

WIPP STATES TRAINING AND EDUCATION PROGRAM

O. W. Eaton
Westinghouse Electric Corporation*
Carlsbad, NM 88220

ABSTRACT

Although radioactive materials have been transported by land, water, and air across this country for over 40 years with an exceptional safety record the need to pre-plan and be equipped and trained to handle a disaster involving hazardous materials (HAZMAT) still exists for the radioactive materials (RAM) community.

As a result, the Waste Isolation Pilot Plant (WIPP) began planning a new program for the nationwide transport of radioactive waste. New Mexico State and local emergency planners also felt compelled to ensure the public was protected and that the emergency responder in the field was capable of "protecting and defending the public safety."

The Department of Energy (DOE) was asked to fund training programs to accomplish this task. Analysis of the cost of developing a program for each state, producing training materials, and paying for instructors produced a prohibitive funding scenario. The one-time development of training materials, utilizing a delivery system made up of DOE-sponsored instructors from the WIPP proved a cost-effective alternative. This approach also provided a consistent training theme from state to state, and provided an excellent forum for the accurate dissemination of information about WIPP and the true hazards of radioactive TRU waste.

The intended audiences of these training programs were the fire fighters, emergency medical technicians, law enforcement officers and rescue personnel along the thousands of miles of routes through 23 separate states.

After reviewing numerous training programs already in the field, whether sponsored by DOE or not, it was determined that no single program was available which addressed transuranic waste alone; and obviously, no training programs existed for WIPP's specialized transportation system. As a result, four separate training programs have been developed to address the perceived or actual needs of the states and the responders.

INTRODUCTION

"Mandatory requirement: All transporters of a recognized hazardous material in specific quantities must provide emergency response training to all law enforcement agencies, fire departments, and medical/rescue services along any and all routes they intend to use any place in the United States."

No, this is not a requirement today; however, it may be one in the future. But what if you were given this particular assignment right now? What would it entail from the standpoint of funds, instructors, training aids, and the pure logistics of conducting such a program?

The United States Department of Energy (DOE), Waste Isolation Pilot Plant (WIPP) was challenged with precisely this kind of task this past year. The ultimate result of its efforts--mission accomplished!

BACKGROUND

Early on in the existence of WIPP (located in southeastern New Mexico near Carlsbad) the DOE was bombarded by questions from local and state governments as to what police officers, emergency medical personnel, and fire fighters were supposed to do in the event of a

radioactive waste transportation incident. This question did not just come from the local county or the state of New Mexico, it came from 23 states, hundreds of counties, and thousands of small and large cities, villages, and unincorporated areas.

Over the past few years there has been increased public awareness on the local, state, and federal levels regarding the health and safety impacts of transporting radioactive materials along our nation's highways. This awareness has produced numerous new transportation, environmental, and occupational safety regulations that have affected everyone from the local policeman and fireman to members of corporate boards across America.

Although radioactive materials have been transported by land, water, and air across this country for well over 40 years with an exceptional safety record, the need to preplan and be equipped and trained to handle a disaster involving hazardous materials still exists. Although WIPP's States Training and Education Program (STEP) was developed under the DOE, any corporation so tasked could devise a similar program. Possibly, our experience in creating and implementing STEP will help you in the years to come if faced with a comparable issue.

At WIPP we experienced a few additional obstacles in

* Work supported by the U.S. Department of Energy Assistant Secretary for Defense Programs, Office of Defense Waste and Transportation Management, under DOE Contract No. DE-AC04-86AL31950.

the overall development and implementation of STEP which others may not face at a corporate level. Our first task was to analyze the audience: exactly who would comprise our classes; who would our students be? We wanted to ensure that the instructors would fulfill our audiences' requirements, neither talking over their heads nor insulting their intelligence. When we determined that the fire, law enforcement and medical communities would be our audience, we selected instructors with backgrounds in those fields. It would have been less effective to place a Ph.D. Health Physicist in the training session and expect him or her to present meaningful information to the students. The questions the students would want answers to include: "What do I do in the back of an ambulance?"; "How do I control crowds and set up protective zones?"; and "How do I fight a fire?" A Health Physicist could deliver an exceptionally fine presentation on the risk, whether long-term or short-term, involved with radioactive materials, but he or she might have stumbled over questions specific to the varied tasks of emergency responders in the field.

While you may doubt that there are readily available people who have law enforcement, medical, or fire background, or a combination of those backgrounds, plus a solid understanding of chemistry or nuclear physics, and who are able to conduct these types of classes, our research and our success with this program has proven that these people do exist.

In addition to matching students and instructors properly, we had to look at what sorts of training materials were already available for transuranic waste scenarios. After reviewing numerous training programs currently in the field from the Federal Emergency Management Agency, Nuclear Regulatory Commission, DOE, Department of Defense, and others, it was determined that no single program existed which addressed just transuranic waste; and, there certainly was not a program which addressed the particular type of transportation package specifically designed for WIPP, the TRUPACT-II. As a result, four separate training programs were developed to address the perceived or actual needs of the states and communities and the responders themselves.

A wealth of material is available on response to radioactive materials accidents. Likewise, a great deal of material exists on responses to accidents involving most other types of hazardous materials. The wide variety of information that is available brings us to the next problem in establishing STEP: how do you take material about response to a radioactive materials accident and make it applicable to every fire department, law enforcement agency, and ambulance service along thousands of miles of route through 23 states in communities as small as Buckhead, Georgia and as large as Atlanta, Dallas, and Fort Worth?

In most training films and response courses that members of the staff have attended, an idealistic approach to incident response has been portrayed. A film in which five fire trucks, 20 law enforcement officers, four ambulances, and a specialized radiological response team show up on the scene almost instantly is not realistic in 99% of all incidents that could ever occur. A real life incident is more likely to

occur in an urban or rural area, and probably not in a heavily populated area possessing massive response capabilities. We found the best way to present information concisely, in a manner that small and large communities alike could understand, required us to simply produce our material and training aids to indicate exactly what is needed at the scene.

For example, if the TRUPACT truck drivers (two) and one person in a car are involved in an accident, and all three people are injured, how many ambulances and medical personnel are needed? Likewise, if a vehicle has rolled over on the side of the road, how law enforcement officers are required to secure an adequate perimeter around the accident scene to protect the public? How many fire fighters and engine companies are needed to extinguish one eighteen wheeler on fire?

WIPP's approach to STEP was to present this kind of specific information in a fashion that would allow a reasonable amount of equipment and personnel to respond to an incident. The trick was using numbers that would correlate to the numbers of people and equipment available in most locations.

What type of an accident or scenario are you going to present to students to reinforce the subject matter, and to give them a graphic example of how to employ the information you have imparted to them. One disservice that can be done to the students is to portray a minimal type accident or use a so-called "typical case" scenario. In our program we elected to present students with worst-case scenarios. If you prepare students for the worst case, they will be prepared for anything else that happens. When the inevitable question comes up about the 30-car pile-up on a fog-shrouded road in the middle of nowhere, experienced instructors will be able to provide suitable answers.

Taking all of these factors into account we eventually came up with four separate courses to be taught along our transportation routes.

The first course, and the one that we anticipated would garner the heaviest student load, is entitled the First Responder Course. This is a one-day or eight-classroom-hours course that is intended for the emergency units arriving first at the scene, who, without the aid of health physics personnel or other professional guidance and not under a full-scale command system, must take definitive action for the preservation of life and property. This course includes an explanation of radiation and radioactive materials, and an introduction into the incident command system as it would apply to a radioactive materials accident. The interfaces among medical, fire, and law enforcement personnel at the scene are also discussed. This course explains the exact physical form of the radioactive material being transported and details the construction of the transporter package so that a reasonable assessment may be made as to whether the container has broken open. It also specifically defines how to fight a fire safely, how to handle injured persons, and how to establish control of the scene from the law enforcement standpoint.

The next course, Command and Control, is two and one-half days long. This course is intended for individuals

who will be in partial or overall command or control at the scene of an incident. In this case, a partial commander will directly oversee his or her area of expertise; the scene commander will not direct a fireman on what size hose and what kind of nozzle to use on a fire, nor will he or she tell the emergency medical technician what size needle to use on an IV. The individual in charge of the medical phase or in charge of law enforcement will take care of the actual implementation detail. In some states these personnel maybe the State Police; in others, command personnel may include State Environmental Division groups or local agencies. To effectively command, these individuals must understand TRUPACT WIPP shipment contents, and understand the potential human and environmental impacts of a particular accident. Effective application of an incident command system is vital, as is the ability to understand the roles of fire rescue personnel, medical personnel, and law enforcement officers at the scene. Successful completion of this particular course provides the scene commander with the knowledge necessary to respond to the accident, establish command, and ensure protection of the public and the environment.

The Mitigation Course is designed for state and local safety, health, environmental, and radiological professionals who would be evaluating or overseeing the DOE in its assessment of any human or environmental impacts resulting from an accident. Emphasis is placed on the primary sources of professional assistance, such as the DOE Radiological Assistance Program and in-state contractors. Operation of instruments, gathering and analyzing samples, and developing an understanding of what actions are taken by the first responder are also discussed. The role of the DOE Radiological Assistance Team is explained in detail, as are the main interfaces of the incident command system and the responsibility of the DOE at the accident scene. The Mitigation Course is an eight-hour course.

The fourth course is Train-The-Trainer and is a two-day course. The First Responder Course actually makes up the first day of training. All four courses are stand-alone courses; there is no requirement to take one before another. Similarly, Train-The-Trainer does not require that participants take the First Responder Course. On the second day of this course, the WIPP instructor works with students to further explain training material, slides utilized in the training, lesson plan structure, and provides answers to some commonly asked questions. The instructor also helps provide insight into the most common concerns that have been expressed by students, and teaches would-be instructors on how to best field these types of questions. It is not the intent of this course to teach participants how to instruct; they must be certified instructors in their own fields prior to taking this particular course.

It was never the intent of STEP to actually train every single fire fighter, law enforcement officer, and EMT along the routes. What we wanted to achieve, in cooperation with the states, was a trained core of medical, fire, and law enforcement personnel to ensure an adequate response to any incident that may occur involving WIPP's in-transit

transuranic waste. In the first five states STEP trained approximately 22% of all of the fire, law enforcement, and medical personnel.

The statistics of STEP's activities in the First Corridor states are summarized below:

- (1) STEP is comprised of a five-person full-time staff.
- (2) While training in the first five states was in progress, (New Mexico, Colorado, Wyoming, Idaho, and Utah) STEP personnel were on the road for 183 calendar days and conducted 80 separate classes; 114 days were actual training days. In the southern states (in progress now) a larger student load is anticipated due to the larger population base, although there are basically the same number of states.
- (3) As of this writing, STEP has trained over 2,500 persons in five separate states. The training in the southern part of the United States (Second Corridor) has already begun, including South Carolina, Georgia, Alabama, Louisiana, Mississippi, and Texas.

As you might imagine, the monetary burden of a program like STEP is considerable. To give you an idea of what a training program similar to STEP would cost, the materials and services cost, lodging and travel for the instructors, and excluding the instructor's salary is running about \$50,000 per state.

The response from the first five states was overwhelmingly positive, and is well illustrated by a letter of commendation received from the Governor of Wyoming. The students' responses, however, were the ones we were really interested in, as far as what they thought of the training. Over 75% of all students rated the courses, on mandatory critique sheets, as being above average or excellent in their estimations. Some of the written comments included "this was the first course that I have ever attended dealing with radioactive materials that I actually understood." Another comment indicated that the student was impressed that "the instructor was one of my own, in other words, a fire fighter, and could relate to my personal concern of trying to suppress a fire involving a transporter hauling radioactive materials." These are just a couple of the hundreds of positive written comments received. Less than 1% of all students rated the courses as either needing additional work or poor in quality.

We have learned many lessons through working in this program in the last year. Going to five states initially to coordinate our efforts with each state government proved to be much more time consuming than working through an alliance of states such as the Southern States Energy Board or the Western Interstates Energy Board. It is very difficult in a meeting room to get five or ten or 15 states all to agree with each other on what the courses might need to include.

Aside from selecting the right instructors and finding the funding, there are five key factors that must be accomplished to be successful in this type of program.

First, you must identify your students so that you have a good understanding of their background and expertise. Second, you must match the instructors so they can relate to every concern the students have. Third, take a realistic

approach, not overemphasizing the suspected hazards of a material or trying to play them down as harmless. Fourth, use worst-case scenarios to give the student all of the technical tools that he or she would need to handle any type of

accident. Fifth, answer the specific needs of a state as it perceives problems.

For further information on WIPP or on the STEP, I will be available to talk to you at the end of this presentation.