Independent Oversight Review of the

West Valley Demonstration Project Transportation Emergency Management Program

September 2000

Office of Independent Oversight and Performance Assurance

OVERSIGHT

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Abbreviations Used in This Report

CFR	Code of Federal Regulations
DOE	U.S. Department of Energy
DOT	U.S. Department of Transportation
EAL	Emergency Action Level
EOC	Emergency Operations Center
EPZ	Emergency Planning Zone
ERO	Emergency Response Organization
HA	Hazards Assessment
HazMat	Hazardous Materials
MPOSS	Main Plant Operations Shift Supervisor
NRC	U.S. Nuclear Regulatory Commission
NTP	National Transportation Program
NTP-A	National Transportation Program – Albuquerque
OH/WVDP	Ohio Field Office/West Valley Demonstration Project
TCEAP	Transportation Compliance Evaluation/Assistance Program
WVDP	West Valley Demonstration Project
WVNS	West Valley Nuclear Services Company

Executive Summary

EVALUATION:	Independent Oversight Review of the West Valley Demonstration Project Transportation Emergency Management Program
SITE:	West Valley Demonstration Project
DATE:	September 2000

Scope

The U.S. Department of Energy (DOE) Office of Emergency Management Oversight, within the Secretary of Energy's Office of Independent Oversight and Performance Assurance, conducted a transportation emergency management review of the West Valley Demonstration Project (WVDP) and National Transportation Program (NTP)/ Transportation Compliance Evaluation/Assistance Program (TCEAP) in September 2000. The primary purpose of this review was to assess the effectiveness of the WVDP emergency management programs for transportation events involving hazardous materials (not related to nuclear weapons components), including the adequacy of direction provided by DOE line management to sites under their cognizance. This included the examination of the effectiveness of the Ohio Field Office, the Ohio Field Office/West Valley Demonstration Project (OH/WVDP), and contractor feedback and continuous improvement processes as mechanisms for identifying, analyzing, and addressing program deficiencies, implementing corrective actions, and demonstrating and verifying the effectiveness of those actions. The second purpose of this review was to observe and evaluate the effectiveness of TCEAP as an evaluation/ assistance process for line management.

Background

DOE Order 151.1, *Comprehensive Emergency Management System*, provides the framework for developing, coordinating, controlling, and directing all emergency planning, preparedness, response, and recovery functions for events at fixed facilities as well as for transportation activities. Effective management of the site's emergency response to an onsite transportation event is contingent upon the same levels of preparation, preparedness, and response capability as the response to an event at a fixed facility. Under DOE Order 460.2, *Departmental Materials Transportation and Packaging Management*, the Office of Environmental Management is responsible for policy and guidance related to transportation activities across the Department.

Offsite transportation emergency management requires high levels of integration and coordination among the Department, sites, and state, local, and tribal governments. Shipments may traverse multiple jurisdictions before reaching their destination. The initial offsite emergency response to incidents involving shipments of non-weapons-related DOE hazardous materials is the responsibility of local authorities. Therefore, DOE must ensure that mechanisms are in place to provide, in a timely manner, initial responders with the information needed to safely and effectively respond to a transportation incident involving these materials. The Office of Environmental Management, through the Albuquerque Operations Office, assesses field implementation effectiveness and provides technical assistance through the TCEAP under the requirements of DOE Order 460.2.

Results

The WVDP has established effective programs to support a response to a wide range of transportation emergencies on and off site. West Valley Nuclear Services Company (WVNS) has developed safety analysis reports for site facilities and activities, a hazards survey, and a hazards assessment. These documents provide adequate technical basis for the development of sitewide emergency action levels, coupled with pre-determined protective actions, to effectively address potential transportation emergencies. A hierarchy of comprehensive policies, plans, and procedures

implements the WVDP Transportation Emergency Plan, which is an appendix to the Site Emergency Plan. Roles and responsibilities for implementing the plans and procedures are clearly defined for operational emergencies resulting from transportation accidents. In addition, the Ohio Field Office and OH/WVDP oversight activities have contributed to the effectiveness of the emergency management program. The self-assessment programs, along with a well documented and managed corrective action process, continue to enhance the emergency management program. WVDP has established an effective set of agreements with offsite agencies to support an emergency response.

Nonetheless, some performance weaknesses were identified. Performance tests conducted during the evaluation demonstrated that not all initial decision-makers (Main Plant Operations Shift Supervisors) can interpret the shipping manifests and guidance documents that provide the information needed for an effective emergency response to protect the public and the environment. In addition, procedural weaknesses were noted in categorization, classification, notification, and formulation of protective actions.

The TCEAP transportation compliance evaluations of WVDP conducted by the Ohio Field Office provided meaningful site-level feedback. The TCEAP also provides guidance that facilitates timely corrective action for areas that are not in compliance. This line management evaluation/assistance program has directly resulted in improvements in the transportation management program and contributed to site compliance with DOE orders and Department of Transportation regulations. In addition, for this evaluation the offsite transportation performance test historically associated with TCEAP was expanded to include onsite capabilities for responding to an offsite event, thereby more effectively testing performance in accordance with DOE Order 151.1, *Comprehensive Emergency Management System*.

The results of the individual TCEAP evaluations across the Department are currently provided through an annual report, the first of which was issued in March 2000. The plan for fiscal year 2000 is to disseminate these lessons learned more widely through posting on a Web site and to distribute results quarterly; this plan has not yet been fully implemented. Currently the TCEAP focuses only on site contractor performance. A program to expand the assessment to include the effectiveness of DOE field elements is under review.

Conclusions

The WVDP emergency management program contains the essential elements of a transportation emergency management program as required by DOE Orders 151.1 and 460.2. WVDP has plans, procedures, tools, and agreements in place to implement the program for the postulated emergencies. However, improvement is needed in initial decision-makers' familiarity with and proficiency in using available procedures and guidance to make timely, accurate decisions for transportation events affecting the site, and in their ability to assist offsite responders in reacting to postulated transportation emergencies.

The line evaluation/assistance program activities associated with TCEAP are effective in stimulating program improvement. TCEAP provided a comprehensive evaluation of the WVDP transportation program to ensure that the requirements of DOE Order 460.2 and the Department of Transportation are met. Recent enhancements in the scope and rigor of performance tests associated with onsite transportation emergencies will permit a more thorough assessment of performance in meeting Departmental requirements. In addition, timely sharing of site data throughout the DOE complex could enhance the TCEAP feedback and improvement process.

FINDINGS

As directed by the Office of the Secretary of Energy, DOE has established a process for recording, tracking, addressing, and resolving findings identified by the Office of Independent Oversight and Performance Assurance as defined by DOE Order 470.2A, *Security and Emergency Management Independent Oversight and Performance Assurance Program.* The DOE Assistant Secretary for Environmental Management, as the cognizant secretarial officer, and the DOE field element (Ohio Field Office/WVDP/Albuquerque), as the cognizant line manager, are required to develop a corrective action plan to address the findings identified in this report.

1. Portions of emergency plan implementing procedures for responding to transportation events do not provide adequate, prompt decision-making tools for initial decision-makers.

2. Deficiencies in WVDP initial decision-makers' knowledge and proficiency resulted in failures to determine applicable protective action criteria, declare accurate categorization and classification, and perform timely notifications during transportation emergency response performance testing.

Low-level Waste Being Shipped Off Site

1.0 Introduction

The Office of Emergency Management Oversight reviewed the transportation emergency management program at the West Valley Demonstration Project in September 2000.

The U.S. Department of Energy (DOE) Office of Emergency Management Oversight, within the Secretary of Energy's Office of Independent Oversight and Performance Assurance, conducted a transportation emergency management review of the West Valley Demonstration Project (WVDP) in September 2000. The purpose of this review was twofold. One purpose was to assess the effectiveness of the WVDP emergency management programs in dealing with transportation events involving hazardous materials (not related to nuclear weapons components), since the site is transitioning from a production operation to a decommissioning and decontamination site with increased transportation shipments off site, and to determine the adequacy of direction provided by DOE line management to sites under their cognizance. The second purpose was to observe and evaluate the effectiveness of the Transportation Compliance Evaluation/ Assistance Program (TCEAP) administrated by DOE Headquarters through the Albuquerque Operations Office.

In 1997, the Acting Secretary of Energy approved the Office of Environmental Management Redeployment Initiative, splitting the transportation program into three groups. The organization structure of the National Transportation Program (NTP) is shown in Figure 1. The NTP is responsible for ensuring the availability of safe, secure, and economical transport services; consistency in regulatory implementation; and coordinated outreach for DOE programs. The NTP is managed by a team having Departmental crosscutting responsibilities, staffed by representatives from DOE Headquarters, the Albuquerque Operations Office, and the Idaho Operations Office, and organizationally reporting to the Assistant Secretary for Environmental Management (EM-1). The team makes joint decisions about activities that are shared complex-wide, such as policy development, budget preparation, and resource allocation. However, Headquarters' primary responsibility is program policy, Albuquerque's primary responsibility is ensuring efficient transportation operations, and Idaho's primary responsibility is systems engineering.

DOE Order 460.2, *Departmental Materials Transportation and Packaging Management*, establishes DOE complex-wide requirements to ensure that transportation operations are fully compliant with applicable regulatory drivers. The NTP-Albuquerque (NTP-A) assigns implementation responsibility to all DOE field offices. TCEAP, an element of the NTP-A, provides a systematic approach for DOE (Headquarters, field offices, programs, and contractors) to use as a management tool in evaluating and enhancing transportation regulatory and policy compliance.

The review included elements of the Transportation Compliance Evaluation/Assistance Program.

An element of the TCEAP evaluations includes the Department of Transportation requirements and responsibilities for shippers and carriers of hazardous materials. In the event of a transportation incident/accident involving DOE materials, the shipper is responsible for being able to immediately provide detailed information to local emergency responders regarding the hazards associated with the shipment. The shipper is also responsible for providing a 24-hour emergency response telephone number

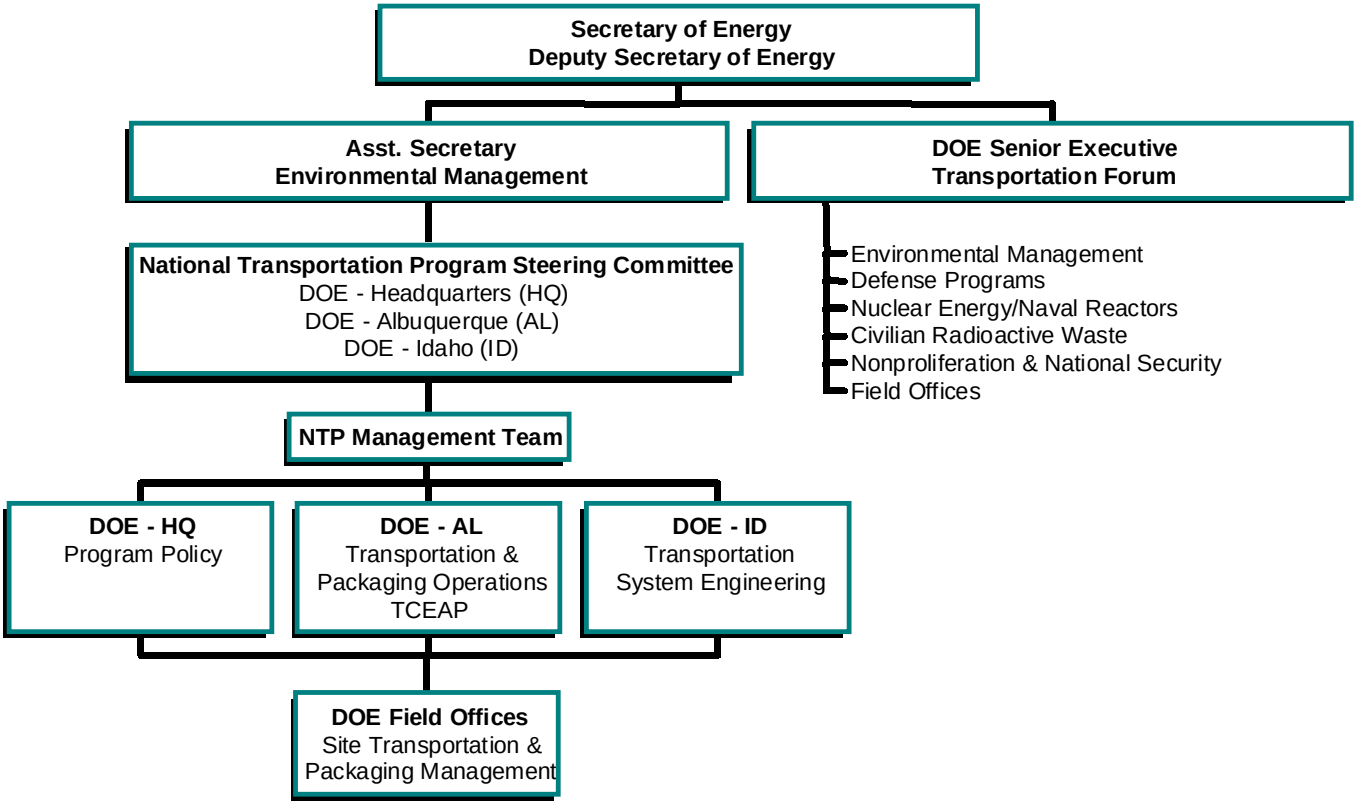

Figure 1. National Transportation Program Organization

where such information can be obtained. Because the management and operating contractor, West Valley Nuclear Services Company (WVNS), is the shipper for WVDP, WVNS is responsible for providing the emergency response information. The Oversight team collaborated with the TCEAP team in this aspect of the WVDP evaluation.

Under DOE Order 151.1, *Comprehensive Emergency Management System,* the Office of Environmental Management is responsible for all emergency management systems at WVDP, including transportation activities. The Office of Environmental Management, as the lead program secretarial office, is responsible for providing overall program guidance and direction through the DOE Ohio Field Office to OH/WVDP and WVNS. The responsibilities of WVNS include the site's emergency management program. Burns International Security Services is a subcontractor with limited emergency management roles and responsibilities.

The WVDP is located on approximately 200 acres within an approximately 3,300 acre New York State-owned reservation. It is the site of the only commercial nuclear fuel reprocessing facility ever to have operated in the United States, having operated from 1966 through 1972 under a U.S. Nuclear Regulatory Commission (NRC) license. In 1980, Congress enacted the WVDP Act (PL 96-368), which directed DOE to:

1. Develop containers suitable for the permanent disposal of high-level radioactive waste solidified at the WVDP.

2. Solidify the high-level liquid waste at the West Valley site into a solid form suitable for transport and disposal.

3. Transport the solidified waste, as soon as possible, to a Federal repository for permanent disposal.

4. Dispose of WVDP-generated low-level and transuranic wastes.

5. Decontaminate and decommission facilities used by the WVDP according to requirements prescribed by the NRC.

The NRC license is held in abeyance while DOE is conducting the project. Pursuant to the WVDP Act, DOE entered into a memorandum of understanding with the NRC in 1981 to clarify the roles of the parties with respect to the WVDP.

In addition, under a separate contractual arrangement with Nuclear Fuels Services (NFS), DOE took title to 125 spent fuel assemblies in storage in the Fuel Receiving and Storage facility. The spent fuel will be shipped to the Idaho National Engineering and Environmental Laboratory in 2001.

Platform for Upcoming Spent Fuel Rail Shipment

2.0 Results

The evaluation addresses areas included in DOE Order 151.1, review of emergency management programs, and corrective actions selected from previous WVDP self-assessments and the 1997 TCEAP evaluation. Each section includes key observations, conclusions, and a rating of Satisfactory, Marginal, or Unsatisfactory. These ratings are used to communicate the effectiveness of program implementation and to provide a perspective on where line management attention is warranted. Appendix A provides a more detailed explanation of the rating system.

Loading Low-level Waste for Transport

Hazards Survey and Hazards Assessment

The hazards survey and hazards assessment provide an adequate basis for emergency management planning.

DOE Order 151.1 requires that the scope and extent of emergency planning and preparedness at a DOE site be commensurate with the hazards. In accomplishing this graded approach, emergency management planning efforts begin with the hazards survey, wherein site-specific hazards and associated emergency conditions that may require response are qualitatively identified and assessed. If the qualitative process identifies hazardous material in quantities that pose a potential serious threat to workers or public health and safety, then a quantitative emergency planning hazards assessment (HA) is performed to estimate the severity of the impact. The assessment results should provide the technical basis for determining the scope of the site's comprehensive emergency management system. This review determined that the WVDP hazards survey and HA generally addressed the transportation attributes required by applicable requirements and guidance. However, some technical errors in assumptions and conclusions were noted that prevent the documents from being fully consistent with DOE orders and guidance, but do not impact public safety; these are discussed in the following paragraphs.

The WVDP hazards survey, last revised in May 2000, includes a comprehensive list of facilities at the site that may be the source of a potential hazardous material release. General categories of emergency events that could cause such a potential release include natural phenomena, malevolent acts, and transportation activities. Offsite activities associated with transportation arteries and commercial facilities are also considered, but no hazards were identified that could adversely affect the site. In addition to reviews of radiological and toxicological databases to determine inventories of materials requiring quantitative analysis, physical walk-downs of facilities were performed to confirm database accuracy and the facility conditions that were used for performing the quantitative analyses in the HA. The hazards survey is based on checklists of appropriate questions to achieve comprehensive survey information, uniformity of observations, and good documentation of results. The survey information is presented in tabular form, making the document a good emergency planning and response tool. The hazards survey is updated annually to ensure its currency.

The WVDP HA, updated and revised in July 2000, describes the assessment process, facility operations, processes, site demographics, and hazards. Also described are the administrative controls and engineered safety features that aid in the identification of barriers to releases and the formulation of the HA output products, such as emergency action levels (EALs). The HA relies

heavily on process hazards analyses performed for and documented in the site safety analysis reports. Those analyses provide technical basis information on facility and activity hazards, accident scenarios, and mitigative features, leading to identification of the accidents that represent the greatest risk to onsite personnel and the public. Because the persons who are responsible for reviewing engineering modifications or other plant process changes are also responsible for preparing the HA, any changes that could increase the hazards analyzed in the HA are immediately known to the analysts, and compensatory measures can be put in place before the hazard is introduced.

In the area of transportation activities, most of the hazardous materials that the site has in amounts exceeding threshold planning quantities are appropriately addressed by screening or quantitative assessment. However, nitric acid is delivered to the site in quantities exceeding the threshold planning quantity, but has not been assessed or screened in the HA. The Oversight team reviewed delivery frequencies and procedural controls on deliveries of nitric acid to the site. Only one more delivery will be made in 2000, and there will be only a few more deliveries in subsequent years as facility operations cease. Administrative controls, such as security management of traffic and strict procedural adherence, make an event involving nitric acid less likely than the calculated probability. Thus, the Oversight team concluded that such an event could be screened from the HA.

The Oversight team noted concerns about the definitions of the facility boundary and the emergency planning zone (EPZ). The "facility boundary" used for assigning emergency classes in the HA is 500 meters—the shortest distance from the center of the 220-acre WVDP site to the perimeter security fence. However, the center of the site does not represent a potential release point. DOE guidance suggests a facility boundary of not less than 100 meters, or more than 200 meters. Other criteria include consideration of defining the "facility" as the entire fenced security area and using the minimum distance from a likely release point to the closest perimeter fence as the analysis radius for all consequence calculations. At WVDP this distance is approximately 125 meters, not 500 meters. The result of the inappropriate selection of the facility boundary is that several events are categorized as operational emergencies not requiring classification when they may be classifiable emergencies. In addition, whereas the HA states that, "Consistent with DOE guidance, the minimum EPZ radius for all Operational Emergencies is 500 m (1640 ft)," the WVDP Emergency Plan defines the EPZ as, "the 200 acre fenced facility boundary," an irregularly shaped rectangle. The EPZ computed and proposed by the HA should correspond to the defined EPZ in the Emergency Plan.

The Oversight team reviewed the above inconsistencies with the DOE order and applicable guidance and determined that no impact on public safety is incurred for the following reasons. The HA properly defines the site boundary as approximately 1050 meters from the center of the secured area, even though a public road runs along the west side of the facility approximately 200 meters from facility release points of interest. However, the road is not considered the nearest site boundary because available resources can control access to it within one hour of an emergency declaration. This criterion is consistent with applicable guidance. Additionally, the extent of hazards is continually undergoing reduction, including near-term termination of operations of the main plant. If the road is promptly closed upon emergency declaration, members of the public will not receive a radiological dose approaching protective action criteria. The Oversight team therefore concluded that the public is provided an adequate margin of safety, notwithstanding the inconsistencies in assessment technical basis and results, and that the EPZ defined in the Emergency Plan is adequate.

In conclusion, with few exceptions the process for developing and maintaining the hazards survey and HA is effective, resulting in accurate, comprehensive documents to serve as the foundation of the transportation emergency management programs. The hazards survey and HA adequately describe and assess activities, facilities, and processes that could be affected by emergency conditions. Although inconsistencies with DOE orders and guidance were noted, public safety is not compromised, and the documents provide an acceptable basis for emergency management planning.

Rating: Satisfactory 

Program Plans and Procedures

Overall plans and procedures are effective.

An effective emergency management plan must be documented to define and convey top-level

management's emergency management philosophy and present a program that complies with DOE Order 151.1 for the facilities/programs within its purview. Specific, comprehensive implementing procedures must be developed in conformance with the documented program, and these implementing procedures must be usable by the personnel responsible for their implementation. The West Valley emergency plan contains the essential elements of an emergency management program required by DOE Order 151.1, and WVDP has developed a series of procedures that implement the plan. The plan and implementing procedures are appropriate for transportation emergencies postulated for WVDP activities.

The WVDP Transportation Emergency Plan, a component of the sitewide emergency plan, is primarily intended to address offsite transportation accidents. If the emergency operations center (EOC) were activated for an offsite transportation incident, a Transportation Emergency Management Organization, which is a subset of the emergency response organization (ERO), would staff the EOC. The Transportation Emergency Management Organization would also be available as a technical resource in responding to an onsite spill of hazardous material that is not severe enough to become a classified emergency. Implementing procedures for the Transportation Emergency Plan include emergency instructions for all WVDP employees, describing both the tactical field response and the strategic command response, and detailing the responsibilities of the ERO.

When a shipment leaves the WVDP site, a package of shipping papers is provided to the Main Plant Operations Shift Supervisor (MPOSS) office. In addition to documentation required by the Department of Transportation (DOT), an EAL Shipping Notice is attached as a cover to the package, indicating whether the shipment includes containers of hazardous material that if released would constitute an operational emergency. The Oversight team's review of a sample of shipping papers found that the information required by DOT regulations was present.

Typically, the initial notification of an offsite transportation accident involving a WVDP shipment comes from the carrier or local response agency to WVDP Security. Security then transfers the call to the MPOSS. Onsite transportation accidents would also be reported to the MPOSS and, in accordance with plant procedures, he would assume the role of incident commander and interim Emergency Director. The MPOSS evaluates the situation using the WVDP shipping package and EALs for transportation events and categorizes the event.

When an operational emergency is declared due to a transportation incident/accident, the EOC is activated and staffed by the Transportation Emergency Management Organization, Notification Officer, and Public Information Director. The Transportation Emergency Management Organization assesses the event, validates the event categorization, and provides support to the on-scene response effort, if requested. A technical assistance group called the Transportation Emergency Response Organization would be available for field response or to provide information and consultation to the on-scene incident commander. The Transportation Emergency Plan also provides for, if requested, an on-scene public affairs presence (for offsite events), if the event is expected to generate a high degree of public interest. However, this activity is not addressed in the Emergency Public Information Plan.

A hierarchy of site procedures, functional organization procedures, and individual procedures implement the site emergency plan. Emergency management procedures include checklists to provide ERO members with line-entry reminders of tasks to complete, together with references to other procedures or sections.

Emergency categorization and classification are implemented with a flowchart decision-making tree directing the user to appropriate tables of thresholds for operational emergencies not requiring classification and EALs for emergencies involving hazardous material releases requiring classification. Thresholds required by the order, including criteria for offsite hazardous material events for both DOE and non-DOE shipments, are provided in tabular listings. The site has also addressed other events not required by the order, such as loss of plant annunciators and site power, to provide conservative decision-making tools. Pre-determined protective actions are included with the thresholds to promote prompt decision-making. However, several procedural weaknesses were noted that contributed to MPOSS performance problems identified later in this report:

- Several emergency events are listed as Event Class "BELOW an ALERT." DOE orders and guidance do not provide for such a declaration. Several of these events might be Alerts if the DOE guidance concerning "facility boundary" definition were followed as discussed in the previous section of this report.

- The tables of thresholds for operational emergencies not requiring classification (which include offsite

emergencies) are footnoted with, "If the potential exists for the emergency to escalate, consider taking the conservative approach by classifying the emergency as an Alert." Classification does not apply to offsite emergencies included in the table. This footnote was inappropriately applied to offsite events during two tabletop exercises, resulting in offsite events classified as an Alert.

- One Site Area Emergency EAL exists at WVDP: activation of main plant stack monitor alarms and low differential pressure alarm, together with failure of plant ventilation high efficiency particulate air (HEPA) filters. The recommended protective actions for the EAL direct onsite actions only. Closure of the public road alongside the plant (Rock Springs Road) is not directed to establish control of the DOE site as an anticipatory or mandatory action, even though the road is approximately 200 meters from the release point, and the projected dose is 1 rem at 500 meters. Discretionary footnotes for all EALs and a procedural step in an EOC checklist address road closure but are not specifically related to this EAL.

Concerns were also noted in procedures related to notification processes. Formal mechanisms are not in place to ensure prompt notifications of local and state government under all circumstances. For example, a mutual aid request processed through a centralized dispatch system, such as fire or medical, serves as the only notification to the county. At the state level, the site relies on the recall of the New York State Energy Research and Devlopment Authority (NYSERDA) representative for ERO activation to constitute prompt notification to state officials. Documentation of the acceptability of this arrangement in lieu of a formalized protocol was not available. Additionally, the form used to initially notify DOE Headquarters of emergency conditions does not include items such as the affected facility/activity and a brief description of the event, including location, prognosis, and offsite support needed and requested.

FINDING: Portions of emergency plan implementing procedures for responding to transportation events do not provide adequate, prompt decision-making tools for initial decision-makers.

With some noted exceptions, WVDP has implemented a hierarchy of site plans and procedures, flowing from the safety analysis report, that permit effective management of transportation emergency response activities. Site emergency plan implementing procedures include many positive attributes, such as comprehensive EAL thresholds and pre-determined protective actions for potential emergency conditions. Weaknesses that were noted in some procedures directly related to transportation emergency event response detracted from responder performance (noted later in this report), but overall program plans and procedures are effective.

Rating: Satisfactory

Emergency Responder Performance

Initial decision-makers clearly understand their roles and responsibilities associated with transportation events.

The MPOSS is the 24-hour-per-day initial decision-maker with responsibilities and authority for offsite and onsite transportation events involving hazardous materials. With the exception of the previously identified procedural weaknesses, the MPOSS has decision-making tools available for providing emergency response information to offsite authorities 24 hours a day. Similarly, tools are generally available to the MPOSS to initiate the response to site transportation events to effectively mitigate consequences. However, in some cases expert knowledge and proficiency are required for determining protective actions, categorizing and classifying events, and making notifications with existing procedures. Several instances were noted where the MPOSS could not provide expertise to offsite responders and could not implement all required actions for events on or affecting the site.

As part of the Department's ongoing TCEAP, a team composed of Ohio Field Office and DOE Office of Environmental Management representatives evaluated WVDP transportation activities coincident with the Oversight assessment. TCEAP activities included evaluation of the WVDP ERO's ability to immediately provide emergency response information required by DOT (49 CFR 172.602 – 604), and assessment of WVDP's transportation emergency response. The TCEAP team developed hypothetical offsite scenarios for transportation accidents that could reasonably occur for WVDP activities. Performance-based evaluation

objectives for the TCEAP and Oversight team were mutually addressed through conduct of the scenarios. These scenarios were presented to the five shift supervisors who could serve as the site's initial Emergency Director.

Two exercises simulating a call from a remote emergency scene involving a WVDP shipment were performed, one of which was conducted during the back-shift to confirm the immediate availability of a knowledgeable person with access to shipment manifests. Additionally, two tabletop exercises were performed for each of four supervisors, simulating a transportation event at a remote location, and a transportation event adjacent to and directly affecting the site. The remote location scenario was designed to require implementation of the site Transportation Emergency Plan, confirm supervisor knowledge of the hazardous material being shipped, and confirm that comprehensive emergency response and incident mitigation information for an actual shipment manifest could be provided. The second scenario (event near the site) required implementation of the site emergency plan.

Both scenarios tested the supervisor's ability to formulate and implement the time-urgent decisions that are required in the initial stages of a transportation response effort. Shift supervisors were encouraged to make use of all reference materials and resources that would normally be available to them in responding to an incident or emergency. A TCEAP team member and an Oversight team member conducted each performance test. At least one individual from the WVDP emergency management staff was present to ensure clear communications using site-specific terminology, and to help validate the observations of the evaluation teams.

The performance tests indicate that the WVDP shift supervisors clearly understand their roles and responsibilities associated with being a site initial responder and decision-maker during the early stages of an event affecting the site. They also demonstrated good knowledge of their roles and responsibilities in interfacing with offsite initial responders to a transportation event involving WVNS as the shipper of record.

For transportation emergencies affecting the site, all supervisors initiated actions to assess the scene conditions and to determine event parameters to initiate the correct response. However, shift supervisors were unable to fully employ the 2000 Emergency Response Guide to determine the potential consequences of hazardous material releases and the applicable protective action criteria. Difficulties ranged from not being able to access hazardous material data given its identification number, to not being able to determine protective action criteria for various amounts of material released under various meteorological conditions. Notwithstanding difficulties in interpreting the 2000 Emergency Response Guide, all supervisors promptly initiated appropriate protective actions for site personnel to shelter in place. Some supervisors were not familiar with and did not make good use of emergency implementing procedures, and consequently were slow to accomplish tasks or did not complete tasks correctly. Most supervisors promptly and properly activated the ERO, but one supervisor could not locate the appropriate procedure, resulting in excessive delay. Only one supervisor was able to accurately categorize and classify both events correctly. Classification errors included:

- Emergency events not categorized as operational emergencies
- Events not declared due to concern that site workers might move around on the site upon emergency declaration, even when ordered to shelter in place
- Declaration of an event as an Alert even though the event scene was remote from the site.

Most supervisors initiated notifications in a timely manner, but one supervisor would not perform notifications without an Alert declaration. Another supervisor could not find the appropriate form and was unsure of his responsibilities in providing the Timely Notification Officer with information necessary to complete the notification process.

The following observations apply to response activities unique to scenarios involving the postulated emergency event remote from the site. Although Security Officers were proficient in immediately obtaining a callback number to use if the telephone were disconnected, not all supervisors immediately confirmed a callback number with the scene incident commander. One shift supervisor purposely disconnected from the scene incident commander while re-locating to his office to access shipping papers for the emergency event, a practice that was immediately corrected by plant management. Supervisors have no standard format for requesting and consistently documenting scene information from the scene incident commander, such as container integrity, time of day, and meteorological conditions, to ensure that field data are sufficient to provide an appropriate response. Consequently, repeat

requests for additional information were frequent. Other problems included one supervisor experiencing difficulty in correlating the field information on shipping container identification with the correct manifest to allow determination of applicable emergency response information.

FINDING: Deficiencies in WVDP initial decision-makers' knowledge and proficiency resulted in failures to determine applicable protective action criteria, declare accurate categorization and classification, and perform timely notifications during transportation emergency response performance testing.

In conclusion, tools in the form of procedures, equipment, and facilities are generally available to permit the WVDP ERO to respond adequately to site emergencies. Shift supervisors are able to implement pre-determined protective actions for plant workers impacted by emergencies affecting the site. However, deficiencies in shift supervisor knowledge and proficiency in using tools specific to transportation emergencies kept them from adequately fulfilling their roles and responsibilities under these circumstances. Weaknesses in initial decision-maker tasks, such as formulation of protective actions that have not been pre-determined, categorization and classification of emergencies, and performance of required notifications, require management attention.

Rating: Marginal

Feedback and Continuous Improvement

Feedback and continuous improvement processes have contributed to overall program effectiveness.

The WVDP has implemented effective processes intended to support the goal of continuous improvement in the site's emergency management program. The WVDP emergency management program includes critical assessments of sitewide emergency preparedness and the subsequent preparation and implementation of well-conceived corrective action plans. The WVDP receives feedback and corrective actions for the emergency management program from numerous sources, including the training and drills program, exercises, the self-assessment program, and internal and external independent evaluations. Corrective actions are effectively identified, assigned to responsible individuals, tracked to completion, and validated upon closure.

WVNS has established a well documented self-assessment program that provides roles and responsibilities, scheduling, conduct of the assessments, reporting, documentation of issues and concerns, and corrective action tracking. Each organization is responsible for conducting and reporting the results of its self-assessment. The West Valley Emergency Management Department structures its self-assessments based on the program elements embodied in the emergency management guides and verifies compliance with DOE Order 151.1. The assessment program is continuous, with three or four elements formally assessed each fiscal year. WVNS has developed a series of forms with documented lines of inquiry for each program element. These forms cover the major programmatic and evaluation criteria of DOE Guide 151.1-1, Draft Volume VI, *Emergency Management Evaluations*. In general, the Oversight team found that the self-assessment documentation adequately addressed each program element.

Once the self-assessment is completed, the report is submitted to the organizational manager. Those that require modification of plans, procedures, training, or performance are assigned to the appropriate staff member for action and are tracked in the Open Items Tracking System, unless they were corrected on the spot. Actions items that are "not significant," as determined by the responsible manager, are not required to be tracked. This review found one instance where the action to schedule meetings with offsite agencies and conduct offsite plan reviews was not accomplished and no follow-up action was initiated. Through this practice, the site is missing the opportunity to track and trend such items.

In addition to the self-assessment program, the WVDP site has been subject to operational readiness reviews, TCEAP evaluations, and the voluntary protection program process, as well as audits by OH/WVDP and the Ohio Field Office. Findings, recommendations, and opportunities for improvement have been documented and evaluated, and, when required, corrective action plans have been developed, tracked, and implemented. A representative sample of corrective actions (Ohio Field Office Surveillance Report S99-035E) was reviewed by the Oversight team, and it was determined that the actions were appropriate and

tracked to completion in accordance with WVDP and OH/WVDP procedures. The WVDP Security Department has been proactive, using best practices, in conducting a security assessment in support of the spent fuel shipment project. Security has conducted the assessment, used the information to enhance the security posture of the shipment, and proceduralized Security support during the actual shipment process

Once the need for corrective action has been identified, a corrective action plan is developed and submitted to the appropriate OH/WVDP representative for approval. It was noted that the three corrective action plans submitted by WVNS to OH/WVDP (in response to the triennial exercise, the Transportation Emergency Plan exercise, and an Ohio Field Office surveillance report) were initially disapproved by OH/WVDP and required resubmission. This demonstrates critical analysis during the review and approval process conducted by OH/WVDP but may also indicate a disconnect in coordination between the contractor and OH/WVDP. Upon completion of the corrective actions, the responsible OH/WVDP manager closes out the project task. Task closeout is validated by OH/WVDP Quality Assurance, unless closeout requires the conduct of an exercise.

The WVNS system of tracking action items provides a series of checks and balances by assigning individuals to take responsibility for completing identified actions and requiring signoffs by managers and supervisors to ensure that the action has been completed. The system provides reports, which WVNS and the OH/WVDP personnel use to check on the status of any action item. The OH/WVDP Correspondence and Commitment Control and Tracking program provides for a contractor-independent system to identify responsibilities, track actions, and validate closure of site action items. Both OH/WVDP and WVNS have established effective programs to manage the corrective action process.

The Oversight team reviewed the complete corrective action process as it was applied to the Transportation Emergency Plan exercise conducted on October 20, 1999. Although the field response elements met their exercise objectives and overall performance was good, multiple significant problems were identified in the site's management of the response. OH/WVDP stated in its surveillance report (S00-005, Transportation Emergency Plan Exercise) that the exercise "failed to adequately demonstrate implementation of the WVDP Transportation Emergency Plan." In response, a corrective action plan was prepared and submitted to OH/WVDP on November 29, 1999. In subsequent discussion and review of corrective actions between the OH/WVDP and WVNS, it was determined that an evaluation of the entire emergency management program was needed because performance indicators identified emergency management programmatic issues above the Transportation Emergency Plan issues. All corrective actions were tracked in the Open Item Tracking System and subsequently completed. These actions were independently reviewed by the Oversight team and verified to be complete. The effectiveness of these corrective actions, as well as the Transportation Emergency Plan, will be validated by a Transportation Emergency Plan exercise (either field exercise or tabletop exercise). The schedule of this exercise will be determined in conjunction with the preparation of the annual submittal of the Emergency Readiness Assurance Plan, due September 30, 2000.

In addition to site assessments, WVDP actively uses outside source lessons-learned databases and reports, such as the DOE Occurrence Reporting and Processing System and the Society of Effective Lessons Learned Sharing, to identify enhancements to the emergency management program. An individual is assigned to review lessons learned, identify reports pertinent to WVDP, and forward them to the appropriate manager. Participation in industry conferences also effectively contributes to program enhancements.

In conclusion, Ohio Field Office and OH/WVDP oversight activities, as well as WVNS self-assessments, have contributed to the effectiveness of the emergency management program. Additionally, WVNS and OH/WVDP have effective corrective-action and lessons-learned programs and consistently use the processes within these programs to implement corrections and enhancements to the emergency management program. Specifically, OH/WVDP and WVNS corrective action planning, task identification and tracking, and implementation of corrective actions are well documented and managed.

Rating: Satisfactory 

National Transportation Program/TCEAP

Thorough evaluations are being conducted in accordance with the Transportation Compliance Evaluation/Assistance Program.

The Office of Environmental Management administers the NTP. In 1997, the program was

redeployed from DOE Headquarters to Albuquerque and Idaho, with Headquarters maintaining responsibility for policy. The National Transportation Program Plan issued by Albuquerque in July 1998 provides the roles and responsibility for each of the Offices. DOE Order 460.1, *Packaging and Transportation Safety*, DOE Order 460.2, *Departmental Materials Transportation and Packaging Management*, and the DOE Headquarters Functions, Responsibilities and Authorities Manual have not been updated to reflect the organizational responsibilities implementing the NTP.

The primary goal of the NTP is to ensure safe, efficient, and timely transportation of DOE materials. Consistent with this goal, DOE Order 460.2 and the National Transportation Program Plan require the DOE operations and field offices to conduct compliance assessments at each DOE contractor facility, no less than every three years. This requirement has been implemented through the TCEAP, which has established a systematic approach for evaluating and enhancing transportation and packaging regulatory and DOE policy compliance.

Coincident with the Oversight assessment, a TCEAP team composed of Ohio Field Office and Office of Environmental Management representatives evaluated WVDP transportation activities. TCEAP team activities included evaluation of the WVDP ERO's ability to immediately provide emergency response information required by DOT (49 CFR 172.602 – 604) and assessment of WVDP's initial response to transportation emergencies. The TCEAP team developed hypothetical offsite scenarios for transportation accidents that could reasonably occur for WVDP activities.

The Oversight team evaluated TCEAP team performance in conducting performance-based tabletop exercises for the WVDP shift supervisors. The TCEAP exercise controller prepared challenging exercises that fulfilled the objectives of both the TCEAP team and the Oversight team, and provided the site with assistance in developing another meaningful training methodology. The increased scope of the TCEAP exercises to include both near-site and remote transportation events afforded the site the opportunity to critically examine more elements of their program related to DOE Orders 460.2 and 151.1. The exercises were conducted in a professional manner, and included a 100 percent performance test of day-shift and back-shift shift supervisors. Day-shift and back-shift calls from the "field" realistically exercised the WVDP 24-hour telephone numbers.

During the WVDP evaluation, the TCEAP team demonstrated a thorough system for evaluating program compliance through interviews and documentation validation. During their process, the TCEAP team members explained to site personnel the source of requirements that their program was being evaluated against. When issues were identified, the TCEAP team members provided on-the-spot assistance and guidance on how to correct the concern.

Also as part of their assessment, the TCEAP team performed a validation of corrective actions from their 1997 TCEAP evaluation at WVDP and also evaluated the WVDP review of lessons learned from the Type B investigation report of the Fernald incident regarding a leaking low-level waste container. The TCEAP found that corrective actions for the 1997 TCEAP evaluation were promptly completed. With respect to the Fernald incident, WVDP performed an extensive review and responded with a report providing the bases for concluding that no action on their part was necessary.

A TCEAP report is developed for each facility evaluation that if shared with the DOE complex would provide valuable lessons learned. Other sources of transportation-related lessons-learned information include the DOE Packaging and Transportation Measurement Methodology for Safety Metrics Indicator Program (SMIP) and the TCEAP annual report, both published by NTP. These reports provide summaries of events and lessons learned, as well as complex-wide statistics, on an annual basis. Also, there is currently a bi-monthly conference call between TCEAP and complex-wide transportation managers to discuss issues, and the minutes are produced and distributed; however, the minutes are a rollup summary without the necessary details of lessons learned. The first TCEAP annual report (March 2, 2000) states, "For FY-2000, NTP-A will provide a quarterly status report or update for lessons learned. The lessons learned will be provided through the NTP-A web site and will be available to all DOE and contractor transportation managers." These actions have not been implemented. The Office of Environmental Management has not established a formal mechanism for sharing and trending lessons learned for program offices responsible for onsite and offsite transportation. Additionally, DOT audit results at the various DOE sites are not available for others sites to learn from. Neither DOE Order 460.2 nor its associated implementing procedures currently include a discussion of complex-wide sharing of assessment results that would facilitate program improvement.

In addition to TCEAP evaluations of facility contractors, as described above, DOE Order 460.2 requires technical assessments of the DOE field

elements. However, no minimum time frequency is specified for the DOE field element assessments, and none have been initiated. A draft plan for conducting DOE field element assessments (Field Office Transportation Evaluation Program Management Plan) has been developed; it has not yet been approved and is currently under review by the Field Management Council.

In conclusion, transportation compliance evaluations of DOE facility contractors are being conducted in accordance with the TCEAP procedure. The TCEAP team demonstrated a thorough system for evaluating program compliance through interviews and documentation validation. Their evaluations provide meaningful site-level feedback that results in improvements to the transportation emergency management program. Additionally, the TCEAP performance-based testing offers a substantive contribution to site readiness for transportation emergencies. The performance tests were challenging, fulfilled their objectives, and were conducted in a professional manner. However, the benefits of the TCEAP evaluations are generally limited to the site being reviewed since TCEAP has not implemented its plans to distribute lessons learned. In addition, although TCEAP evaluations are implemented and effective, DOE Order 460.2 also requires evaluation of the DOE field elements' transportation and packaging management to ensure compliance. This requirement has not yet been implemented.

Rating: Satisfactory

Offsite Interfaces

Offsite interfaces are well understood and documented.

WVDP has recognized its fundamental responsibility to protect the public effectively in the event of a transportation emergency. This responsibility is shared with a range of external organizations and stakeholders. Among these stakeholders are other Federal agencies; state, county, and local governments; regulatory agencies; law enforcement agencies; and hospitals. These relationships were individually and collectively fostered in a comprehensive program of planning, preparedness, and response to establish and sustain an effective working partnership.

Offsite Emergency Response Exercise

The WVDP Site Emergency Plan contains numerous memoranda of agreement that have been established with county and state law enforcement agencies; local fire department and hazardous material (HazMat) authorities; and local hospitals. These agreements are comprehensive and form a basis for communicating roles and responsibilities, dispatching mutual aid, carrying out security operations, and providing for treatment and care of patients, which may be necessary in an emergency. WVDP has established a process designating accountability for ensuring that these agreements are routinely reviewed and updated when necessary. The Oversight team reviewed the memoranda identified within the FY 2000 Emergency Readiness Assurance Plan (ERAP) and found them all effectively maintained.

Routine meetings are conducted to keep stakeholders apprised of emergency management program activities. For example, the WVDP provides offsite support agencies with emergency response training courses to respond to an onsite event. This training provides an overview of the current site boundaries and site facilities, a briefing on the WVDP incident command system, WVDP emergency response equipment, radiation safety, issuance and wearing of dosimeters, types of contamination, biological effects, and the WVDP emergency medical response team. The training includes a site tour that identifies the location of hydrants, hazardous material storage locations, and radiological areas. In addition to presenting training, WVDP continually provides skills training courses (HazMat training and Street Smart Chemistry training – September 2000) and information to offsite agencies concerning DOE-sponsored training courses (REAC/TS courseware). This information is critical since WVDP does not have a fire department or medical transport

unit on site. During the planning process for the October 1999 WVDP Transportation Emergency Plan exercise, an exercise design and development team was formed to discuss offsite interfaces as they developed and conducted the exercise. Offsite agencies were also included in the post-exercise critique and evaluation process.

Overall, offsite interfaces related to transportation emergency management are well understood and founded on a comprehensive set of agreements. These agreements form a basis for communicating roles and responsibilities, dispatching mutual aid, carrying out security operations, and providing for treatment and care of patients, which may be necessary in an emergency. WVDP partnership with the stakeholders has been interwoven with virtually every element of the Site Emergency Plan.

Rating: Satisfactory 

3.0 Conclusions and Overall Rating

The West Valley emergency management program contains the essential elements of a transportation emergency management program as required by DOE Orders 151.1 and 460.2. With few exceptions, the hazards survey and HA are accurate, comprehensive documents that serve as the foundation of the transportation emergency management programs. WVDP has implemented a hierarchy of site plans and procedures, flowing from the safety analysis report, that include many positive attributes such as comprehensive EAL thresholds and pre-determined protective actions for potential emergency conditions. Tools in the form of procedures, equipment, and facilities are generally available to permit the WVDP ERO to implement an adequate response to emergencies. DOE Ohio Field Office and OH/WVDP oversight activities, as well as WVNS self-assessments, have contributed to the effectiveness of the emergency management program. Additionally, WVNS and OH/WVDP have effective corrective-action and lessons-learned programs and consistently use these processes to implement corrections and enhancements of the emergency management program. However, improvement is needed in initial decision-makers' familiarity with and proficiency in using available procedures and guidance to make timely, accurate decisions for transportation events affecting the site, and assisting offsite responders in reacting to postulated transportation emergencies.

Overall Rating: West Valley Demonstration Project – Satisfactory

The NTP line evaluation/assistance program activities associated with TCEAP are effective in stimulating program improvement. TCEAP provided a comprehensive evaluation of the WVDP transportation program to ensure that the requirements of DOE Order 460.2 and DOT are met. Recent enhancements in the rigor and scope of performance testing associated with onsite transportation emergency response provide a more thorough assessment of the site's performance in meeting Departmental requirements. Improvement in the timely sharing of site data throughout the DOE complex could further enhance the TCEAP feedback and improvement process.

Overall Rating: National Transportation Program/TCEAP – Satisfactory

WVDP Ratings by Report Element	
Hazards Survey and Hazards Assessment	Satisfactory
Program Plans and Procedures	Satisfactory
Emergency Responder Performance	Marginal
Feedback and Continuous Improvement	Satisfactory
Offsite Interfaces	Satisfactory

4.0 Opportunities for Improvement

The emergency management review conducted by the Independent Oversight team identified several opportunities for improvement. These potential enhancements are not intended to be prescriptive. Rather, they are intended to be reviewed and evaluated by the responsible DOE and contractor line managers, and prioritized and modified as appropriate, in accordance with site-specific programmatic and emergency management objectives.

West Valley Demonstration Project

- In the next revision of the hazards assessment, document the rationale for screening out hazardous materials. This documentation ensures accuracy during reviews and quality checks and is in accordance with DOE Order 151.1-1, Volume II, *Hazards Surveys and Hazards Assessments.*

- During the next annual review of the hazards assessment, the site should use the DOE guidance (DOE Order 151.1-1, Volume II, *Hazards Surveys and Hazards Assessments*) for defining the facility boundary and recalculate release consequences based on this boundary. This recalculation may result in changes to current EALs, such as closing Rock Springs Road.

- The WVDP hazards assessment is the technical basis for the development of the EPZ. The EPZ listed in the hazards assessment is different from what is reported in the WVDP Emergency Plan. It is recommended that the EPZ in the hazards assessment be re-evaluated for consistency with DOE orders and guidance. Additionally, ensure that the EPZ determined in the hazards assessment is accurately reflected in the WVDP Site Emergency Plan.

- The current Timely Notification Form (WV-3322) documents categorization, classification, whether a release is in progress, and protective actions but does not identify which facility is involved, type of release (radiological or non-radiological), type of event (HazMat, security, etc.) or other pertinent information. It is recommended that WVDP coordinate with the DOE Headquarters EOC (watch office) to identify the critical information that the watch officers are trained to extract during initial notification and include this information in the Timely Notification Form. Additionally, it is recommended that the form be reviewed by the state and associated counties to ensure that their expectations are met. It is also recommended that this form be transmitted to the state and local 24-hour notification points as a backup for initial notification to the State members of the WVDP EOC cadre and requests for assistance from county response elements.

- At WVDP, copies of shipping papers related to shipments of material that exceed EALs are given to the MPOSS for response to an offsite transportation incident, accompanied by a cover sheet, "EAL Shipping Notice." WVDP should consider filing the EAL notice sheet along with the shipping paper files required by DOT, for historical completeness.

- Onsite hazardous waste transport is controlled by detailed procedures. In contrast, onsite transport of hazardous chemicals is not controlled by specific procedure, although trained and qualified fork truck operators perform the transports. Consider proceduralizing hazardous chemical onsite transport in the same manner as hazardous waste transport.

- The Transportation Emergency Plan states that, if requested, Public Affairs should dispatch assistance to the offsite event scene. It is recommended that an "away-box" containing briefing materials, charts, and tables be pre-staged for use at the event scene. The contents and a procedure for use should be documented in either a checklist or procedure.

- The self-assessment forms used to assess emergency management were developed and published prior to the latest draft of DOE Guide 151.1-1, Draft Volume VI, *Emergency Management Evaluation*. Self-assessment forms should be reviewed against the programmatic and evaluation criteria contained in Volume VI to ensure both performance and compliance with the individual emergency management program elements at the WVDP.

- A joint review for consistency of the WVDP Site Emergency Plan with the emergency plans of the local and state governments should be conducted. This ensures meeting expectations in information flow, decision-making authorities, and communications. Additionally, it is suggested that all meetings with offsite officials be documented as part of the emergency management program.

- WVDP has done an excellent job in enhancing their emergency management program based on the results of the 1999 Transportation Emergency Plan exercise. Due to the extensive nature of the changes to the plan and associated procedures, it is recommended that a series of functional and integrated drills and tabletop exercises be used to train the ERO and test the elements of the Transportation Emergency Plan.

- Provide additional emphasis on basic emergency management training and drills for initial decision-makers. This will increase proficiency in critical initial actions, information collection, and regulatory notifications.

National Transportation Program/TCEAP

- The TCEAP mission statement states that it provides a systematic approach for evaluating and enhancing transportation and packaging regulatory and DOE policy compliance. To accomplish its mission to "enhance," NTP-A should expedite its plan to utilize its Web site to post TCEAP evaluation results. Consideration should also be given to posting TCEAP reports and DOT findings. The posted information should include at least quarterly updates of significant observations, trends, and lessons learned. Consideration should also be given to establishing a tracking system to ensure appropriate follow-up actions for significant transportation emergency issues.

- As part of this assessment, tabletop scenarios were developed to test the shift supervisors' ability to formulate and implement time-urgent decisions that are required in the initial stages of a transportation incident. Scenarios for this assessment were developed for events both at a remote location, and adjacent to and directly affecting the site. The near-site scenario added the DOE Order 151.1 interface with the DOT requirements. NTP-A should consider standardizing the inclusion of both remote and near-site transportation accident scenario tabletop exercises in the TCEAP.

- A draft of the Field Office Transportation Program (FOTEP) is currently under review by the Field Management Council. It is recommended that the program specify a minimum frequency for NTP-A assessments of field elements and the elements of Section 7 of the TCEAP. The program should also include target schedules for major activities of the assessment, such as final report issuance and corrective action plan development.

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APPENDIX A
EVALUATION PROCESS AND TEAM COMPOSITION

The evaluation was conducted under the direction of the Secretary of Energy's Office of Independent Oversight and Performance Assurance. The evaluation was performed according to formal protocols and procedures, including an Appraisal Process Guide, which provides the general procedures used by Independent Oversight to conduct inspections and reviews, and the evaluation plan that was developed specifically for this activity, which outlines the scope and conduct of the process. Planning discussions were conducted to ensure that all team members were informed of the review objectives, procedures, and methods.

Explanation of Rating System

The Office of Independent Oversight and Performance Assurance assigns an overall rating to the emergency management program; ratings are also assigned to select individual elements of the program. The rating process involves the critical consideration of all evaluation results, particularly the identified strengths and weaknesses. In the case of weaknesses, the importance and impact of those conditions is analyzed both individually and collectively, and balanced against any strengths and mitigating factors to determine their impact on the overall goal of protecting emergency responders, site workers, and the public. The Office of Independent Oversight and Performance Assurance uses three rating categories—Satisfactory, Marginal, and Unsatisfactory—which are also depicted by colors as Green, Yellow, and Red, respectively.

Satisfactory (Green): An overall rating of ***Satisfactory*** is assigned when the emergency management program being evaluated provides reasonable assurance that all of the site's emergency responders are ready to respond promptly and effectively to an emergency event or condition.

An emergency management element being evaluated would normally be rated Satisfactory if the emergency management function were effectively implemented. An element would also normally be rated as Satisfactory if, for any applicable standards that are not met, other compensatory factors exist that provide equivalent protection to workers and the public, or the impact is minimal and does not significantly degrade the response.

Marginal (Yellow): An overall rating of ***Marginal*** is assigned when the emergency management program being evaluated provides questionable assurance that site workers and the public can be protected following an emergency event or condition.

An emergency management element being evaluated would normally be rated Marginal if one or more applicable standards are not met and are only partially compensated for by other measures, and the resulting deficiencies in the emergency management function degrade the ability of the emergency responders to protect site workers and the public.

Unsatisfactory (Red): An overall rating of ***Unsatisfactory*** is assigned when the emergency management program being evaluated does not provide adequate assurance that site workers and the public can be protected following an emergency event or condition.

An emergency management element being evaluated would normally be rated Unsatisfactory if one or more applicable standards are not met, there are no compensating factors, and the resulting deficiencies in the emergency management function seriously degrade the ability of the emergency responders to protect site workers and the public.

Team Composition

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APPENDIX B
FINDINGS FOR CORRECTIVE ACTION AND FOLLOW-UP

This appendix summarizes the significant findings identified during the Office of Independent Oversight and Performance Assurance review of the WVDP transportation emergency management program. The findings identified in this appendix will be formally tracked in accordance with DOE Order 470.2A, *Security and Emergency Management Independent Oversight and Performance Assurance Program*, and will require a formal corrective action plan. The DOE Assistant Secretary for Environmental Management and the DOE field element (Ohio Field Office, WVDP, and/or Albuquerque) need to specifically address these findings in the corrective action plan. Other weaknesses and/or deficiencies identified in this report should be addressed by line management but need not be included in the formal corrective action plan.

FINDING STATEMENT	REFER TO PAGES:
1. Portions of emergency plan implementing procedures for responding to transportation events do not provide adequate, prompt decision-making tools for initial decision-makers.	10
2. Deficiencies in WVDP initial decision-makers' knowledge and proficiency resulted in failures to determine applicable protective action criteria, declare accurate categorization and classification, and perform timely notifications during transportation emergency response performance testing.	12

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