

TRANSAX '90: AN INTEGRATED TRANSPORTATION EMERGENCY RESPONSE EXERCISE PROGRAM INVOLVING TRANSURANIC WASTE SHIPMENTS*

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ABSTRACT

Over the last five years, the U.S. Department of Energy (DOE), and several states and numerous local governments have been preparing for the transportation of transuranic (TRU) waste to be shipped to the Waste Isolation Pilot Plant (WIPP) in southeastern New Mexico, near Carlsbad. Seven western states, represented by the Western Governors' Association (WGA), submitted a report to the U.S. Congress that discussed the concerns of their constituents related to the transportation of TRU waste through their communities. One of the three major concerns identified was emergency preparedness.

Initial funding to resolve concerns identified in the WGA report to Congress was provided by the U.S. Department of Transportation. Upon receiving funding, lead states were assigned responsibilities to devise programs aimed at increasing public confidence in the areas of most concern. The responsibility for emergency response readiness, as demonstrated through a program of training and responding to simulated accident scenarios, i.e., exercises, was accepted by the state of Colorado.

The state of Colorado laid out an exercise program which expanded upon the DOE training programs already offered to emergency responders along Colorado's designated TRU-waste transportation corridor. The ongoing program included a full-scale field exercise staged in Colorado Springs and dubbed, "TRANSAX '90."

TABLETOP IDENTIFICATION PROCESS

Most first responders (fire, law enforcement, and emergency medical) have had some training in responding to hazardous material emergencies. The majority of that training deals with, "what to do in the first 60 or so minutes immediately following the emergency." The most often omitted area of training is the interaction of a multitude of organizations to mitigate the emergency.

Public perception has treated any release of radioactive material, especially plutonium, as completely unacceptable. With this, and the desire to raise public confidence in mind, the state of Colorado established a schedule of tabletop exercises to resolve a list of predetermined issues.

Three tabletop exercises were designed around Port-of-Entry, rural, and urban interstate highway settings. Ft. Collins, in northern Colorado, was identified as the location for the Port-of-Entry scenario, Colorado Springs for the urban scenario, and Las Animas county, in southern Colo-

rado, for the rural scenario. Scenarios were designed to discuss issues related to inspection criteria, weather and road conditions, damage to all major components of the vehicle and cargo, as well as injuries and fire. The tabletop exercises were designed to resolve all of the issues that may arise involving preparedness, incident response, mitigation, and recovery in a WIPP transportation incident. Participants in these tabletops included first responders from local communities, county-level responders, various responders and planners at the state level, DOE response elements, and Dawn Enterprises (DOE's exclusive contract carrier used to transport TRU waste to the WIPP).

Preparation for the tabletops was coordinated by a state of Colorado project officer. The development of scenarios and identification of issues was accomplished through on-site visits and formal meetings with emergency management and response officials in the jurisdictions chosen for the tabletops. These sessions involved state and local representatives of fire, law enforcement, medical

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community, Ports-of-Entry, State Radiation authority, the state of Colorado's project officer, and representatives of the DOE. The product of these meetings was a basic exercise program concept paper. This document contained a schedule and a scenario with objectives for each of the exercises.

The state of Colorado identified the following tabletop objectives:

- Orient participants on appropriate WIPP shipment topics.
- Identify and document notification requirements.
- Determine coordinated emergency response needs, should an incident occur, to include classifying the event.
- Identify recovery responsibilities and actions required.
- Evaluate and update existing emergency response plans, standard operating procedures, mutual aid/assistance agreements, and checklists, as needed.

Tabletop exercises were conducted in August 1990, at the locations previously mentioned within the state of Colorado. The Governor's WIPP Project Manager served as moderator to identify the issues, encourage participation, and ensure discussions resulted in resolution or identified action(s) required for resolution. Facilitators were used to record key information on each issue as it was presented and discussed. An overhead projector and flip charts were used to enhance understanding and capture resolutions and action items. Additionally, the entire proceedings were audiotaped for use in clarifying any issue for the after-action report. The TRUPACT-II transporter was brought to the tabletop locations to facilitate familiarization with the vehicle and the TRUPACT-II package (an NRC Type B certified package used to transport contact-handled TRU waste, or waste with a maximum inner package dose rate of 200 mrem/hr). Each tabletop participant was supplied a package which included exercise objectives, administrative instructions, a list of players, and a glossary. Each package also contained exercise-specific issues to be resolved.

Each tabletop began with the moderator giving a brief introduction, followed by short presentations by each of the organizations represented. Each organization was given three minutes to outline their agency's overall role, specific role in the WIPP shipment program, and the personnel and material resources available to the WIPP program. All discussions occurred around a predetermined scenario to facilitate discussion and encourage participants to focus on the critical issues specific to that setting.

Some of the more significant issues discussed included the following:

- Notification, within the state, of WIPP shipments to facilitate Port-of-Entry inspector scheduling and state-obligated radiation monitoring.
- Preparation and distribution of public information packets for the media.
- Communication of the event classification and response levels that trigger various forms of state reaction.
- DOE's procedure for recovery of a TRUPACT-II package.
- Local response capability, both resources and procedures, to deal with radiological incidents.

After all three tabletops were completed, an after-action report was compiled and distributed. The report summarized those issues that were resolved and solicited responses to those yet unresolved issues. Issues were categorized as preparedness, incident response, or recovery.

MULTI-ORGANIZATIONAL ISSUES RESOLUTION PROCESS

Multi-organizational participation in emergency preparedness exercises is not unique. The commercial nuclear power industry has been conducting off-site emergency preparedness exercises for well over a decade. In addition, the Federal government has participated in these activities to major proportions at St. Lucie, Florida in 1984 and at Zion, Illinois in 1987. The added dimension is that this exercise takes place on an interstate highway, not at a fixed facility, and DOE's response includes active participation from several regional offices.

One of the most significant shortcomings identified in the tabletop exercise process was the absence of documented response protocol for responding to radioactive material transportation accidents. This was clearly an issue that crossed all organizations involved.

After the last tabletop exercise in mid-August, organizational components, such as Colorado Springs and the DOE, began to prepare transportation-specific response protocol and conduct a series of training sessions and drill activities.

One process that worked particularly well within the DOE community was the issue paper. The concept being that a particular issue was identified, such as "What DOE organizational element has responsibility for classifying and categorizing a transportation event?" Westinghouse (DOE's Management and Operating Contractor for the WIPP Project) took the lead for preparing what they thought was a consensus opinion and included the basis for that consensus conclusion. The issue paper was brought to a meeting of all DOE exercise participants and agreement was voiced or a compromise reached. Prior to conclusion

of the meeting, finalized positions were distributed to all DOE exercise participants. These final "position papers" then became the guidance document for DOE's response during the TRANSAX '90 exercise.

EXERCISE DESIGN AND CONDUCT

The entire TRANSAX '90 exercise effort was designed to be a cooperative effort, truly an intergovernmental exercise. An exercise design team was assembled with representatives from the state of Colorado; Colorado Springs; El Paso County; and DOE Headquarters, field and contractor personnel. This group was charged with developing exercise objectives, defining players, and tailoring the scenario to provide maximum benefit to all participants.

Exercise participants agreed early on that the scenario for the full-scale exercise should reflect a realistically expected event as opposed to a maximum credible accident as described in the WIPP Supplemental Environmental Impact Statement. The full-scale exercise scenario included the following components:

- Multiple vehicles with property damage, personal injury, and death.
- Damage to the TRUPACT-II transporter satellite tracking system so as to render it inoperable.
- Damage to the TRUPACT-II transporter tractor so as to require replacement prior to moving of trailer carrying TRUPACT-II's.
- Damage to the TRUPACT-II transporter trailer.
- Damage to the outer skin of one of the TRUPACT-II containers that would allow first responders to suspect the possibility of a radiological release, but with no inner container involvement.

All resources responding to the simulated accident scene were staged for safety reasons. Response by players was not on a real-time basis. A series of drills were conducted to document the time required for several of the major activities simulated such as the time to change a flat tire, replace tie-downs, and replace a damaged tractor. The tractor replacement was significant in that it demonstrated Dawn Enterprises' contractual compliance.

The focus of the exercise effort was to train potential responders and to increase public acceptance of TRU waste shipments. Efforts to achieve these two objectives included procuring the services of a video contractor to produce a documentary of the exercise events, heavily scripting the activities that occurred on the day of the exercise and inviting dignitaries and emergency response leaders along the WIPP transportation corridor between Idaho Falls, Idaho and Carlsbad, New Mexico to view the on-scene activities on the day of the exercise.

Westinghouse took a proactive role in preparing the WIPP site and other field elements for this exercise. A major activity included the creation of a TRANSAX '90 Task Force. A manager was assigned full time to coordinate aspects of procedure preparation, media interactions, DOE Radiological Assistance Program (RAP) team interface, predrill scenario preparation, off-site integration, carrier interface, administrative support, and scheduling. Four full-time equivalents were brought to Carlsbad, under the direction of the TRANSAX '90 manager, to support this effort. The task force met on a weekly basis. Westinghouse management, at the WIPP Project, took a keen interest in this activity. This support contributed heavily to the success of TRANSAX '90.

Each of the activities and efforts by the DOE and Westinghouse were mirrored by the state of Colorado, with Colorado hosting several joint progress and status meetings.

DOE Headquarters organized an operation emergency team to respond to transportation emergencies to which DOE has recognized response authority. An emergency response plan and training of team members, to respond using that plan, was completed.

FINDINGS AND FOLLOW-UP ACTIVITIES

As previously noted, the focus of TRANSAX '90 was to "train potential responders and to increase public acceptance of TRU waste shipments." In addition to this overall objective, additional objectives were identified separately for each of the exercise participants.

DOE Headquarters, for example, was to validate the adequacy of its emergency plan for responding to transportation emergencies involving radioactive materials. All of the Headquarters' objectives were completed successfully.

In conjunction with the DOE RAP, a generic procedure was developed for responding to a transportation accident involving a TRUPACT-II. This greatly assisted the DOE Rocky Flats RAP Team in responding to this exercise. A potential spinoff from this exercise would be the development of a uniform DOE RAP procedure for responding to any transportation accident involving a Type B package.

The WIPP site, as with other DOE sites, is dealing with an emergency preparedness culture change where the Management and Operating Contractor, and not the DOE have responsibility for operating the on-site Emergency Operations Center. For this exercise, new procedures were used to test this concept.

Approximately 150 observers were present at the full-scale exercise as over 60 responders participated and over 50 other players conducted off-site emergency management activities at emergency operations centers in Washington D.C., Albuquerque and Carlsbad in New Mexico, and

Golden and Colorado Springs in Colorado. Input to a joint state of Colorado/DOE after-action report is now underway. We intend to share the results of the tabletops and full-scale exercise with jurisdictions in and outside of Colorado.

We believe this exercise program represents an invaluable contribution to emergency preparedness efforts in the state of Colorado and the DOE, and are readily applicable along other portions of the WIPP transportation corridors. However, only through positive response to the lessons

learned in each exercise can we increase our confidence in the ability to respond effectively should a WIPP shipment incident occur. We are committed to doing just that! Not only will this effort better prepare us in the WIPP program, but also increase effectiveness in other areas of emergency management and response. A Colorado Springs response agency representative put it well at one oral review after TRANSAX '90. "Responders fear the unknown--WIPP shipments are no longer among the unknown!"