CVSA Level VI Inspection Program Peer Review: State Differences, Lessons Learned, Best Practices, and Recommendations

Updates from State Visits in 2011

Prepared for
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TABLE OF CONTENTS

EXECUTIVE SUMMARY

INTRODUCTION—PURPOSE AND SCOPE

The purpose of the peer review of the Level VI inspection program is to identify and share best practices. Initially it was also intended that recommendations would be made to prepare the Level VI inspection program for shipments of spent nuclear fuel to Yucca Mountain. Thus, the first set of peer review site visits was conducted between March 2005 and August 2006. Peer review teams visited the following seven states:

- South Carolina
- Colorado
- Tennessee
- Washington
- Illinois
- New Mexico
- Michigan

The results of these site visits are documented in the January 2007 report *CVSA Level VI Inspection Program Peer Review: State Differences, Lessons Learned, Best Practices, and Recommendations*. Subsequent peer review site visits were made to New Mexico and Idaho in June and August of 2011. This report is an update to the 2007 report based on these 2011 site visits. The additional findings are compared with the previous findings and presented using the same format as the 2007 report. Although the status of Yucca Mountain is currently uncertain, there is still the opportunity from the 2011 site visits to provide recommendations for improvements to the Level VI inspection program.

The same scope and methodology described in the 2007 report apply to the 2011 site visits and this report. Rather than repeat the same information in this report the reader is directed to the 2007 report for these details. The 2007 report may be obtained through CVSA's website at www.cvsa.org. Once on the website, to locate the report, select "Programs" at the top of the page then select the "North American Standard Level VI Inspection Program" link and then select the "CVSA/WIPP Updates & Reports" link. On the resulting page the link to the 2007 report is labeled "Level VI Peer Review Report January 2007".

As stated in the 2007 report, for each of the topic areas of interest the peer review teams were looking for:

- Variations across states;
- Lessons learned and best practices; and,
- Future improvement needs.

SUMMARY OF FINDINGS FROM THE 2011 STATE VISITS

Notable differences across states include:

- Whether or not escorts are required;
- If citations are written for violations noted on inspection;

- The number of Refresher Instructors for each state;
- The number of certified Level VI Inspectors for each state;
- Some states inspect all shipments upon entry, others do not;
- Requirements for access to generator sites differ among states;
- 1-2 inspectors per inspection depending on location;
- Inspection duration varies from 45 minutes to 2 ½ hours;
- Fines for violations and their disposition vary by state;
- Standardization issues among states in determining violations;
- Differences among states in timelines of disseminating FMCSR and CFR updates; and,
- Conditions under which escorting is required differs among states.

Key lessons learned and best practices across states include:

- Operating procedures for instrumentation available for all inspectors at point of origin location.
- Backup instrumentation kept at point of origin inspection location.
- Concise reporting procedures for out-of-service violations that include pictures of the violations.
- Professional working relationships among inspectors, drivers, shipping contractors, and other state agencies promotes a successful program.
- Methodical approach to the inspection keeps it from being "routine".
- Central command instead of troop command is a more effective way of operating a commercial vehicle safety program.
- There is an advantage to use two inspectors for a Level VI inspection.
- Twice-a-year update training for the Level VI inspection program is a very effective strategy.
- Hand selection of inspectors (rather than using seniority) for MCSAP/Level VI program promotes the success of the program.
- Establishment of a consistent method for sharing best practices, lessons learned, and Level VI OOS violations found.
- Conducting Level II en-route inspections instead of Level VI.
- Developing a standardized PPE, TLD, and personal dosimetry program.
- The new maintenance of certification policy is a vast improvement over the old policy.
- Additional types of inspection survey equipment being used with no reported equipment issues.
- Public perception has improved from additional years of public outreach focusing on shipment safety.
- Many face-to-face meetings result in excellent working relationship with generator site.
- The regular use of TLDs and personal dosimetry by inspectors.
- The need to include flexibility into inspectors' schedules and conducting a Level II inspection rather than a Level VI inspection (where allowed) are effective ways to accommodate delays in scheduled inspections due to weather or other conditions.
- The conducting of annual regional exercises and drills are effective exercises when full-scale exercises are not feasible.

Suggestions for future improvements include both: (1) What states can do to improve their Level VI programs; and, (2) How CVSA, DOE, and other government entities can better assist states with their Level VI programs.

Suggestions regarding what states might do to improve their Level VI programs include:

- Level II en-route inspections can be conducted in lieu of Level VI inspections. This will reduce travel time of shipments, while still meeting a state's requirements to conduct a safety and radiation survey inspection.
- States can perform periodic reviews of inspections conducted to insure that inspection data are collected and recorded appropriately.

Suggestions regarding how CVSA, DOE, and other government entities could better assist states with their Level VI programs include:

- CVSA web site improvements
  - Better and easier access to procedures, bulletins and restricted area.
  - More user friendly.
- CVSA to continue
  - Informing public about Level VI program.
  - High standard of training.
  - Maintaining currency in training and issue reporting.
- CVSA to provide
  - Assistance with public outreach to include distribution materials and ideas.
  - Dissemination of CVSA reports to include the governor's office.
  - More assistance with public awareness through the media addressing the success of the Level VI program.
  - Clarification on questionable violations.
  - Better distribution of regulation updates.
  - More practical hands-on training in proper survey techniques.
  - More RAM or awareness training.
- DOE to
  - Increase and maintain funding.
  - Reactivate POE portal monitors.
  - Support more training including refresher classes with meters and specific training on shipping papers.
  - Solve any access problems to generator sites.
  - Standardize labeling and marking among DOE facilities.
- General needs
  - Eliminate en route inspections for better security and more predictable scheduling of shipments.
  - Make routes more driver friendly.

RECOMMENDATIONS FROM THE 2011 STATE VISITS

Recommendations were made by the peer review teams at the close of the state visits and additional recommendations were developed after analyzing the data.

Peer review team recommendations made at visit closeout include:

- Program Management
  - Report all Level VI refresher training to CVSA.
  - Work with state environmental quality agency and hospitals along the RAM transportation routes to obtain training.
- Inspector Training and Support
  - A full-scale exercise for a RAM transportation event may be useful for those inspectors that are not routinely involved in those types of exercises.
  - Review lessons learned during in-service training.
  - Need more refresher training on general HAZMAT.
  - The need more inspector training and hands-on time with survey meters.
  - Take advantage of DOE funded training and other homeland security courses (e.g., CTOS and MERRTT).
  - Inspectors could benefit from both electronic and hard copy versions of schedules, timelines, FMCFRs and CFRs.
  - The need more consistency in the PPE that inspectors use.
  - PPE should be available to inspectors as needed.
  - An inspection cover or shed would be beneficial at the inspection location.

Recommendations based on the data analysis include:

- A review of inspections conducted for data quality purposes is recommended for all states involved in the Level VI program. It is understood that the number of inspections conducted can make a review of all Level VI inspections difficult, thus a random review may be acceptable.
- CVSA should determine if there is a need for additional guidance on using ASPEN and how to handle violations identified during an inspection.
- CVSA should emphasize better use of Rad Inspection News and their website to disseminate lessons learned and best practices.
- CVSA to consider collecting lessons learned from states into a database that would be accessible by all program participants.
- States investigate need for guidance on how often to inspect and exchange PPE.
- Agencies work with DOE to insure that exercises in which DOE is involved are not so scripted that there are no lessons learned from the exercises.
- Continue public outreach events for the Level VI Program.
- Continued inspection and emergency response training is necessary for a successful program.

1 INTRODUCTION

The Commercial Vehicle Safety Alliance (CVSA) developed the Level VI inspection program for commercial vehicles transporting select radioactive materials under a cooperative agreement with the U.S. Department of Energy (DOE) that began in 1986. The Level VI inspection program includes:

- Inspection procedures that are enhancements to the CVSA North American Standard Level I procedures for commercial vehicles;
- A training and certification program for inspectors to conduct inspections on shipments of transuranic waste and highway route controlled quantities (HRCQ) of radioactive material;
- An inspection decal;
- Out-of-service conditions and criteria; and,
- Radiological surveys.

CVSA conducted an initial set of seven state site visits from March 2005 through August 2006 to peer review the Level VI inspection program. The states visited were:

- South Carolina
- Colorado
- Tennessee
- Washington
- Illinois
- New Mexico
- Michigan

The results of these site visits are documented in the January 2007 report *CVSA Level VI Inspection Program Peer Review: State Differences, Lessons Learned, Best Practices, and Recommendations*. Subsequent peer review site visits were made to New Mexico and Idaho in June and August of 2011.

PURPOSE AND OBJECTIVES OF REPORT

This report is an update to the 2007 report based on the 2011 site visits. The additional findings are compared with the previous findings and presented using the same format as the 2007 report. Updated information is provided that supplements that given in the 2007 report.

The same scope and methodology described in the 2007 report apply to the 2011 site visits and this report. Rather than repeat the same information in this report the reader is directed to the 2007 report for these details. The 2007 report may be obtained through CVSA's website at www.cvsa.org. Once on the website, to locate the report, select "Programs" at the top of the page then select the "North American Standard Level VI Inspection Program" link and then select the "CVSA/WIPP Updates & Reports" link. On the resulting page the link to the 2007 report is labeled "Level VI Peer Review Report January 2007". The reader is encouraged to review the earlier report as this report has many references to it.

The purpose of the peer review of the Level VI inspection program is to identify and share best practices. Initially it was also intended that recommendations would be made to prepare the Level VI inspection program for shipments of spent nuclear fuel to Yucca Mountain. Although the status of Yucca Mountain is currently uncertain, there is still the opportunity from the 2011 site visits to provide recommendations for improvements to the Level VI inspection program.

As stated in the 2007 report the peer review results identify and share: (1) variations in the implementation of the Level VI inspection program across states; (2) lessons learned and best practices; and, (3) perceptions of needed improvements. This information provided the basis for additional recommendations and suggested next steps resulting from the 2011 site visits.

APPROACH AND SCOPE

For the 2011 site visits the CVSA Peer Review Committee members represent various organizations including the Council of State Governments Northeast and Midwest Offices, Illinois Emergency Management Agency, Idaho State Police, South Carolina Transport Police, Pennsylvania State Police, and CVSA. Appendix 1 lists the 2011 CVSA Peer Review Committee members and their organizational affiliations.

New Mexico and Idaho agreed to participate in the 2011 peer review visits. New Mexico was visited in June 2011 and Idaho in August 2011. A list of the peer review team members for each state visit and the specific dates of the visit are provided in Appendix 2.

The 2011 data collection effort covered all the same key areas of the Level VI inspection program as described in the 2007 report. The data collection process and selection of persons participating in the review used the same approach that is described in the 2007 report. The organization affiliations of the interviewees for each state are given in Appendix 3. The visit guidance and the peer review data collection instrument (Peer Review Master Interview Guide) are both identical to those used for the earlier site visits and are found in Appendix 4 and Appendix 5, respectively. The peer review teams also collected documents and other relevant materials during the visits and the materials collected from each state are identified in Appendix 6. The correspondence of the topic areas discussed in this report to the questions in the peer review data collection instrument (Appendix 5) is shown in Appendix 7 (this is the same as in the 2007 report).

The topic areas, the interviewee selection process, and the analysis methodology described in the 2007 report apply to the 2011 site visits and this report. In addition the two sets of site visit findings were compared in order to report if there have been any notable changes over the elapsed five years.

REPORT OVERVIEW

The findings of the data analysis comprise the body of the report and are presented in Sections 2 and 3. Section 2 reports findings that are integral to the Level VI inspection program by topic areas, including:

- State program policies and statutes;
- Organizational implementation and relationships;
- Inspector training and manpower;
- Types, locations, and number of inspections;
- Permits, notification, and scheduling;
- Conduct of inspections—inspection procedures and duration;
- Violations, enforcement, and penalties;
- Inspection equipment;
- Tracking and managing information;
- Public perceptions and program outreach; and,
- Sharing lessons learned and best practices.

Section 3 reports findings that may be relevant but are outside the purview of the Level VI inspection program per se. These topics include:

- Transportation issues and restrictions; and,
- Emergency preparedness.

Section 4 selects the most potentially useful information across all the topic areas and condenses this information into a more succinct summary of the following:

- Variations across state programs;
- Lessons learned and best practices; and,
- Future improvement needs.

Section 5 discusses recommendations that can be extracted from this exercise and next steps that may be necessary to develop and prioritize improvements to the Level VI inspection program. The peer review teams offered recommendations at the close of the state visits. Additional recommendations were based on the analysis of the data.

2 LEVEL VI PROGRAM FINDINGS

This section presents:

- A discussion of similarities or differences between the 2007 report findings and the 2011 state visits including variations across states; and,
- Lessons learned, best practices, and improvement needs from the 2011 state visits by topic area.

STATE PROGRAM POLICIES AND STATUTES

From the 2011 visits it was found that there continues to be differences among states regarding inspections of radioactive material shipments. Some states require that all shipments be inspected upon entry to the state. Usually this is a Level VI inspection but could also be a Level II or Level III inspection. A driver mentioned that an inspection might occur shortly after a previous one (for example, 5 hours or 300 miles later). Another driver stated that waiting for a required en route inspection has resulted in travelling through a large city during rush hour. Risk, public perception, liability and public safety were given as reasons for the state specific inspection requirements. Both states mentioned that tribal jurisdiction requirements could affect shipments. For example, placarded loads not allowed to be moved on ceremonial days.

IDENTIFIED LESSONS LEARNED, BEST PRACTICES, AND IMPROVEMENT NEEDS

Respondents generally felt that their states have clear policies on inspector actions if violations are encountered and also that there are clear reporting guidelines. However, one suggestion was that new inspectors could benefit from a "what if" checklist to assist in handling violations identified during an inspection.

It was suggested to minimize the need for en route inspections as they may be redundant and could result in travel through large cities at less than optimal times with respect to safety.

ORGANIZATIONAL IMPLEMENTATION AND RELATIONSHIPS

Respondents generally reported excellent working relationships with generator and destination sites. Communications are well established such that in one state the generator site provides shipment information before it is received from DOE. Another example is the destination site that has instruments on hand in case inspectors might need them.

IDENTIFIED LESSONS LEARNED, BEST PRACTICES, AND IMPROVEMENT NEEDS

In one state the excellent relationship with the generator site is attributed to many face-to-face meetings.

No improvement needs were mentioned.

INSPECTOR TRAINING AND MANPOWER

Since the 2007 report there has been a change in the requirements for an inspector to maintain Level VI certification. As of April 2009, conducting eight or more Level VI inspections in a calendar year is no longer an option. Currently an inspector must have 8 hours of Level VI refresher training every 24 months to maintain certification.

The number of Level VI inspectors for the two states visited in 2011 ranged from 19 to over 80. Each state began conducting Level VI inspections in the 1990s and some of the inspectors have been certified from the start. The number of inspections performed by each inspector varies depending on the inspector's location. For example, inspectors located in a region that includes a generator site generally have more opportunities with the required point of origin inspections. During the previous four years the number of inspections conducted per inspector ranged from 0 to over 90 per year.

Both states report that inspectors received Level VI refresher training regularly in the classroom. One state schedules 4 hours of refresher training every year while the other state conducts the 8 hours of refresher training as needed so that inspectors at any given time satisfy the 2-year requirement. Respondents noted that the instructor, management, or CVSA keeps track of the training.

Other types of refresher training (HAZMAT, Level I) may be provided routinely (for example, one state has HAZMAT refresher training annually).

The state with 19 inspectors has one Level VI refresher instructor and the other state has 3 instructors. These instructors receive their Level VI "train-the-trainer" training from CVSA every 2 years.

Each state has general HAZMAT refresher instructors. In one state update training is received through the Federal Motor Carrier Safety Administration (FMCSA) National Training Center (NTC). In the other state knowledge is obtained from on the job training and attendance at the annual COHMED conference.

Both states report that inspectors receive updated FMCSR and CFR information once a year (books) or more often if available though the online RAID system.

Other mentioned training RAM inspectors might receive besides the basic Level VI training include:

- I-MERRTT and MERRTT technician level training;
- RAM and FEMA training;
- Meter/instrumentation refresher training;
- Counter-terrorism training;
- NTC courses; and,
- Radiation awareness training.

The respondents rated the training they receive from "very good" to "excellent". One respondent felt that without the annual inspection quota there is more time for an inspector to read and research. One inspector stated he augments the training with considerable self-study. Another respondent felt he received too much training too soon.

IDENTIFIED LESSONS LEARNED, BEST PRACTICES, AND IMPROVEMENT NEEDS

With the new requirement for maintaining Level VI certification there does not appear to be any issues with meeting recertification. There are two comments that might be considered for the Level VI training: one comment that training is not entirely complete and needs augmenting and the other comment of too much training too soon. However it is not clear if these comments are about the Level VI training or other training these individuals received.

TYPES, LOCATIONS, AND NUMBER OF INSPECTIONS

From the 2011 visits it was found that there continues to be differences among states regarding inspections of radioactive material shipments. In one state to have access to a generator site for the pre-trip inspection the inspector must attend location-specific initial and recurring safety, security, and radiological training as well as have personal dosimetry and a site badge. For the other state there are no additional requirements – being in uniform, in a state vehicle with personal dosimetry and state issued identification is enough to gain access to the generator site. Drivers report that each generator site has different rules and regulations for access. For a DOE site a DOE badge and associated background check, and site safety and radiological training are required. Drivers may face additional requirements to enter a generator site including a dog search and in-truck camera system removal.

The two states reported that they do not conduct post-trip inspections. However it was reported that there is a one-time badging process to access the WIPP site. Drivers noted that the DOE badge and safety and radiological training are required to access the destination site. In addition there may be a visual inspection and survey of the vehicle.

The number of inspections reported over the past 4 years ranged from approximately 600 to 1000 per year per state. One state reported that over this time period about 60% of their inspections were Level VI and 40% were Level II inspections. One inspector

reported that he conducted 25-30 inspections a year while another inspector stated he conducted 40-45 inspections in a recent month. Another said he was certified for a year and had conducted 30 inspections. The number of inspections conducted per inspector depends on location. Inspectors located in districts with generator sites or at state borders tend to conduct significantly more inspections than inspectors in other locations.

IDENTIFIED LESSONS LEARNED, BEST PRACTICES, AND IMPROVEMENT NEEDS

Respondents provided no lessons learned, best practices, or improvement needs for this topic area.

PERMITS, NOTIFICATION, AND SCHEDULING

Similar results as discussed in the 2007 report regarding permits, notification and scheduling were found from the 2011 visits.

Other than the HAZMAT permit there appears to be no additional permits required from RAM shipments for the two states. Permit costs, if any are nominal and any funds are used for training.

The two states use DOE's 8-week rolling schedule as a guide to assign Level VI inspectors. Generally a 4-5 week inspection schedule is prepared and published about 2 weeks before the first scheduled inspection. An inspection schedule may be prepared statewide or by district. The shipper or carrier may provide updates to the schedule. Both states indicated that the advanced notice is adequate for scheduling inspectors.

There are no jurisdictional requirements for shipment notice but procedures exist in both states for notifications. These may consist of periodic updates (e.g., 14 day, 24 hours, and 2 hours notice) from shipper or carrier on arrival and departure times.

The states do track some shipments (for example with TRANSCOM).

Drivers report that they receive their schedules about a week in advance and that is adequate. One driver stated that prior notification by the central monitoring room (CMR) at WIPP is adequate. When approaching a state requiring an inspection at entry they will call to alert inspectors at times ranging from 2 hours to 15 minutes before arrival. Also mentioned were some conditions that can impact their travel schedule, namely tribal jurisdictions that limit or prohibit transport through their reservations during ceremonial or holiday times, restrictions on time of day when inspections can be conducted, and inspector delays in arriving for point of origin inspection.

IDENTIFIED LESSONS LEARNED, BEST PRACTICES, AND IMPROVEMENT NEEDS

The states and drivers are satisfied with the advance inspection notice provided them. It appears that publishing a schedule about a month in advance with the shipper and carrier providing updates as needed works well. Using tracking methods like TRANSCOM and periodic phone calls from the drivers while on the road provides adequate notification of vehicle arrival for timely inspections. In some cases inspection scheduling might be adjusted to avoid conditions that would delay travel.

CONDUCT OF INSPECTIONS – INSPECTION PROCEDURES & DURATION

In this topic area the findings of the 2011 visits were very similar to the results discussed in the 2007 report. In particular:

- Number of inspectors per inspection is typically 2 but may be 1 depending on location;
- Inspection duration typically ranges from 45 minutes to 1.5 hours but may be 2-2.5 hours if there are violations; and,
- Factors impacting inspection duration include weather and number and severity of violations.

In addition respondents from the 2011 visits noted the following factors impacting inspection duration:

- Number of inspectors;
- Inspector experience;
- Type of inspection (Level II or Level VI);
- Individual inspector differences (more thorough or faster working);
- Various state procedures;
- Type of shipment (e.g., civilian shipment takes less time with no tie downs and a smaller package to survey); and,
- Wait time for inspector to start inspection.

Most respondents felt that inspection procedures and instructions for completing inspection reports are clear. However one respondent was not sure when to conduct a Level II inspection instead of a Level VI inspection. Another respondent had not received detailed guidance on using ASPEN for reporting inspections.

Generally respondents agreed that there are clear policies on inspector actions if violations are detected and also that there are clear reporting guidelines. That is, use ASPEN and notify management and possibly the shipper if the shipment will be delayed. One respondent suggested a checklist would be beneficial for new inspectors on how to handle violations identified during an inspection.

In one state lessons learned from inspectors are disseminated by discussions at refresher training, by email distributions, or by informal discussions among inspectors.

IDENTIFIED LESSONS LEARNED, BEST PRACTICES, AND IMPROVEMENT NEEDS

There may be a need for guidance for new inspectors on how to handle violations identified during an inspection. There may be also a need for more detailed documentation on ASPEN. CVSA may want to follow up on these items to determine if the information is currently available and, if not, whether it needs to be developed.

Capturing lessons learned from inspectors is important, not just for a particular state but also the larger Level VI Program community. States should be encouraged to document their lessons learned. CVSA may want to develop a database in which states can submit their relevant lessons learned that could be accessed by the broader community.

VIOLATIONS, ENFORCEMENT, AND PENALTIES

Respondents from both states noted that RAM transportation violations are tracked using ASPEN and their own databases or spreadsheets. Other systems that may be used to track violations are Safer, FMCSA Query Central and TRANSCOM. Unlike the 2007 report respondents did not mention any issues with tracking violations in ASPEN. This is probably due to subsequent enhancements made to ASPEN that better categorize the violations.

Respondents reported that there have not been notable trends in the types of violations. A driver noted that there have been vehicle improvements such as refurbished trailers that reduced the number of ABS light violations and new rubber inserts that reduced the number of glad hand leak violations. Statistics provided by the two states during the site visits indicate a lower number of violations over time for the past 5 years. This could be attributed in part to the vehicle improvements but might also be due to more consistency in violation identification.

Each state has penalties levied for violations. Consistent with the 2007 report the way in which fines are determined varies between the two states. In one state the penalty is $401 per HAZMAT violation and $181 for other violations. In the other state the courts generally determine the fines. Consistent with the 2007 report, the fines may go to various agencies such as school districts, courts, and the state department of transportation, and various funds such as the road fund and general fund.

IDENTIFIED LESSONS LEARNED, BEST PRACTICES, AND IMPROVEMENT NEEDS

It appears that violations are better tracked by the states now that improvements have been made to ASPEN.

Most drivers did report that there are variations among states in the kinds or frequency of violations identified. It was noted that one state might focus on a particular area of the inspection while another state may not. Thus there may still be an issue (as identified in the 2007 report) in standardization among the states in determining violations.

INSPECTION EQUIPMENT

This topic area includes:

- Inspection survey equipment; and,
- Personal protection equipment (PPE).

Both states list Ludlum 2241, 2241-1 or 2241-2; Ludlum 14C; and probes 44-9 and 44-38 among the types of survey equipment they use. In one state HAZMAT specialists use the Thermo RO-20 ion chamber and the Ludlum 3030 for conducting contamination smears at the inspection locations. This state also uses Ludlum NaI detectors, dose rate meters and portal meters. The other state includes Thermo IdentiFINDERs and Thermo RadEyes among their survey equipment used. Compared to the inspection survey equipment listed in the 2007 report, it appears that more types of survey equipment and newer instruments are being used by these states.

Most respondents were knowledgeable about the equipment inventory. In one state it was reported that all inspectors are issued the same equipment and that spare kits are located at the inspection locations for backup. The other state issues equipment to ports of entry, district offices, squads, and individuals depending on needs.

Generally the operators are responsible for the equipment they use. Procedures are in place for checking equipment operation, calibration, and recalibration date. Usually recalibrations are performed annually. Both states have a central organization that monitors inventory including calibration due dates and forwards the equipment for calibration or repair.

Unlike the findings discussed in the 2007 report, there were no issues mentioned with equipment quality or maintenance. Respondents rated the equipment and equipment maintenance good to excellent. One respondent noted that digital survey meters with auto-scale are easier to use. Other comments were that equipment is reliable and durable and easy to return for calibration or repair. One respondent desired a quicker response for requests for materials and supplies.

The PPE used that was mentioned by one or both of the two states include TLDs, electronic dosimetry, dosimeter badges, hard hats, gloves, boots, coveralls, safety glasses, ½ face masks with radiological cartridges, air purifying respirators (APRs), Level C purifying respirators for inspectors, Level B for HAZMAT specialists.

Generally for both states PPE is issued to the individual inspector but in one state issuance to the individual may depend on the supervisor.

For the most part PPE maintenance is the responsibility of the individual. There are routine inspections of PPE by supervisors. These may be monthly, quarterly or annually depending on equipment and state. PPE is replaced as needed. In particular TLDs are checked and exchanged on a regular schedule in both states.

Required training or training status for PPE users include technician level training, OSHA technician level trained, Technical Emergency Response Training (TERT) Domestic Preparedness courses, OSHA HAZWOPER technician course (40 hour) and annual refresher (8 hour), Health Department training, HAZMAT orientation, CVSA Level VI basic course, and Personal Radiation Detection training.

Both states rated the PPE provided and PPE maintenance as good to excellent. However one respondent felt that suits and respirators are not inspected or exchanged frequently enough. Also one inspector would like a bump cap included in the provided PPE.

IDENTIFIED LESSONS LEARNED, BEST PRACTICES, AND IMPROVEMENT NEEDS

Each state has procedures for checking survey equipment and maintaining recalibration schedules. This insures that the equipment is available and ready to use when needed.

TLDs and personal dosimetry are being used by both states (a best practice recommendation from the 2007 report).

In one state masks were recently upgraded and individuals were issued their own mask. This insures that the mask fits the intended recipient and that no alterations are made to the mask by anyone else (which might have been done previously when masks were shared).

There may be a need for guidance on how often to inspect and exchange PPE.

TRACKING AND MANAGING INFORMATION

This topic area includes:

- Tracking shipments, inspections, and violations;
- Tracking inspector training; and,
- Tracking program changes and managing/sharing updates.

<u>Tracking Shipments, Inspections, and Violations</u>

Both states have personnel trained in satellite tracking systems like TRANSCOM and they track shipments of radiological material through their states. One state inspects all the HRCQ and WIPP shipments. Inspections are tracked by both states using one or more of the following systems: ASPEN, FMCSA Query Central, Safer, and state databases and spreadsheets. The same systems are used to track violations.

Tracking Inspector Training

Currently an inspector is required to complete refresher training every two years in order to remain Level VI certified. Thus having a system to track inspector Level VI initial and refresher training is essential. (Previously an inspector that conducted 8 or more Level VI inspections a year would remain Level VI certified and therefore at that time it was also important to track the number of inspections each inspector conducted.) CVSA has a database that tracks inspector training status for each state but this system relies on prompt updates from the states. Both states maintain their own systems to track inspector training but they also coordinate with CVSA to keep their inspector training data current in the CVSA database.

Tracking Program Changes and Managing/Sharing Updates

Similar to findings noted in the 2007 report there is variation in how timely the states get FMCSR and CFR updates disseminated to relevant personnel. For the most part these updates are obtained annually in book form and more often if available though the online RAID system.

IDENTIFIED LESSONS LEARNED, BEST PRACTICES, AND IMPROVEMENT NEEDS

The two states appear to be satisfied with the systems they are using to track shipments, inspections, violations, and inspector training. They provide CVSA with timely inspector training status updates for their states.

PUBLIC PERCEPTION AND PROGRAM OUTREACH

Public safety is a common basis for local policy concerning RAM transportation through the jurisdiction. Respondents generally feel that their higher management is supportive, and recognize the importance and need of the inspection program to insure that shipments are safe. Factors that have influenced management perception positively include:

- Great performance record;
- Good working relationships among state, shippers, carriers and the public;
- Public outreach efforts;
- Success of the WIPP program;
- No incidents and safe storage; and,
- Longevity of the program.

Both states indicate that public perception of RAM transportation in their states is mostly positive. This is mainly because of the history in their states involving radioactive materials – many in their states are employed by or associated with the nuclear industry or are knowledgeable on the subject and such familiarity results in understanding and acceptance that the shipments are regulated to be safe. It is felt that concerns by the public are due to not understanding the low hazard associated with the shipments.

Factors given that influence public perception of RAM transportation positively in these states include:

- Long history of the nuclear industry in the state;
- Community outreach efforts;
- Public awareness campaigns;
- Educational programs on the safety of RAM transport;
- No accidents or incidents; and,
- States, shippers, carriers and public working together.

Factors given that influence negative public perception include media coverage of bad events, fear of radioactive material, and lack of knowledge or understanding. There have been a few special interest groups that had concerns but for the most part their concerns have been resolved over time.

Both states have tribal-imposed restrictions on transporting RAM in tribal areas during certain ceremonial days.

In each state public outreach has been conducted by various organizations. WIPP has done public outreach in both states. A state environmental agency does outreach at fairs and schools and through their website and Facebook presence. Some generator sites have a public information office that provides information on milestone shipments or events. Generally it was felt that public outreach is adequate and the reasons given to increase public outreach include a new shipping campaign or changes (e.g., TRUPACT III) to inform the public.

IDENTIFIED LESSONS LEARNED, BEST PRACTICES, AND IMPROVEMENT NEEDS

It appears that the additional years of public outreach since the 2007 report has resulted in a generally favorable public opinion of RAM shipments for the two states. Both states felt that educating the public on the safety of the shipments has contributed to the positive perception in their states. Public outreach is considered adequate and would only need to be increased if there are changes in a shipping campaign.

SHARING LESSONS LEARNED AND BEST PRACTICES

From the 2011 visits it was found that there continues to be informal mechanisms to share lessons learned and best practices. Typical methods include email, word of mouth, and discussions at refresher training, during routine conference calls and at regular meetings.

When asked about what lessons had been learned or best practices identified, the following were given:

- How to properly document violations;
- Conduct refresher training for everyone at the same time;
- Hold monthly conference calls;

- Include sharing sessions during saturation activities;
- Give drivers the opportunity to check trucks;
- Don't push drivers; and,
- Issues discovered regarding brakes (e.g., Inspection Bulletin for ABS light), tie down problems (e.g. TRUPACs), and steering.

Generally the lessons learned and best practices are reported to management as they occur and disseminated by management through the various informal methods.

IDENTIFIED LESSONS LEARNED, BEST PRACTICES, AND IMPROVEMENT NEEDS

Respondents appear to be satisfied with their informal methods of reporting and disseminating lessons learned and best practices within their states. However, the lessons learned and best practices identified by each state may be of interest and applicable to other jurisdictions. A mechanism to provide this information to the other jurisdictions should be available. CVSA should continue, perhaps with more emphasis to encourage the use of RAD Inspection News and the CVSA website to get the information out to all interested parties.

3 ADDITIONAL FACTORS OF INTEREST (RELEVANT TO BUT BEYOND LEVEL VI INSPECTION PROGRAM)

The interviews included questions that are relevant to RAM transportation but go beyond the Level VI inspection program per se. These questions fall into two topical categories:

- Transportation issues and restrictions; and,
- Emergency preparedness.

TRANSPORTATION ISSUES AND RESTRICTIONS

This topic area includes the following issues:

- Route restrictions;
- Weather restrictions;
- Escort requirements; and,
- Safe parking requirements.

Route Restrictions

One state has preferred routes for all RAM shipments and the other state has preferred routes for WIPP and HRCQ shipments. According to drivers, all states have preferred routes and the majority considers these routes convenient. Both states either require or request that shipments not go through their major cities during rush hours. Drivers state there are restricted hours where travel is not allowed for certain cities. These findings are similar to the results discussed in the 2007 report.

One state has ongoing construction projects that may impact RAM shipments. The other state does not have any construction planned but if it did, alternate routes would be designated.

Weather Restrictions

An updated schedule is received about two weeks in advance if there is a shipment delay due to weather or other conditions. Both states report that if the weather turns bad unexpectedly a shipment does not leave the point of origin or, if it has departed the point of origin it is returned to the point of origin. Building flexibility into inspectors' schedules and performing a Level II inspection rather than a Level VI inspection were mentioned as ways these states accommodate delays in scheduled inspections.

Escorting Requirements

Both states do not require escorts for RAM shipments, but do escort under certain conditions such as for an off-route shipment, a NRC escort requirement, or a suggested security threat. In both states an escort involves armed state employees. These findings are very similar to the results discussed in the 2007 report.

The drivers reported that some states require escorts and that generally there are no problems with escorting. One driver mentioned that the use of law enforcement vehicle blue lights at night tend to slow down shipments.

Safe Parking Requirements

Both states report that they have safe parking locations. Specifically mentioned locations include a military installation and a port of entry site. Factors given for the selection of these locations include available safety and security features such as fencing and cameras and consultation with DOD and DOE. The drivers report that all states that they are aware of have convenient safe parking locations.

IDENTIFIED LESSONS LEARNED, BEST PRACTICES, AND IMPROVEMENT NEEDS

Including flexibility into inspectors' schedules and performing a Level II inspection rather than a Level VI inspection (where allowed) are possible ways to accommodate delays in scheduled inspections due to weather or other conditions.

EMERGENCY PREPAREDNESS

This topic area includes:

- Exercises; and,
- Availability of trained responders on routes.

Exercises

Full-scale emergency response exercises have been conducted in both states but not in recent years. One state reports that it has been a while since a state level exercise involving multiple agencies was conducted but regional exercises and small drills are conducted annually. Also there was a RAM incident three years prior in which the emergency response system performed well.

Respondents from both states rated the past exercises good to excellent. Factors given that promote good exercise outcomes include:

- Thorough planning and preparation for exercises;
- Table-top exercises conducted before field exercises; and,
- Training in advance of exercises.

One issue noted with DOE involvement is that exercises tend to be too scripted with no deviations allowed and thus no opportunities for lessons learned.

Trained Responders on Routes

Both states report that they have trained responders or personnel on RAM transportation routes in the following areas:

- First responders trained in RAM: for example, regional teams (MERRTT trained) and state law enforcement personnel trained on WIPP routes and certain interstate routes.
- HAZMAT operations level responders trained in RAM: for example, regional teams, state law enforcement personnel, fire departments and hospitals.
- HAZMAT technicians trained in RAM: for example, technicians on regional teams and MCSAP personnel (OSHA technician level trained).
- Personnel trained in Critical Incident Command: for example, MCSAP personnel with ICS 300 training, HAZMAT specialists and Command with ICS 400 training, fire department, law enforcement, county emergency management personnel all with 300 level and some with 400 level training, and regional and major city teams.
- Personnel trained in HAZMAT Critical Incident Command: for example, MCSAP personnel with ICS 300 training, HAZMAT specialists and Command with ICS 400 training, regional teams, state law enforcement, and major cities.
- Personnel trained in Radiological Emergency Operations: for example, I-MERRTT training and regional teams.

In both states hospital personnel are provided training by state agencies in EMS/hazardous material. Training mentioned includes PPE and decontamination courses, after action protocols, and emergency contacts that focus on WIPP routes. One state reported that 493 personnel were training in the current year. Issues mentioned include getting doctors to attend training and hospitals trained in RAM that refuse contaminated patients.

Both states report that EMS or hospital personnel on RAM transportation routes are trained in the handling of radiation accidents and radiological emergency management. One state reports that all metro areas have EMS trained but rural areas are not all trained. Both states have radiological response teams on the RAM transportation routes – in one state there are seven regional teams and the other state has one team and if needed will request NNSA's Radiological Assistance Program (RAP) support.

There is radiological emergency training available for local responders in each state. This includes training available statewide, MERRTT, and training offered by the health and fire departments.

Respondents rated emergency preparedness in their states for events involving RAM transportation good to excellent. They cited the following for successful emergency preparedness:

- Great regional response teams;
- An attitude that there is always room for improvement;
- Ample training along transportation routes;
- Good relationships among team players; and,
- Quality training provided by WIPP.

IDENTIFIED LESSONS LEARNED, BEST PRACTICES, AND IMPROVEMENT NEEDS

Annual regional exercises and drills are effective exercises when full-scale exercises are not feasible.

There is a need to work with DOE to insure that exercises in which DOE is involved are not so scripted that there are no lessons learned from the exercises.

One driver suggested that contact information for hospitals along the route be provided to the drivers.

4 SUMMARY

NOTABLE VARIATIONS ACROSS STATES

The most notable differences across states include:

- Whether or not escorts are required;
- If citations are written for violations noted on inspection;
- The number of Refresher Instructors for each state;
- The number of certified Level VI Inspectors for each state;
- Some states inspect all shipments upon entry, others do not;
- Requirements for access to generator sites differ among states;
- 1-2 inspectors per inspection depending on location;
- Inspection duration varies from 45 minutes to 2 ½ hours;
- Fines for violations and their disposition vary by state;
- Standardization issues among states in determining violations;
- Differences among states in timelines of disseminating FMCSR and CFR updates; and,
- Conditions under which escorting is required differs among states.

It must be noted that many of these variations are similar to variations discussed in the 2007 report.

KEY LESSONS LEARNED AND BEST PRACTICES

Key lessons learned and best practices across states were identified to include the following:

- Operating procedures for instrumentation available for all inspectors at point of origin location.
- Backup instrumentation kept at point of origin inspection location.
- Concise reporting procedures for out-of-service violations that include pictures of the violations.
- Professional working relationships among inspectors, drivers, shipping contractors, and other state agencies promotes a successful program.
- Methodical approach to the inspection keeps it from being “routine”.
- Central command instead of troop command is a more effective way of operating a commercial vehicle safety program.
- There is an advantage to use two inspectors for a Level VI inspection.
- Twice-a-year update training for the Level VI inspection program is a very effective strategy.
- Hand selection of inspectors (rather than using seniority) for MCSAP/Level VI program promotes the success of the program.
- Establishment of a consistent method for sharing best practices, lessons learned, and Level VI OOS violations found.
- Conducting Level II en-route inspections instead of Level VI.
- Developing a standardized PPE, TLD, and personal dosimetry program.

- The new maintenance of certification policy is a vast improvement over the old policy.
- Additional types of inspection survey equipment being used with no reported equipment issues.
- Public perception has improved from additional years of public outreach focusing on shipment safety.
- Many face-to-face meetings result in excellent working relationship with generator site.
- The regular use of TLDs and personal dosimetry by inspectors.
- The need to include flexibility into inspectors' schedules and conducting a Level II inspection rather than a Level VI inspection (where allowed) are effective ways to accommodate delays in scheduled inspections due to weather or other conditions.
- The conducting of annual regional exercises and drills are effective exercises when full-scale exercises are not feasible.

FUTURE IMPROVEMENT NEEDS

Suggestions for future improvements include both:

- What states can do to improve their Level VI programs; and,
- How CVSA, DOE, and other government entities can better assist states with their Level VI programs.

WHAT STATES CAN DO TO IMPROVE THEIR LEVEL VI PROGRAMS

- Level II en-route inspections can be conducted in lieu of Level VI inspections. This will reduce travel time of shipments, while still meeting a state's requirements to conduct a safety and radiation survey inspection.
- States can perform periodic reviews of inspections conducted to insure that inspection data are collected and recorded appropriately.

HOW CVSA, DOE, AND OTHER GOVERNMENT ENTITIES CAN BETTER ASSIST STATES WITH THEIR LEVEL VI PROGRAMS

There were a few identified needs pertaining to the CVSA Level VI inspection program. Identified future improvements include:

- CVSA web site improvements
  - Better and easier access to procedures, bulletins and restricted area.
  - More user friendly.
- CVSA to continue
  - Informing public about Level VI program.
  - High standard of training.
  - Maintaining currency in training and issue reporting.
- CVSA to provide
  - Assistance with public outreach to include distribution materials and ideas.
  - Dissemination of CVSA reports to include the governor's office.

- More assistance with public awareness through the media addressing the success of the Level VI program.
- Clarification on questionable violations.
- Better distribution of regulation updates.
- More practical hands-on training in proper survey techniques.
- More RAM or awareness training.

- DOE to
  - Continue supporting states with more transparency.
  - Increase and maintain funding.
  - Reactivate POE portal monitors.
  - Support more training including refresher classes with meters and specific training on shipping papers.
  - Solve any access problems to generator sites.
  - Standardize labeling and marking among DOE facilities.
- General needs
  - Eliminate en route inspections for better security and more predictable scheduling of shipments.
  - Make routes more driver friendly.

5 RECOMMENDATIONS AND NEXT STEPS

Recommendations were made by the peer review teams at the close of the state visits. Additional recommendations were developed after analyzing the data.

PEER REVIEW TEAM RECOMMENDATIONS MADE AT VISIT CLOSEOUT

At the conclusion of the 2011 state visits the peer review teams provided recommendations specific to the agencies visited. These recommendations were consolidated and grouped according to the following topical areas:

PROGRAM MANAGEMENT

- Report all Level VI refresher training to CVSA.
- Work with state environmental quality agency and hospitals along the RAM transportation routes to obtain training.

INSPECTOR TRAINING AND SUPPORT

- A full-scale exercise for a RAM transportation event may be useful for those inspectors that are not routinely involved in those types of exercises.
- Review lessons learned during in-service training.
- Need more refresher training on general HAZMAT.
- The need more inspector training and hands-on time with survey meters.
- Take advantage of DOE funded training and other homeland security courses (e.g., CTOS and MERRTT).
- Inspectors could benefit from both electronic and hard copy versions of schedules, timelines, FMCFRs and CFRs.
- The need more consistency in the PPE that inspectors use.
- PPE should be available to inspectors as needed.
- An inspection cover or shed would be beneficial at the inspection location.

RECOMMENDATIONS BASED ON DATA ANALYSIS

The following are recommendations derived from the findings including lessons learned, best practices, and future improvement needs.

- A review of inspections conducted for data quality purposes is recommended for all states involved in the Level VI program. It is understood that the number of inspections conducted can make a review of all Level VI inspections difficult, thus a random review may be acceptable.
- CVSA should determine if there is a need for additional guidance on using ASPEN and how to handle violations identified during an inspection.
- CVSA should emphasize better use of Rad Inspection News and their website to disseminate lessons learned and best practices.
- CVSA to consider collecting lessons learned from states into a database that would be accessible by all program participants.

- States to investigate need for guidance on how often to inspect and exchange PPE.
- Agencies to work with DOE to insure that exercises in which DOE is involved are not so scripted that there are no lessons learned from the exercises.
- Continue public outreach events for the Level VI Program.
- Continued inspection and emergency response training is necessary for a successful program.

APPENDIX 1: 2011 PEER REVIEW COMMITTEE

Peer Review Committee	
Member	**Affiliations**
Tony Anderson	Idaho State Police
Kelly Horn	Illinois Emergency Management Agency, Mid West Council of State Governments
Troy Smoak	South Carolina Transport Police
Rion Stann	Pennsylvania State Police, North East Council of State Governments
Larry Stern	Commercial Vehicle Safety Alliance

APPENDIX 2: 2011 VISIT DATES AND PEER REVIEW TEAMS BY STATE

State	Visit Dates	Peer Review Team Members
New Mexico	June 21-23, 2011	Troy Smoak
		Tony Anderson
		Larry Stern
Idaho	August 16-18, 2011	Kelly Horn
		Rion Stann
		Larry Stern

APPENDIX 3: 2011 STATE ORGANIZATIONS COVERED AND FIELD OBSERVATIONS

State	Organization Covered/Field Visits
New Mexico	New Mexico Motor Transportation Division Police
	Office of Health Emergency Management, New Mexico Department of Health
	Radiation Control Bureau, New Mexico Environment Department
	Los Alamos National Laboratory
	CAST Transportation
Idaho	Idaho State Police
	Idaho Bureau of Homeland Security
	Idaho Department of Environmental Quality
	Radioactive Waste Management Complex
	Bechtel BWXT
	CAST Transportation
	Visionary Solutions

APPENDIX 4: CVSA LEVEL VI PEER REVIEW SITE VISIT GUIDANCE

FOR CVSA LEVEL VI PROGRAM IMPLEMENTATION ORGANIZATIONS

- An initial Overview by Peer Panel followed by initial program overview and site visit overview session by Program Lead/Program Administrator with opportunity for questions/answers. [Full panel would participate]
- Review of inspection tools/checklists used by inspectors. [2-3 panel members]
- Interviews with inspectors (number depends on number of inspectors jurisdiction has). [2 panel members per interview]
- Observation of one or more different inspectors conducting a mock inspection (or actual inspection is available). [2 panel members per mock inspection]
- Review of training procedures/materials. [2 panel members]
- Interviews with trainers (number depends on number of trainers jurisdiction has). [2 panel members per interview]
- Site visit of equipment storage site and interview with equipment manager. [2 panel members]
- Interviews with key program sponsors—may be useful to include relevant legal counsel to address specific jurisdiction regulations of pertinence. [2 panel members]
- Interviews with key program stakeholders (customers, interest groups, key public/private stakeholders) as determined to be applicable--it may be useful to conduct interviews with more than one carrier. [2 panel members per interview]
- Interviews with relevant Emergency Management, CIC, ICS, HAZMAT personnel if not determined to be outside scope of review. [2 panel members per interview]
- Exit meeting with Program Lead/Program Administrator to address ambiguities, need for clarification, etc. [Full panel]

THE FOLLOWING IS WHAT CVSA WILL NEED FROM YOUR STATE TO EFFECTIVELY CONDUCT THE PEER REVIEW

- Please have the following information available at the start of the site visit:
  - The average length of inspections.
  - The number of inspections conducted each year for the past five years.
  - The number of violations identified and the number of violations cited each year for the past five years.
  - The number and amount of fines levied each year over the past five years.
  - The number of RAM movements through the jurisdiction each year for the past 5 years.

        - The type and cost of RAM shipment permits (if applicable).
        - The number of jurisdiction HM refresher instructors.
        - The number and type of inspection equipment and personal protection equipment.
    - How many inspectors they have, including their names, years of experience, so that we can jointly determine whom to interview. We will have to determine when you will set up interview times and mock inspection observation times with the selected inspectors in advance of the site visit.
    - Discuss with jurisdiction how they will go about setting up mock inspection venue so that panel members can observe mock inspection by a few different inspectors.
    - Let me know how many trainers they have, including their names, years of experience, so that you can jointly determine whom to interview. We will have to determine when you will set up interview times with the selected trainers in advance of the site visit.
    - Let me know who the relevant equipment manager(s) are. We will have to determine when you will set up interview times with the equipment manager(s) and set up time for visit to equipment site(s) in advance of site visit.
    - Let me know who the key program sponsors are and we will have to determine when you will set up interview times.
    - Let me know what RAM generator sites exist within their jurisdiction and the key generator site personnel they interact with. We will have to determine when you will set up interview times with the selected generator site personnel in advance of the site visit—note that these interviews will most likely to done via the phone.
    - Let me know who the relevant Emergency Management, CIC, ICS, HAZMAT personnel are in their jurisdiction. We will determine when you will set up interview times with the selected staff in these areas in advance of the site visit—note that these interviews may be done via the phone.
    - Let me know who other key program stakeholders are (interest groups, key public/private stakeholders). We will determine when you will set up interview times with the selected stakeholders in advance of the site visit.
    - Jointly set up time at start of the review site visit for an Initial Overview by Peer Panel followed by Initial Program Overview and Site Visit Overview session by Program Lead/Program Administrator.
    - Jointly set up time at end of the review site visit for an Exit Meeting between the Program Lead/Program Administrator and the review team panel members.

FOR PRIMARY CARRIERS (if applicable)

- An initial meeting between Peer Review Panel and Carrier Site POC. [Full review panel team would participate]
- Interviews with drivers (number depends on number of drivers carrier has). [2 panel members per interview]
- Interviews with other relevant carrier staff. [2 panel members per interview]
- Exit meeting between Peer Review panel and Carrier POC. [Full panel]

THE FOLLOWING IS WHAT WE WILL NEED ROM YOU TO EFFECTIVELY CONDUCT THE PEER REVIEW

- Have carrier designate a POC to work with panel team lead.
- Have POC let you know how many drivers they have, including their names and years of experience, so that you can jointly determine whom to interview. Determine whether they or you will set up interview times with the selected drivers in advance of the site visit.
- Have POC help you determine what RAM generator sites you should interview.
- Jointly set up time at start of the site visit for an Initial Meeting between Peer Panel and Carrier staff.
- Jointly set up time at end of the site visit for Exit Meeting between Peer Panel and Carrier staff.

FOR GENERATOR SITES (if applicable)

- An initial phone interview between select members of the Peer Review Panel and Generator Site POC. [Select members of the review panel team would participate]
- Individual phone interviews with key generator staff (number depends on persons jointly identified as key staff of relevance). [2 panel members per interview]
- Have generator site designate a POC to work with panel team lead.
- Have POC let you know who relevant generator staff is, including their names and years of experience, so that you can jointly determine whom to interview. Determine whether they or you will set up interview times with the selected staff in advance of the site visit.

FOR DESTINATION SITES (if applicable)

- An initial phone interview between select members of the Peer Review Panel and Destination Site POC. [Full review panel team would participate]
- Individual phone interviews with key destination staff (number depends on persons jointly identified as key staff of relevance). [2 panel members per interview]
- Have destination site designate a POC to work with panel team lead.
- Have POC let you know who relevant destination staff is, including their names and years of experience, so that you can jointly determine whom to interview. Determine whether they or you will set up interview times with the selected staff in advance of the site visit.

APPENDIX 5: CVSA LEVEL VI PEER REVIEW MASTER INTERVIEW GUIDE

CVSA Peer Review Interview Guide

Data Collection Form: Jurisdiction questionnaire form – all questions

Jurisdiction	
Date/ Start & Finish times	
Interviewer(s): Lead Name Others	
Interviewee(s): Name/Title/Org/ phone #/e-mail	

Q #	**Jurisdiction Program Baseline Parameters**	N[1]	Y/N[2] P/F/G/E[3]	Open-Ended Responses/ Elaboration/ Comments
	RAM Generator Sites			
1.0	How many RAM waste generator sites exist in your jurisdiction? **(if none, skip to next section)**			
1.1	[If applicable] What kind of working relationship does the jurisdiction have with these generator site(s)? Poor/Fair/Good/Excellent		Site 1: Site 2: Site 3:	
1.1.1	[If applicable] What kind of working relationship do you have with the generator site(s)? Poor/Fair/Good/Excellent		Site 1: Site 2: Site 3:	
1.2	[If applicable] What requirements must an inspector undergo to access the generator site in order to perform a pre-trip inspection?			
1.3	[If applicable] Is a pre-trip inspection schedule and notification established in advance of the shipment to assure inspectors are available as required to conduct the inspections?			

1.3.1	[If applicable] How far in advance of the shipment departure is the pre-trip inspection schedule and notice communicated?			
1.4	[If applicable] Is there a jurisdictional requirement pertaining to shipment notification?			
	RAM Destination Sites	N[1]	Y/N[2] P/F/G/E[3]	Open-Ended Responses/ Elaboration/ Comments
2.0	Does the jurisdiction have a RAM destination site? **(if none, skip to next section)**			
2.1	[If applicable] What kind of working relationship does the jurisdiction have with the destination site? Poor/Fair/Good/Excellent			
2.1.1	[If applicable] What kind of working relationship do you have with destination site? Poor/Fair/Good/Excellent			
2.2	[If applicable] What requirements must an inspector undergo to access the destination site in order to perform a post-trip inspection?			
2.3	[If applicable] Is a post-trip inspection schedule and notification established in advance of arrival to assure inspectors are available as required to conduct the inspection?			
2.3.1	[If applicable] How far in advance of the shipment arrival is the post-trip inspection schedule and notice communicated?			
2.4	[If applicable] Is there a jurisdictional requirement pertaining to shipment notification?			
	Other Jurisdictional Factors, such as Transportation Routes, Safe Parking, Inclement Weather and Delays	N[1]	Y/N[2] P/F/G/E[3]	Open-Ended Responses/ Elaboration/ Comments

3.0	Has the jurisdiction established any preferred routes for RAM shipments?			
3.1	Does the jurisdiction have any major construction projects planned for any RAM routes that may impact the transportation of RAM shipments?			
3.1.1	What will be the duration of the construction (anticipated start/end dates)?			
4.0	Does the jurisdiction have any "safe parking" locations?			
4.1	If so, how many?			
4.2	What selection factors did the jurisdiction use to establish the "safe parking" locations?			
5.0	Does the jurisdiction currently require or have plans to require the escort of any shipments of RAM through its jurisdiction?			
5.1	If so, what will the RAM escort be armed or un-armed?			
5.2	Will the RAM escort be done by state employees or third party?			
6.0	How are inclement weather or other delays/issues handled to prevent the program from being overly burdensome?			
	Tracking and Level of RAM Transportation Activity	N[1]	Y/N[2] P/F/G/E[3]	Open-Ended Responses/ Elaboration/ Comments
7.0	Are RAM inspections tracked?			
7.1	If so, how are inspections tracked?			
8.0	How many inspections have been conducted each year for the past 5 years?			
9.0	Are RAM transportation violations tracked?			
9.1	How are violations tracked?			
10.0	How many violations have			

	been identified each year for the past 5 years?			
10.1	How many violations have been cited each year for the past 5 years?			
11.0	Has there been a trend?			
12.0	Does the jurisdiction currently or is it planning to monitor/track shipments of radiological materials through its territory?			
13.0	How many RAM movements take place through the jurisdiction each year?			
14.0	Does the jurisdiction's program have personnel trained in satellite tracking systems (TRANSCOM)?			
	Specific or Additional Jurisdictional Regulatory Requirements/Policies	N[1]	Y/N[2] P/F/G/E[3]	Open-Ended Responses/ Elaboration/ Comments
15.0	Are jurisdictional penalties levied for violations/deficiencies?			
15.1	If so, how much are these penalties?			
15.2	How many penalties have been levied each year for the past 5 years?			
15.3	What is the money used for?			
16.0	Does the jurisdiction have a law, policy, regulation that requires inspection of RAM shipments that move through the jurisdictional area?			
16.1	Does this policy include all RAM shipments or is it specific to just certain types?			
16.2	If the jurisdiction requires its own inspection of RAM shipments, is coordination with carriers and notification requirements in advance of the shipment adequate to assure inspectors are available to conduct the inspection?			
16.2.1	How far in advance of the shipments arrival (en-route) will the inspection schedule			

	be developed?			
16.3	Does the jurisdiction law, policy, regulation limit the transportation of RAM shipments during peak travel hours in any city within the jurisdiction?			
16.4	Does the jurisdiction require any additional permits for carriers transporting RAM?			
16.4.1	If so, what do the additional permits cost?			
16.4.2	What are the funds collected from the additional permits used for (what do they fund)?			
16.5	What is the basis for these jurisdictional policies – risk, agency perception, public perception, other?			
16.6	In your view, what is the perception of executive management concerning RAM transportation through the jurisdiction?			
16.6.1	What do you think has influenced executive management perception?			
16.7	In your view, what is the perception of the general public concerning RAM transportation through the jurisdiction?			
16.7.1	What do you think has influenced public perception?			
16.8	Are there any special interest groups (or other factors) influencing policy on RAM transportation through the jurisdiction?			
16.9	Are there any other jurisdictions (i.e., tribal) that have laws, policies or regulations that impact the transportation of RAM shipments?			
	Inspection Procedures	N[1]	Y/N[2] P/F/G/E[3]	Open-Ended Responses/ Elaboration/ Comments
17.0	How many inspectors			

	typically conduct an inspection?			
17.1	How long does an inspection typically take?			
17.2	Do most inspections tend to take the same amount of time?			
17.3	When the length of inspections varies, what generally accounts for a shorter or longer inspection?			
17.4	Are inspection protocols sufficiently clear and precise?			
17.4.1	Are instructions for how inspectors should fill out inspection forms clear and precise?			
17.5	Are there clear policies specifying what an inspector should do if any violations or inadequacies are detected?			
17.6	Do clear reporting guidelines exist and, if so, what are they?			
17.7	Have mechanisms been established to capture lessons learned from inspectors?			
17.7.1	How are lessons learned captured?			
17.7.2	What lessons learned have been identified?			
17.7.3	How have these lessons learned been communicated and acted on?			
	Training/Experience	N[1]	Y/N[2] P/F/G/E[3]	Open-Ended Responses/ Elaboration/ Comments
18.0	How many trained/certified Level VI inspectors does the jurisdiction have and how long has each inspector been performing this function?			
19.0	What is the number of inspections conducted per year by each of the inspectors?			
19.1	Approximately how many inspections do you conduct each month, each year?			
19.2	Is this basically the same			

	number as performed by the other trainers; other inspectors?			
20.0	Do inspectors receive both general HM & Level VI Refresher Training on a regular basis?			
20.1	Is there a set schedule established for refresher training or is this training provided on an as needed basis?			
20.1.1	If scheduled, what is the refresher training schedule?			
20.1.2	How often do you receive refresher training?			
21.0	How is training tracked?			
22.0	How is refresher training accomplished?			
23.0	How many general HM refresher instructors does the jurisdiction have and what is the frequency and type of training they receive?			
24.0	How many Level VI refresher instructors does the jurisdiction have and what is the frequency and type of training they receive?			
25.0	How often do CMV inspectors receive updated FMCSRs/CFRs?			
26.0	Do RAM inspectors receive any additional training in RAM regulation beyond the CVSA Basic Level VI Course?			
27.0	What training do you have?			
28.0	In your opinion, how good is the training you receive?			
	Inspection Survey Equipment	N[1]	Y/N[2] P/F/G/E[3]	Open-Ended Responses/ Elaboration/ Comments
29.0	What type of radiation survey equipment is used by the jurisdiction to conduct inspections of RAM shipments (make/model)?			
30.0	What is the inventory of the equipment (how many of			

	each type)?			
31.0	Is the equipment issued to individual inspectors or to a division/squad/troop?			
32.0	Is the equipment certification/repair maintained by a central person or location?			
33.0	What is the jurisdiction standard to assure that instruments in the field are calibrated?			
34.0	In your opinion, how good is the equipment and equipment maintenance? Please explain.			
	Personal Protection Equipment.	N[1]	Y/N[2] P/F/G/E[3]	Open-Ended Responses/ Elaboration/ Comments
35.0	What type of Personal Protection Equipment (PPE) is used by the jurisdiction concerning RAM?			
36.0	What is the make & model of this PPE equipment?			
37.0	What is the inventory of the PPE (how many are on hand)?			
38.0	Is the PPE issued to individual inspectors or to a division/squad/troop?			
39.0	What is the jurisdiction standard to assure that PPE is maintained in proper condition for use?			
40.0	What types of training courses are those persons issued PPE required to attend?			
41.0	In your opinion, how good is the PPE equipment and equipment maintenance? Please explain.			
	Emergency Preparedness	N[1]	Y/N[2] P/F/G/E[3]	Open-Ended Responses/ Elaboration/ Comments
42.0	Does the jurisdiction have First Responders on RAM transportation routes that have been trained in RAM?			
43.0	Does the jurisdiction have			

	HazMat Operations Level Responders on RAM transportation routes that have been trained in RAM?			
44.0	Does the jurisdiction have HazMat Technicians on RAM transportation routes that have been trained in RAM?			
45.0	Does the jurisdiction have personnel on RAM transportation routes that have been trained in Critical Incident Command?			
46.0	Does the jurisdiction have personnel on RAM transportation routes that have been trained in HazMat Critical Incident Command?			
47.0	Does the jurisdiction have personnel on RAM transportation routes that have been trained in Radiological Emergency Operations?			
48.0	Does the jurisdiction have Radiological Response Teams on RAM transportation routes?			
49.0	Does the jurisdiction have hospital personnel on RAM transportation routes that have been trained in an EMS/Hazardous Material Course?			
50.0	Does the jurisdiction have EMS or hospital personnel on RAM transportation routes that have been trained in the Handling of Radiation Accidents?			
51.0	Does the jurisdiction have EMS or hospital personnel on RAM transportation routes that have been trained in the Radiological Emergency Management?			
52.0	Does the jurisdiction have any Radiological Emergency			

	Training available for local responders?			
53.0	Has the jurisdiction conducted any full-scale emergency response exercises involving RAM?			
53.1	If so, how many exercises have been conducted and when?			
53.2	Were you involved in these exercises?			
53.3	In your opinion, how good were the exercises and how well did those involved perform?			
53.4	In your opinion, how good is emergency preparedness for events involving RAM transportation?			
	Public Awareness	N[1]	Y/N[2] P/F/G/E[3]	Open-Ended Responses/ Elaboration/ Comments
54.0	Has the jurisdiction conducted any public outreach in regards to the transportation of RAM?			
55.0	Does the jurisdiction have any plans to conduct any public outreach in regards to the transportation of RAM?			
55.1	Is there a need for greater outreach and, if so, what is needed?			
	Assistance	N[1]	Y/N[2] P/F/G/E[3]	Open-Ended Responses/ Elaboration/ Comments
56.0	What can the CVSA do to better assist you to efficiently and effectively address the shipment of RAM through the jurisdiction?			
57.0	What can the DOE do to better assist you to efficiently and effectively address the shipment of RAM through the jurisdiction?			

[1]= number (type in numerical answer)
[2]=yes/no (type in yes or no response)
[3]= Poor/Fair/Good/Excellent (type in poor, fair, good, or excellent)

APPENDIX 6: 2011 MATERIALS COLLECTED BY STATE

New Mexico MATERIALS COLLECTED

- **Various materials from Department of Public Safety, State Motor Transportation Division Police**
  - **List of Level VI Command Staff and Areas of Responsibilities**
  - **Directory of WIPP Working Group Members**
  - **Map of Motor Transportation Division Districts**
  - **List of Level VI Inspectors by District**
  - **Description of Level VI Refresher Trainers**
  - **Level VI Inspectors Certification Status**
  - **Breakdowns of Level VI Inspections, Violations and Out of Service Violations**
  - **Inspection Report Examples**
  - **WIPP and HRCQ Shipments Procedures**
  - **Level VI Inspection Scheduling Procedures for WIPP Shipments**
  - **Survey Equipment Maintenance and Accountability Procedures**
  - **Survey Equipment Inventory List**
  - **Dosimeter User Procedures**
  - **Dosimeter Distribution List**
  - **Level VI Inspection Policy and Procedure for Shipments to WIPP**
  - **Policy and Procedure in Response to Notification of WIPP Shipment**

Idaho MATERIALS COLLECTED

- **Various materials from Idaho State Police**
  - **Overview of Idaho State Police Level VI Program**
  - **Maps of Idaho Highway System and State Police Regions**
  - **List of Level VI Inspectors by Region**
  - **Level VI Inspection Schedule Example**
  - **Survey Meter Calibration Check Form**
  - **Radiological and Hazmat Equipment Certification Forms**
  - **Returned Instruments Form**
  - **Equipment Inventory List**

APPENDIX 7: RELATION OF REPORT SECTION TOPICS TO QUESTIONS IN PEER REVIEW INTERVIEW GUIDE

Level VI Program Findings Topic	**Relevant Interview Guide Questions**
State Program Policies and Statutes	16.0, 16.1, 16.5, 16.9. 17.5, 17.6
Organizational Implementation and Relationships	1.0, 1.1, 1.1.1, 2.0, 2.1, 2.1.1
Inspector Training and Manpower	18.0, 19.0, 19.1, 19.2, 20.0, 20.1, 20.1.1, 20.1.2, 21.0, 22.0, 23.0, 24.0, 25.0, 26.0, 27.0, 28.0
Types, Locations, and Number of Inspections	1.2, 2.2, 8.0
Permits, Notification, and Scheduling	1.3, 1.3.1, 1.4, 2.3. 2.3.1, 2.4, 12.0, 13.0, 16.2, 16.2.1, 16.4, 16.4.1, 16.4.2
Conduct of Inspections—Inspection Procedures & Duration	17.0, 17.1, 17.2, 17.3, 17.4, 17.4.1, 17.5, 17.6, 17.7
Violations, Enforcement, and Penalties	9.0 9.1, 10.0, 10.1, 11.0, 15.0, 15.1, 15.2, 15.3
Inspection Equipment	29.0, 30.0, 31.0, 32,0, 33.0, 34.0, 35.0, 36.0, 37.0, 38.0, 39.0, 40.0, 41.0
Tracking and Managing Information	7.0, 7.1, 8.0, 9.0 9.1, 10.0, 10.1, 11.0, 12.0, 13.0, 14.0
Public Perception and Program Outreach	16.5, 16.6, 16.6.1, 16.7, 16.7.1, 16.8, 16.9, 54.0, 55.0, 55.1
Sharing Lessons Learned and Best Practices	17.7, 17.7.1, 17.7.2, 17.7.3
Additional Factors of Interest Topic	**Relevant Interview Guide Questions**
Transportation Issues and Restrictions	3.0, 3.1, 3.1.1, 4.0, 4.1, 4.2, 5.0, 5.1, 5.2, 6.0, 16.3
Emergency Preparedness	42.0, 43.0, 44.0, 45.0, 46.0, 47.0, 48.0, 49.0, 50.0, 51.0, 52.0, 53.0, 53.1, 53.2, 53.3, 53.4
Summary Topic	**Relevant Interview Guide Questions**
Notable Variations across States	All questions
Key Lessons Learned and Best Practices	All questions
Future Improvement Needs:	
What States Can Do to Improve Their Level VI Programs	56.0, 57.0 and other questions
How CVSA, DOE and other Government Entities Can Better Assist States with Their Level VI Programs	56.0, 57.0 and other questions