Phosphorus Release in Miamisburg, Ohio

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At 4:30 p.m. on Tuesday, July 8, 1986, 15 cars of a 44-car CSX Transportation freight train derailed near downtown Miamisburg, which is in southwest Ohio, not far from Dayton. A tanker car containing white phosphorus caught on fire when holes in the side allowed air to enter (the material self-ignites upon contact with air).

Because of the potential for human health problems, a general evacuation was ordered by city officials at 5 p.m. The evacuation involved all of Miamisburg, some area businesses, a shopping mall, and several nearby communities; in all, some 30,000 persons.

The staff at the Ohio Environmental Protection Agency (Ohio EPA) initially heard of the accident through the media. The agency’s Emergency Response Team was sent to the scene immediately and CSX formally notified the agency at 5:45 p.m. Key agency personnel were then called and asked to return to work. I was sent to the Governor’s office to help coordinate initial communications and assess the incident.

At 10:30 p.m., Governor Celeste visited the site and ordered all appropriate state agencies to assist. This included the Ohio EPA (in emergency response and communication), the Disaster Services Agency (in coordination), the Public Utilities Commission (in coordination), the State Fire Marshall’s Office (in fire assistance), the Ohio State Patrol (in aerial surveillance), the Ohio Department of Health (in health issues), and the Department of Agriculture (in yard and garden concerns). By early morning on Wednesday, most agency representatives had arrived.

The head of the Ohio State and Local Government Commission was asked to coordinate the efforts of the various state agencies and I was asked to serve as the State’s spokesperson on the scene. The staff at the Ohio EPA district office in nearby Dayton and at the central office in Columbus also handled media calls.

On Wednesday morning, the situation was fairly stable. The water being pumped onto the burning car was holding down the smoke, other control options were being
discussed, and some people were allowed to return home. However, the situation changed that afternoon. A second car containing sulfur was lying next to the burning phosphorus car, and health officials were concerned about the possible formation of hydrogen sulfide. To prevent this from happening, an attempt was made to move the phosphorus car. When this was done, new leaks occurred.

A meeting of local city/county officials only was held at 4 p.m. to discuss options. The State was excluded from this meeting, even though the Director of the Ohio EPA personally asked that staff be allowed to attend. A press conference was called for 6 p.m. to announce that a special foam might be used to control the fire. At 6:05 p.m., on live television, the fire reignited and a huge cloud of smoke erupted from the tank car. A second evacuation was then called.

When the wind shifted, the command post was moved. The wind continued to shift during the night and the command post had to be moved again. Problems occurred when the media could not find the new command posts and when some reporters decided to stay at the site.

On Thursday, a decision was made to allow the fire to burn itself out. Because nobody was certain how much phosphorus remained in the tank, it was impossible to predict when the fire would actually be out. By Saturday morning, the fire had dwindled and fire personnel were able to pour sand in the car and extinguish the few remaining flames. The evacuation was lifted and people returned home. The ensuing cleanup took approximately two months.

**COMMUNICATIONS**

Initially, communication at the scene was difficult at best. People were hard to find, few telephones or walkie-talkies were available, and information was hard to verify. Later, a formal Emergency Operation Center (EOC) was set up with equipment and desks for all key agencies. A state hotline was set up and staffed around the clock with personnel from the various state agencies. Hundreds of calls were received and directed to the appropriate agency person.

The news media was the most used communication tool. Media from throughout Ohio and other nearby states covered the event hourly from about dawn until midnight, with one TV station videotaping continuously, 24 hours a day. The degree of sophistication ranged from fledgling reporter to the network press.

A local radio station used a two-hour talk show to allow people to ask questions. Staff from the state hotline were asked to assist in answering questions and concerns. Most of the questions dealt with health, both human and animal, and agricultural problems (gardens, grass, shrubs, etc.). Staff members at Ohio EPA offices and a hotline in Columbus also received calls.

Gaps in information occurred early because of the initial confusion and lack of knowledge. There was limited knowledge about who was doing what and what was actually happening. The local fire chief and city manager were clearly in charge of the operation, but with seven state agencies, numerous local officials, and various federal agencies on the scene, it was hard to coordinate information. This situation improved by the third day and was in good operation by the fourth.