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

Updates from the State Visit in 2016

Prepared for
U.S. Department of Energy

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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*. Additional peer review site visits were made to New Mexico and Idaho in June and August of 2011. The results of these site visits are documented in the October 2013 report *CVSA Level VI Inspection Program Peer Review: State Differences, Lessons Learned, Best Practices, and Recommendations – Updates from State Visits in 2011*. Subsequent peer review site visits were conducted in Colorado and Illinois in November and December of 2014. The results of these site visits are documented in the October 2015 report *CVSA Level VI Inspection Program Peer Review: State Differences, Lessons Learned, Best Practices, and Recommendations – Updates from State Visits in 2014*. The latest peer review site visit was conducted in New Mexico in July 2016. This report is an update to the 2007, 2013 and 2015 reports based on this 2016 site visit. The additional findings are compared with the previous findings and presented using the same format as the previous reports. Although the status of Yucca Mountain is currently uncertain, there is still the opportunity from the 2016 site visit to provide recommendations for improvements to the Level VI inspection program.

The same scope and methodology described in the 2007 report apply to the 2016 site visit and this report. Rather than repeat the same information in this report the reader is directed to the 2007 report for these details. The three previous peer review reports may be obtained through CVSA's website at www.cvsa.org. Once on the website, to locate the reports, select "Programs" at the top of the page then select the "North American Standard Level VI Inspection Program" link. Next select the "News, Updates and Reports" link then select the "CVSA/WIPP Updates and Reports" link. On the resulting page the link to the 2007 report is labeled "CVSA Level VI Inspection Program Peer Review - State Visits in 2005-2006", the link to the 2013 report is labeled "CVSA Level VI Inspection Program Peer Review - Updates from State Visits in 2011" and the link to the 2015 report is labeled "CVSA Level VI Inspection Program Peer Review - Updates from State Visits in 2014".

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

- Variations across states;

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

SUMMARY OF FINDINGS FROM THE 2016 STATE VISIT

Notable differences across states include:

- Permit requirements;
- Escort requirements;
- Requirements for inspection of RAM shipments;
- Route and time restrictions;
- Types of inspection equipment and PPE;
- Number of certified Level VI inspectors;
- Requirements for access to generator sites;
- Inspection duration (varies across states from 40 minutes to 2 hours);
- Citation requirements and fines for violations and their disposition; and,
- Mechanisms to capture and disseminate lessons learned.

Key lessons learned and best practices include:

- Close contacts with generator and destination sites (e.g., joint meetings and exercises) promote and maintain good working relationships.
- Phone calls (particularly from the driver 2-3 hours before arrival), TRANSCOM, and CMR insure adequate notification of vehicle arrival for timely inspections.
- Procedures for checking survey equipment and a central person that maintains recalibration schedules insures that the equipment is available and ready to use when needed.
- PPE includes personal dosimetry for each individual.
- Public outreach is a necessary activity to assure the public of the safety of RAM shipments.
- Continuous training and exercises are key to emergency preparedness. Exercises are more effective if they are organized with one person in charge and they are not interrupted by calls to service.

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:

- If needed, clarify state policies and statutes regarding inspections and reporting.
- Provide a process to track and review inspections and violations for quality control and to identify any trends that can be communicated to the Level VI Program community.
- Maintain a system to capture and disseminate lessons learned and best practices.

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

- CVSA to continue and increase Level VI Program training and Level VI Program outreach.
- DOE to
    - Provide RAP teams to speak at CVSA annual meetings.

- Continue and increase funding for training and exercises (specifically incident command training and tabletop exercises).
- Provide more RAD meters.
- Provide more public outreach on the success of the WIPP Program.

RECOMMENDATIONS FROM THE 2016 STATE VISIT

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

Peer review team recommendations made at visit closeout include:

- Program Management
  - Implement policies to provide clarity on expectations with respect to inspections and quality control measures.
  - Develop a process to track and review inspections and violations for quality control and to identify any trends.
  - Provide in-house general HAZMAT, CT and OBP instructors.
  - Capture lessons learned and disseminate to the field and the larger Level VI program community if applicable (with CVSA support).
  - Identify the state's routing authority and routing restrictions.
  - Identify safe parking locations and review their current suitability as safe parking locations.
- Training and Support
  - Provide HAZMAT awareness training to personnel who are operating around HAZMAT.
  - Provide focused training on the CVSA Level VI Inspection Procedure and the use of survey equipment (with CVSA support).

Recommendations based on the data analysis include:

- States should provide CVSA with timely inspector Level VI training status updates.
- CVSA to assist states in formalizing lessons learned and best practices and developing a repository of lessons learned and best practices that would be accessible by all program participants.
- CVSA to assist states with focused training on the Level VI Inspection Procedure and use of survey equipment.
- CVSA to develop a standardized lesson learned/best practices reporting format for the Level VI program.
- DOE to
  - Provide RAP teams to speak at CVSA annual meetings.
  - Continue and increase funding for training and exercises (specifically incident command training and tabletop exercises).
  - Provide more RAD meters.
  - Provide more public outreach on the success of the WIPP 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*. Additional peer review site visits were made to New Mexico and Idaho in June and August of 2011. The results of these site visits are documented in the October 2013 report *CVSA Level VI Inspection Program Peer Review: State Differences, Lessons Learned, Best Practices, and Recommendations – Updates from State Visits in 2011*. Subsequent peer review site visits were conducted in Colorado and Illinois in November and December of 2014. The results of these site visits are documented in the October 2015 report *CVSA Level VI Inspection Program Peer Review: State Differences, Lessons Learned, Best Practices, and Recommendations – Updates from State Visits in 2014*. The latest peer review site visit was conducted in New Mexico in July 2016.

PURPOSE AND OBJECTIVES OF REPORT

This report is an update to the 2007, 2013 and 2015 reports based on the 2016 site visit. 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 previous reports.

The same scope and methodology described in the 2007 report apply to the 2016 site visit and this report. Rather than repeat the same information in this report the reader is directed to the

2007 report for these details. The three previous peer review reports may be obtained through CVSA's website at www.cvsa.org. Once on the website, to locate the reports, select "Programs" at the top of the page then select the "North American Standard Level VI Inspection Program" link. Next select the "News, Updates and Reports" link then select the "CVSA/WIPP Updates and Reports" link. On the resulting page the link to the 2007 report is labeled "CVSA Level VI Inspection Program Peer Review - State Visits in 2005-2006", the link to the 2013 report is labeled "CVSA Level VI Inspection Program Peer Review - Updates from State Visits in 2011" and the link to the 2015 report is labeled "CVSA Level VI Inspection Program Peer Review - Updates from State Visits in 2014". The reader is encouraged to review the earlier reports as this report has references to them.

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 2016 site visit 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 2016 site visit.

APPROACH AND SCOPE

For the 2016 site visit the CVSA Peer Review Committee members represent various organizations including Colorado State Patrol, Idaho State Police, and CVSA. Appendix 1 lists the 2016 CVSA Peer Review Committee members and their organizational affiliations.

Initially two states agreed to participate in the 2016 peer review. However, one of the states eventually decided not to participate. The one state, New Mexico was visited in July 2016. This was the third time New Mexico had participated in the peer review process. A list of the peer review team members for the state visit and the specific dates of the visit are provided in Appendix 2.

The 2016 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 2013 report, the 2015 report, and the 2016 site visit and this report. In addition the four sets of site visit findings were compared in order to report if there have been any notable changes over the elapsed ten 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 may offer recommendations at the close of a state visit. 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 previous findings and the 2016 state visit including variations across states; and,
- Lessons learned, best practices, and improvement needs from the 2016 state visit by topic area.

STATE PROGRAM POLICIES AND STATUTES

Respondents were unsure if there are specific state or local policies, regulations, or laws for inspection of RAM shipments. Some believe it is agency guidance to inspect all HRCQ and WIPP shipments. There are no tribal policies that impact RAM shipments, but the state has a MOU for working with the tribes on WIPP shipments, and other opportunities for collaboration with the tribes (e.g., conferences, tribal caucus, etc.)

Most respondents believe there are no specific policies regarding actions when violations or inadequacies are detected. One respondent stated it is the officer's discretion to issue a citation. One respondent noted that the reporting guidelines for Level VI inspections are to report to the inspector's supervisor and then to the WIPP Coordinator.

IDENTIFIED LESSONS LEARNED, BEST PRACTICES, AND IMPROVEMENT NEEDS

There is uncertainty among the respondents about state policies and statutes regarding inspections and reporting. The agency should consider the implementation of policies to provide clarity on expectations with respect to inspections, quality control measures, etc.

ORGANIZATIONAL IMPLEMENTATION AND RELATIONSHIPS

The state has two generator sites (LANL and Sandia) and one destination site (WIPP). All respondents that have contact with the generator sites and destination site report that their relationships with the three sites are good to excellent. An invitation for a site visit, a location for inspectors to change into coveralls, participation in exercises and attendance at meetings were cited as examples of the good working relationships with the generator sites. Attendance at security and operations meetings and ease of communications for scheduling purposes were cited as examples of the good working relationships with the destination site.

IDENTIFIED LESSONS LEARNED, BEST PRACTICES, AND IMPROVEMENT NEEDS

As noted in previous findings, close contacts with generator and destination sites (e.g., joint meetings and exercises) promote and maintain good working relationships.

No improvement needs were mentioned.

INSPECTOR TRAINING AND MANPOWER

The state has 84 Level VI inspectors. As noted in previous reports, the number of inspections performed by each inspector varies depending on the inspector's location. For this state the number of Level VI inspections conducted by an inspector may range from one every 2-3 months to 20-70 per month. In general, inspectors conduct 80-100 Level I and Level II inspections per month.

Most respondents confirmed that HAZMAT and Level VI refresher training are conducted on a regular basis. HAZMAT refresher training varies from infrequent to annually and Level VI refresher training is conducted every two years. The WIPP Coordinator tracks the training using a spreadsheet and the Training Bureau tracks training as well.

There are three Level VI refresher instructors. Refresher training may either be delivered in a classroom in a central location or delivered by instructors that travel to the districts to conduct the training.

The state does not appear to have any general HAZMAT instructors or any Cargo Tank (CT) or Other Bulk Packaging (OBP) instructors. On respondent commented that these instructors are always brought in to conduct the training.

Inspectors receive updated FMCSR and CFR information once a year.

Other mentioned training RAM inspectors might receive besides general HAZMAT and the basic Level VI training include PRD training and Emergency Response Officer training. RAM inspectors do not receive additional RAM training but do receive occasional e-mail updates. On respondent felt there should be additional training.

The respondents rated the training they receive from good to excellent. One respondent believed the HAZMAT training has improved. Now they have Emergency Response Officers (ERO) who, in a HAZMAT incident assess the scene and order and coordinate the appropriate resources.

IDENTIFIED LESSONS LEARNED, BEST PRACTICES, AND IMPROVEMENT NEEDS

Rather than bringing instructors in to conduct the training, the state may want to consider having their own general HAZMAT, CT and OBP instructors.

The agency may want to consider providing HAZMAT awareness training to personnel who are operating around HAZMAT, especially those trained in general HAZMAT.

TYPES, LOCATIONS, AND NUMBER OF INSPECTIONS

Respondents reported that state issued credentials is all that is needed for access to the generator sites. Most did not know what the requirements are for access to the destination site. However a driver reported that a DOE security badge that includes a background check is needed for access to the destination site.

For this state, the number of Level VI inspections in 2012 and 2013 averaged approximately 637. But in 2014 with the WIPP closure during that year the number of Level VI inspections dropped to 159. With WIPP still closed in 2015 and 2016 the number of Level VI inspections for these years averaged 36. For this state in 2012-2014 approximately one third of the inspections were point-of-origin inspections and the remainder were en route inspections. In 2015 and 2016 less than 3% of the inspections were point-of-origin inspections.

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

Except for the state HAZMAT permit, respondents were not aware of any other permits required for RAM shipments. They did not know the cost of the permit or how the permit fees are used. This is consistent with previous findings that there are many variations in state permit requirements for RAM shipments.

The state uses the DOE's 8-week rolling schedule to assign Level VI inspectors for WIPP shipments. Copies of this schedule are provided to the POE managers and the first line supervisors are responsible for building the work schedules.

A driver stated that notification is made two weeks in advance of WIPP shipments. Once en route the WIPP Central Monitor Room (CMR) is used to track a shipment. Two to three hours before arrival the driver will call the state to notify of arrival. Other respondents mentioned that the 2-3 hour notice from drivers is very useful.

TRANSCOM is used for tracking shipments. In the past the agency monitored shipments 24/7 but now mainly relies on the 8-week schedule and driver notifications to coordinate the inspections.

IDENTIFIED LESSONS LEARNED, BEST PRACTICES, AND IMPROVEMENT NEEDS

As discussed in previous reports, the phone calls, TRANSCOM, and CMR insure adequate notification of vehicle arrival for timely inspections. In particular the call from the driver 2-3 hours before arrival is very helpful for ensuring prompt inspection.

CONDUCT OF INSPECTIONS – INSPECTION PROCEDURES & DURATION

In this topic area the findings of the 2016 visit were similar to the results discussed in the 2007, 2013, and 2015 reports. In particular:

- Number of inspectors per inspection is generally 1 or 2;
- Inspection duration typically ranges from 40 minutes to 1 hour; and,
- Factors impacting inspection duration include number of inspectors, weather and number and severity of violations.

When there are two inspectors per inspection one inspector completes the documentation while the other performs the inspection. Availability of manpower determines if there are one or two inspectors per inspection.

Respondents felt that inspection procedures and instructions for completing inspection reports are clear. It was noted that the CVSA Level VI inspection guide and training materials and Aspen provide clear guidance for inspection and reporting. In particular several respondents mentioned that Aspen is what they use for reporting. They easily enter information on each tab and if something is missed the Aspen program will catch it for them.

All respondents stated there is no mechanism for capturing lessons learned.

One activity included in the peer review visit was to observe mock Level VI inspections. These included a one-person inspection and a two-person inspection that demonstrated only the survey portion of a full Level VI inspection. The peer review team determined that the inspectors performed well in preparing the equipment for the survey and came to the correct conclusions to prepared simulated survey data and simulated mechanical defects. However for the two-person team the inspectors did not follow the CVSA Level VI inspection procedure when initially approaching the vehicle. It was pointed out to the inspectors that following the CVSA Level VI inspection procedure would have minimized radiation exposure during the inspection. Also it was observed that the two-person team moved the survey probe too quickly which resulted in the peer review team providing guidance on the appropriate speed to move the probe and using the slow/fast features of the survey instrument.

IDENTIFIED LESSONS LEARNED, BEST PRACTICES, AND IMPROVEMENT NEEDS

As noted in the 2013 and 2015 reports, capturing lessons learned from inspectors is important, not just for a particular state but also the larger Level VI Program community. States should insure that lessons learned reach each inspector and can be accessed as needed with a formal repository for lessons learned. CVSA will assist the states to disseminate relevant lessons learned to the broader community.

Based on observations of the mock Level VI inspections, there may be a need for inspectors to carefully review the CVSA Level VI inspection procedure and the use of the survey equipment.

VIOLATIONS, ENFORCEMENT, AND PENALTIES

There does not appear to be an agency specific method for tracking RAM transportation violations. Some respondents report that violations are tracked using Aspen and SAFETYNET. There have been very few violations in the past 5 years (0 to 9 per year for an approximate total of 15 violations). Since there have been so few violations some respondents did not feel there was enough data to notice any trend in types of violations. However one respondent did mention tail lights.

Citations issued for violations appear to be rare if any. One respondent stated that their guidance is to issue a citation for an out-of-service violation. The peer review team received a list of violations and their associated penalty assessments. It states that the violation must be out of service for a penalty assessment to apply. The penalty assessments range from about $80 to $160 depending on the violation. If the out of service does not apply for the violation then a court appearance applies. As noted in previous reports, the states have differing methods of assessing penalties for violations.

IDENTIFIED LESSONS LEARNED, BEST PRACTICES, AND IMPROVEMENT NEEDS

There is no agency process for tracking violations. The agency should consider developing a method by which inspections and violations are reviewed by supervision or program management to identify any trends that can be communicated to officers, to industry, and to the Level VI Coordinator.

INSPECTION EQUIPMENT

This topic area includes:

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

The radiation survey equipment the state uses includes 191 Ludlum 14Cs, a few Ludlum 2241s, some portal monitors, RadEye personal radiation detectors (PRDs) and dosimeters. Meters are issued to POEs and some officers (including EROs). Two or three meters are kept at each POE.

The state has a central person that issues the equipment, monitors inventory including calibration due dates and performs the calibrations and repairs or forwards the equipment for calibration or repair. A database is used to insure that instruments in the field are calibrated. Respondents felt that the equipment is good and reliable, serves their needs, and is well maintained.

PPE kept at the POE includes boots, gloves, coveralls and respirators. Each individual has a Luxel dosimeter badge. Also EROs receive a bag that contains gloves, mask, goggles, overboots, Tyvek Level B suits, eye wash, duct tape, and filters. Training on PPE use consists of a video on donning and doffing. Annual training is in development. Respondents were not aware of any maintenance performed on PPE, but one respondent stated that a directive is forthcoming that will require annual inspections.

IDENTIFIED LESSONS LEARNED, BEST PRACTICES, AND IMPROVEMENT NEEDS

The state has procedures for checking survey equipment and has a central person that maintains recalibration schedules. This insures that the equipment is available and ready to use when needed.

Personal dosimetry is being used by the state (a best practice recommendation from the 2007 report).

TRACKING AND MANAGING INFORMATION

This topic area includes:

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

Tracking Shipments, Inspections, and Violations

As discussed in the Permits, Notification, and Scheduling section of this report, TRANSCOM is used to track shipments. There is no formal procedure for tracking inspections. One respondent sends copies of the inspection reports to a designated person, then scans them and saves them. Another respondent stated that inspections are tracked in Aspen and copies sent to supervisors. Two respondents did not feel that inspections are really tracked but are merely collected and filed with no analysis conducted. There exists an inspection data report but it needs improvement to be better understood and useful. The only quality control for the Level VI inspections currently is the FMCSA DataQs system. The same activities noted for inspection tracking are used for violation tracking.

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. This state maintains a spreadsheet to track inspector training. CVSA has a database that tracks inspector training status for each state but this system relies on prompt updates from the states.

Tracking Program Changes and Managing/Sharing Updates

As discussed in the Inspector Training and Manpower section of this report, inspectors receive updated FMCSR and CFR information once a year. No other mechanisms for program changes and updates were mentioned by respondents.

IDENTIFIED LESSONS LEARNED, BEST PRACTICES, AND IMPROVEMENT NEEDS

For this state there appears to be a need for improvements in inspection and violation tracking and inspection quality control:

- As discussed in the Violations, Enforcement, and Penalties section of this report, no agency process exists for tracking violations. The agency should consider developing a method by which inspections and violations are reviewed by supervision or program management to identify any trends that can be communicated to officers, to industry, and to the Level VI Coordinator.
- There is no agency process for tracking inspections. The agency should consider development of a procedure for how inspections will be tracked and analyzed for trends. The agency should also consider a process for how they conduct quality control on inspections.

The state should coordinate with CVSA to keep their inspector Level VI training data current in the CVSA database.

PUBLIC PERCEPTION AND PROGRAM OUTREACH

During the 2016 visit it was noted that after an organizational merger higher management has expressed a renewed interest in transportation of materials, motor carrier safety programs, and the Level VI inspection program. Higher management is perceived as being receptive and supportive of local commanders and there is a sense of willingness to learn and improve. The success of the WIPP program and the absence of any serious transportation incident involving the numerous radioactive material shipments through the state are believed to be factors that influence these perceptions. Other factors mentioned include policy, safety, political realities, and public perception.

Early in the WIPP transportation campaign, general public perception regarding RAM transportation through the state was not very positive. For example there were frequent protests. But now public perception is good, most likely due to WIPP's successful track record. There are still some sporadic protests, which may increase when WIPP shipments resume. Regional differences in public perception were also noted. It is believed that the southern part of the state is more receptive of RAM shipments because the WIPP site is an economic benefit to their region whereas the northern part of the state has no economic incentive for RAM shipments in their region. One respondent stated any public concern at the local level has been with issues at the facilities (e.g., WIPP) rather than with transportation issues.

Factors given that influence public perception of RAM transportation in this state include:

- Diversity of groups involved in the WIPP planning and implementation process;

- Perceived economic benefit of the material;
- Local news media stories about the WIPP facility; and
- The passage of time.

At the beginning of the WIPP shipments there were special interest groups that tried to influence policy. A state committee on HAZMAT and RAM addressed many of the issues the special interest groups had about WIPP. There have been individuals that attend public meetings and provide comments. One result of these comments has been additional RAM transportation training for first responders throughout the state.

Public outreach in the state has consisted of town hall meetings held after the incident at WIPP, meetings with WIPP at Carlsbad, public service announcements on television, and literature distributed to the public. A full-scale exercise is planned in which stakeholders and the public would be invited to observe. Increased public outreach is expected just prior to resumption of WIPP shipments that will include the DOE Roadshow. Some respondents felt that more public outreach is needed while others felt that the current public outreach (including the CVSA's public outreach program) is adequate.

IDENTIFIED LESSONS LEARNED, BEST PRACTICES, AND IMPROVEMENT NEEDS

Consistent with previous findings, public outreach continues to be a necessary activity to assure the public of the safety of RAM shipments.

SHARING LESSONS LEARNED AND BEST PRACTICES

The state does not have an established formal procedure for capturing lessons learned and best practices. This is consistent with previous findings that states have informal mechanisms to share lessons learned and best practices. For this state methods include the DataQs process and information exchange among inspectors. Respondents did not identify any lessons learned or best practices.

IDENTIFIED LESSONS LEARNED, BEST PRACTICES, AND IMPROVEMENT NEEDS

The agency may wish to consider implementing a formal process to capture and disseminate lessons learned and best practices. As noted in the 2013 report, lessons learned and best practices identified by each state may be of interest and applicable to other jurisdictions. A formal mechanism to provide this information in the state and to other jurisdictions should be available. CVSA will assist the state to disseminate relevant lessons learned and best practices to the broader community with resources such as the RAD Inspection News and the CVSA website.

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

Respondents were not able to provide specific information on routes designated or preferred for HAZMAT or RAM shipments or if any route restrictions exist. It is not clear if there are any established HAZMAT routes for the state. It was mentioned that shipments use the "WIPP route" but no further elaboration. The routing authority for the state could not be identified. Some respondents did state that there are no restrictions on travel during peak hours.

Information about major construction projects that may impact RAM shipments is communicated at the district level from the state's transportation department to the state police and then disseminated to the commercial vehicle enforcement and emergency response personnel. At the time of the state visit there was a major two-year interstate project.

Weather Restrictions

Although rare, inclement weather may hold up shipments at the POE. Vehicles are allowed to park at the POE if they are delayed due to weather.

Escorting Requirements

Escorts are not required for RAM shipments in this state. A driver listed four other states that use escorts and mentioned that escorting is less problematic when the escort is leading the shipment rather than following it.

Safe Parking Requirements

The state has safe parking locations. Three locations were specifically identified including a truck stop and a rest area. It was noted that each of the state's 12 districts would have a local plan for safe parking in their district.

IDENTIFIED LESSONS LEARNED, BEST PRACTICES, AND IMPROVEMENT NEEDS

Several respondents didn't know or were vague when interviewed about route restrictions, escorting requirements, and safe parking requirements. The agency may wish to consider:

- Verifying the state's routing authority and the state's routing restrictions (if any);
- Evaluating their criteria for whether or not to escort shipments; and,
- Identifying the safe parking locations and reviewing them for their continued suitability as safe parking locations.

EMERGENCY PREPAREDNESS

This topic area includes:

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

Exercises

Full-scale emergency response exercises have been conducted approximately every 1-2 years with the most recent exercise planned for October 2016. Smaller scale exercises are conducted more frequently (e.g., twice a year for tabletop exercises). Respondents that were involved in the exercises generally felt that the exercises were good but noted issues related to the conduct of the exercises. In one case the exercise was unorganized because there was no one person in charge. In another case the exercise had interruptions due to pulling resources to handle calls for service.

Trained Responders on Routes

The state reports that they have trained responders or personnel on RAM transportation routes in the following areas:

- First responders trained in RAM: The WIPP routes have personnel trained and cities must have personnel trained. Due to the high attrition rate of volunteers, rural entities may not always have trained personnel. Some EROs have received training. MERRTT training is being considered as an option for others.
- HAZMAT operations level responders trained in RAM: It was reported that there are trained personnel in the municipalities, on WIPP routes, and at the agency (holdovers from when the agency used to conduct HAZMAT response).
- HAZMAT technicians trained in RAM: At least three cities on the WIPP routes have local HAZMAT teams. There is a state plan where HAZMAT response is handled by other agencies via a memorandum of understanding (MOU).
- Personnel trained in Critical Incident Command: All EROs have taken the Incident Command System (ICS) courses 100, 200, 700 and 800. In addition supervisors have

taken ICS-300 and ICS-400. By statute the state police is the lead on any incident involving the highways.

- Personnel trained in HAZMAT Critical Incident Command: The EROs located around the state have received training. There are also the DOE's Radiological Assistance Program (RAP) and the state's Civil Support Team (CST) for help if needed.
- Personnel trained in Radiological Emergency Operations: The fire departments have trained personnel and some EROs have been trained. MERRTT training is being considered as an option for others. There are also the DOE's RAP teams if needed.

Respondents stated that their organizations either have radiological response teams or they rely on DOE's RAP teams or the state's CST for support. Two hospitals were mentioned that have personnel that have attended a course on EMS/hazardous material.
It was also reported that there is EMS or hospital personnel on RAM transportation routes that are trained in the handling of radiation accidents and radiological emergency management. Some radiological emergency training is available for local responders including tribal and primarily volunteer organizations. There are plans to expand training to more outside agencies.

Respondents generally felt that emergency preparedness in their state for events involving RAM transportation is good. Plenty of training and exercises was cited as the reason. It was felt that additional training and exercises would further improve the state's emergency preparedness.

IDENTIFIED LESSONS LEARNED, BEST PRACTICES, AND IMPROVEMENT NEEDS

Continuous training and exercises are key to emergency preparedness for events involving RAM transportation. Exercises are more effective if they are organized with one person in charge and they are not interrupted by calls to service.

4 SUMMARY

NOTABLE VARIATIONS ACROSS STATES

A comparison of findings from the 2016 state visit and the previous state visits indicate the following notable differences across states:

- Permit requirements;
- Escort requirements;
- Requirements for inspection of RAM shipments;
- Route and time restrictions;
- Types of inspection equipment and PPE;
- Number of certified Level VI inspectors;
- Requirements for access to generator sites;
- Inspection duration (varies across states from 40 minutes to 2 hours);
- Citation requirements and fines for violations and their disposition; and,
- Mechanisms to capture and disseminate lessons learned.

KEY LESSONS LEARNED AND BEST PRACTICES

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

- Close contacts with generator and destination sites (e.g., joint meetings and exercises) promote and maintain good working relationships.
- Phone calls (particularly from the driver 2-3 hours before arrival), TRANSCOM, and CMR insure adequate notification of vehicle arrival for timely inspections.
- Procedures for checking survey equipment and a central person that maintains recalibration schedules insures that the equipment is available and ready to use when needed.
- PPE includes personal dosimetry for each individual.
- Public outreach is a necessary activity to assure the public of the safety of RAM shipments.
- Continuous training and exercises are key to emergency preparedness. Exercises are more effective if they are organized with one person in charge and they are not interrupted by calls to service.

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

- If needed, clarify state policies and statutes regarding inspections and reporting.
- Provide a process to track and review inspections and violations for quality control and to identify any trends that can be communicated to the Level VI Program community.

- Maintain a system to capture and disseminate lessons learned and best practices.

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 to continue and increase Level VI Program training and Level VI Program outreach.
- DOE to
    - Provide RAP teams to speak at CVSA annual meetings.
    - Continue and increase funding for training and exercises (specifically incident command training and tabletop exercises).
    - Provide more RAD meters.
    - Provide more public outreach on the success of the WIPP Program.

5 RECOMMENDATIONS AND NEXT STEPS

The peer review teams at the close of the state visits often make recommendations. Additional recommendations are developed after analyzing the data.

PEER REVIEW TEAM RECOMMENDATIONS MADE AT VISIT CLOSEOUT

At the conclusion of the 2016 state visit the peer review team provided recommendations specific to the organizations visited. These recommendations are grouped according to the following topical areas:

PROGRAM MANAGEMENT

- Implement policies to provide clarity on expectations with respect to inspections and quality control measures.
- Develop a process to track and review inspections and violations for quality control and to identify any trends.
- Provide in-house general HAZMAT, CT and OBP instructors.
- Capture lessons learned and disseminate to the field and the larger Level VI program community if applicable (with CVSA support).
- Identify the state's routing authority and routing restrictions.
- Identify safe parking locations and review their current suitability as safe parking locations.

TRAINING AND SUPPORT

- Provide HAZMAT awareness training to personnel who are operating around HAZMAT.
- Provide focused training on the CVSA Level VI Inspection Procedure and the use of survey equipment (with CVSA support).

RECOMMENDATIONS BASED ON DATA ANALYSIS

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

- States should provide CVSA with timely inspector Level VI training status updates.
- CVSA to assist states in formalizing lessons learned and best practices and developing a repository of lessons learned and best practices that would be accessible by all program participants.
- CVSA to assist states with focused training on the Level VI Inspection Procedure and use of survey equipment.
- CVSA to develop a standardized lesson learned/best practices reporting format for the Level VI program.
- DOE to
    - Provide RAP teams to speak at CVSA annual meetings.
    - Continue and increase funding for training and exercises (specifically incident command training and tabletop exercises).
    - Provide more RAD meters.
    - Provide more public outreach on the success of the WIPP Program.

APPENDIX 1: 2016 PEER REVIEW COMMITTEE

Peer Review Committee	
Member	**Affiliations**
Tony Anderson	Idaho State Police
John Hahn	Colorado State Patrol
Carlisle Smith	Commercial Vehicle Safety Alliance
Larry Stern	Commercial Vehicle Safety Alliance

APPENDIX 2: 2016 VISIT DATES AND PEER REVIEW TEAMS BY STATE

State	Visit Dates	Peer Review Team Members
New Mexico	July 19-21, 2016	Tony Anderson
		John Hahn
		Carlisle Smith
		Larry Stern

APPENDIX 3: 2016 STATE ORGANIZATIONS COVERED AND FIELD OBSERVATIONS

State	Organization Covered/Field Visits
New Mexico	New Mexico State Police
	New Mexico Department of Homeland Security and Emergency Management
	New Mexico Environment Department
	Artesia Fire Department
	Roswell Fire Department
	Visionary Solutions, LLC

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: 2016 MATERIALS COLLECTED BY STATE

New Mexico MATERIALS COLLECTED

- **Various materials from New Mexico State Police**
  - **Penalty Assessments for Violations**
  - **Level VI Inspectors List**
  - **Summary of WIPP Shipment Inspections**
  - **Summary of Violations on Level VI Inspections**
  - **Select Level VI Inspection Reports**

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