performed two TCAP assessments upon request from the sites.

Portsmouth Gaseous Diffusion Plant requested OPT support in conducting a compliance review after a change in its operating contractor. The Portsmouth Site Manager sent a note of appreciation to OPT for the value added by the assessment and noted the TCAP team had a unique understanding of the site situation, and that the recommendations made by the team would lead to significant cost savings. The team helped the site become familiar with DOE rates, instead of General Services Administration rates for Federal Express,

which will be a significant cost savings for the thousands of sample and small material shipments over the life of this project.

#### 2.4.4 Motor Carrier Evaluation Program

OPT manages the DOE Motor Carrier Evaluation Program (MCEP) in accordance with DOE Order 460.2, *Departmental Materials Transportation and Packaging Management*. MCEP is a safety tool used to determine the quality and capability of motor carriers, drivers, and vehicles offered for transporting DOE and NNSA owned radioactive material and hazardous waste. MCEP is used to evaluate motor carriers to provide DOE (including NNSA) and external stakeholders assurance that certain hazardous commodities will be shipped safely and securely. This program eliminates the need for duplication of carrier evaluations when multiple sites are using the same carrier, resulting in significant cost savings for the Department.

In FY 2012, OPT conducted the following MCEP activities:

- Full scope evaluations of two motor carriers;
- One modified scope evaluation to support a site need in using a specialty carrier; and
- Analysis of site motor carrier survey information and internet data to determine carrier usage, and develop a tiered approach for determining the highest priority carriers to be evaluated.

## 2.5 EMERGENCY PREPAREDNESS AND OUTREACH

### 2.5.1 Transportation Emergency Preparedness Program



The Transportation Emergency Preparedness Program (TEPP) managed by OPT is a DOE complex wide program that integrates transportation radiological emergency preparedness activities under a single program to address the emergency response concerns of state, tribal, and local officials affected by the Department's radiological shipments. The goal of TEPP is to establish consistent policies and implementing procedures, build public and institutional confidence, and prepare jurisdictions to respond effectively to a radiological transportation incidents.

Per 44 CFR 351 and DOE Order 151.1, TEPP provides assistance to state and tribal jurisdictions along DOE transportation corridors by preparing responders through training and exercises to effectively manage radiological transportation incidents. TEPP technical assistance helps states and tribes meet an array of hazardous materials transportation and emergency response regulations, rules, requirements, and orders. A variety of TEPP tools, such as needs assessments, model procedures, training, and exercise scenarios, are available for state and tribal authorities to use in building their radiological response programs. All of these tools can be found on the TEPP website at [www.em.doe.gov/otem](http://www.em.doe.gov/otem).

Partnering with state and tribal instructors, along with instructors from the DOE Radiological Assistance Program and the Waste Isolation Pilot Plant, TEPP provided 112 training courses, in 26 different states, resulting in 2,009 responders being trained. An additional 844 responders received







training through 57 state-taught courses that incorporated all or portions of the TEPP training modules. A total of 2,853 responders were trained in 169 classes using TEPP training materials.

Additional information on TEPP accomplishments and activities can be found in the [FY 2012 TEPP Annual Report](#).

## **2.5.2 Stakeholder Outreach**

OPT provides support and communication with our internal stakeholders (e.g., field sites, other program offices, and contractors) as well as external stakeholders (e.g., State Regional Groups, tribes, industry groups, and other Federal agencies). Communication is a key focus of OPT activities.

### **2.5.2.1 Internal Stakeholders**

To address the needs of the diverse DOE complex and its contractors, OPT established a Packaging and Transportation Wiki website. The Wiki is a powerful and versatile tool, used to share information in a timely and effective manner. The Wiki provides a real-time repository for documents, graphics, lessons learned, fact sheets, guidance, and other information to assist the field in accomplishing their respective missions more efficiently. Due to the proprietary nature of the information posted on the Wiki (e.g., motor carrier tender rates), users must be either a DOE or DOE contractor employee and obtain a password for access. The OPT Wiki contains more than 80 pages of information related to DOE packaging and transportation activities, with about 160 users.

OPT also conducts periodic conference calls with the DOE complex (field sites, program offices, etc.) to review lessons learned from recent packaging and transportation events, discuss proposed rulemakings, concerns and items of interest, and share information across programmatic and contractor lines. These calls are widely attended, and provide an excellent forum for keeping the internal stakeholders informed.

OPT continued to manage its ASKPAT email link ([askpat@em.doe.gov](mailto:askpat@em.doe.gov)) on the DOE public website to provide an easy way for contacting OPT directly with any questions or concerns. The ASKPAT email is automatically forwarded to OPT, and is typically answered within a few days. OPT receives about one email a week through ASKPAT with a variety of inquiries including upcoming training, Motor Carrier Evaluation Program, Automated Transportation Management System, and other topics.

### **2.5.2.2 External Stakeholders**

*State Regional Groups:* In FY 2012, OPT completed the award of four new cooperative agreements with the four State Regional Groups (Council of State Governments Midwestern Radioactive Materials Transportation, Southern States Energy Board Radioactive Materials Transportation Committee, Western Governors' Association Transportation Safety Technical Advisory Group, and Council of State Governments Northeast High-Level Radioactive Waste Transportation Task Force). OPT manages these agreements with the four State Regional Groups to promote and enhance transportation planning, coordination and communication between the states impacted by DOE transportation activities. Transportation is one of the most vulnerable activities in fulfilling the DOE missions because hazardous/radioactive material is placed in commerce and has a direct impact on the general public. States have responsibility for safety, security, and enforcement of the transportation regulations under which DOE ships. These cooperative agreements aid DOE in coordinating with the states along transportation corridors for shipping campaigns, unique shipments and sensitive shipments.

- *National Transportation Stakeholders Forum (NTSF)*: NTSF is the mechanism through which DOE communicates at a national level with states and tribes about the Department's shipments of radioactive waste and materials, as well as occasional high-visibility shipments that are nonradioactive. The purpose of the NTSF is to bring transparency, openness, and accountability to DOE's offsite transportation activities through collaboration with state and tribal governments. In FY 2012, the NRC teamed with OPT to host the annual NTSF meeting in Oak Ridge, TN. Planning is underway for the next NTSF Annual Meeting, scheduled to be held in Buffalo, NY, in May 2013. Buffalo was chosen because of the pending NNSA shipments from Canada. This meeting will be co-hosted by the Nuclear Fuel Storage and Transportation Planning Project within the Office of Nuclear Energy (NE).
- *NTSF Wiki*: OPT worked with the State Regional Groups to establish an NTSF wiki website (<http://ntsf.wikidot.com/>) to house all documents related to NTSF meetings, webinars, and working groups (accessible by password only). The wiki provides a central location for all documents developed under the NTSF, and is accessible to anyone with a password.
- *Webinars*: OPT worked with the State Regional Groups and tribes to host two webinars in FY 2012. The webinars are used to keep communications active on pertinent topics. They were well attended, with an average of 70 participants representing DOE programs and sites, other federal agencies, states, tribes, and industry representatives.
- *Ad Hoc Working Groups*: Ad hoc working groups are established to address emerging transportation issues. NTSF working groups currently include the: (1) Planning Committee, tasked with assisting in all aspects of planning for the NTSF Annual Meeting, (2) Communications, which is looking at ways to enhance communications with all parties through use of printed materials, webinars, meetings, etc., (3) Security Communications Protocol, which is looking at how to ensure communications are effective in the event of a security incident involving a DOE shipment, (4) TEPP Training, which has provided assistance in revisions to the TEPP training curriculum and developing on-line training.

### 3. Summary and Next Steps



To ensure continuous improvement and to help meet packaging and transportation policy and program development needs, OPT will strive to ensure program improvements are identified, strengths are built upon, and outside-the-box approaches are evaluated for usefulness and effectiveness. Within the constraints of available resources, OPT will continue to identify areas for improvement and look for ways to leverage existing programs and approaches from other Federal agencies, programs and industry. Some specific activities planned for FY 2013 include:

- Complete the standardized drum specification to reduce unnecessary costs, and work through EFCOG and others to implement its use complex wide.
- Conduct a Commercial Grade Dedication training course through the PCP for packaging specific applications.
- Explore innovative ways to improve TEPP training courses such as computer-based training and “How to” videos, addition of new or state of the art equipment, and website additions that enhance responder readiness for response to transportation incidents involving radioactive material.
- Complete enhancements to the Motor Carrier Evaluation Program, with emphasis on identifying efficiencies within the program and aligning the program with the FMCSA Compliance, Safety, Accountability Program and reviewing how the Department of Defense and industry partners address carrier evaluations.
- Complete enhancements to the Automated Transportation Management System to make it more efficient and effective for use complex wide.
- Establish a Packaging and Transportation Corporate Board to provide a forum for working more effectively across DOE programmatic lines on complex-wide issues.
- Revise the DOE traffic management regulations (41 CFR 109-40), and the associated DOE Order 460.2. The regulations have not been revised in over 15 years. This will be a major undertaking, which will have an impact on the Orders and associated guides and other documents.
- Continue to work with the GSA on the pilot testing of its transportation management system to determine if the system (or portions) can be used within the DOE complex.