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Lessons Learned Concerning The Human Element In Events And Training

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Lessons Learned Concerning the Human Element in Events and Training

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Abstract – As the number and complexity of responses to hazardous material incidents have increased, government regulators have implemented a national incident command system, bolstered by a host of protective measures and response equipment. Special advanced technical equipment has also been developed and made available to on-scene responders and command staff. Yet with all the investment in organizational and technical advance, the human element of emergency response remains critical and also needs our continued attention to ensure effective operation and success. This paper focuses on lessons learned from radiological events and training exercises that pertain to these human elements.

Introduction

There have been significant changes in the emergency response community in the last couple of decades. Emergency response assets deployed prior to thirty years ago were mainly comprised of law enforcement, fire department and ambulance personnel. These organizations were trained in their traditional roles. However, they possessed little skill or knowledge needed to deal with hazardous materials.

Change Agents

Changes in the emergency response community picked up momentum when President Jimmy Carter signed the new Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Implementation of the law changed the way local, state and federal organizations thought about hazardous materials. The law formally altered forever how these agencies dealt with hazardous materials incidents. The Superfund Amendments and Reauthorization Act (SARA) amended CERCLA in 1986. The SARA reflected the lessons learned in the first six years of organized response to hazardous material and waste sites. The law increased state involvement in hazardous waste site responses, increased the focus on human health problems posed by hazardous waste sites and encouraged greater stakeholder participation in making decisions on how sites should be cleaned up.

The Occupational Safety and Health Administration (OSHA) standard Title 29, Code of Regulation, Subpart 1910.120(q), "Emergency response program to hazardous substance releases" was mandated by SARA. This regulation provided specific rules to help protect emergency response workers such as law enforcement, fire department and emergency medical services. The rules are not simple to follow. The level of training, skills and education of the first responders increased to meet the technical challenge. Fire departments began forming new hazardous material units. Local emergency planning committees (LEPC) also began forming in locations that never considered them before. The LEPCs took on the preparedness activities that integrated the local response communities. The need for integrated operations became very apparent. The local emergency response agencies frequently reported to the same jurisdictional executive, such as a mayor or county administrator. However, they recognized the need for a single incident commander that was on scene directing the overall response. Therefore these local jurisdictions adopted a single incident command structure.

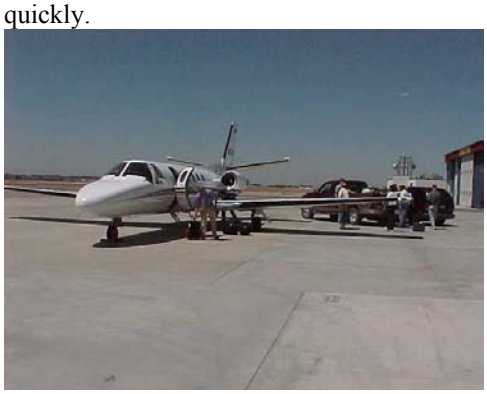
Lessons Learned

Most emergency situations are handled locally. However, large domestic incidents may result in numerous local, state and federal agencies engaging at one time. Some incidents that should be familiar to all include those at the Valdez Oil Spill, the Oklahoma City Bombing and the attacks of September 11, 2001. Coordination of the response assets was a key element in the successes and failures in each of these. One of the biggest failures of the Valdez response was the lack of clear organizational responsibilities. A lack of trust combined with not understanding what assets were available resulted in sub-optimal performance.

Criminals or terrorists caused some of these incidents. This adds an additional dimension and complexity to emergency responses. A number

of new law enforcement teams have been stood up to respond to these new types of events. For example, the Federal Bureau of Investigation (FBI) established the Hazardous Materials Response Unit in 1996 to address the threat of terrorism involving chemical, biological, and nuclear weapons and environmental crimes. Each FBI Field Division Office is also staffed with a Weapons of Mass Destruction (WMD) Coordinator whose responsibilities include liaison with first responders in the community and on the scene of an incident.

The following is an example of "simple response" that took place in the summer of 2003. The incident involved suspected criminal activity associated with improper disposal of "radioactive waste" at a county landfill in the Pacific Northwest. The shipper, in another state, hid a small glass jar containing a radioactive substance in a shipment of empty 55-gallon metal drums. The small glass container was hidden inside a 5-gallon open head metal drum. The small drum was nested amongst the larger drums. An employee discovered the hidden radioactive container after unloading the shipment. The event was protracted because of an early suspicion a bomb could be associated with the radioactive material. This was later determined to be unfounded. The county under-sheriff and a FBI special agent shared the incident command. This was an effective team because it was not clear if the potential crime crossed state boundaries. The two worked well with one another and understood the role each needed to play to get the job done. Also on hand were the local city fire department, and the state's department of environmental quality, including the radiation control personnel. A Department of Energy Radiological Assistance Program (RAP) Team was also dispatched to the scene. The team used a chartered aircraft to deliver specialized equipment and trained personnel quickly.



The incident was safely resolved on-scene without injury or incident. However, one agency expressed concern about the practices of another agency during discussions that followed weeks later. The discussions led to an understanding of the issues and a satisfactory resolution of the potential issues. The greatest concern in this case was the potential safety issues were not raised during the incident. A lack of an established relationship and a potential underlying adversarial relationship between agencies are the likely contributors to the concerns being raised at the time of the incident. These two elements have been aggressively addressed since then. The agencies have worked together to build an understanding of the others role and mutual trust.

The simple landfill event contrasts with the complexity of a major exercise held in Seattle Washington during May of 2003. The exercise scenario involved the detonation of a simulated radiological dispersal device (RDD) in Seattle, Washington. It also involved the release of the Pneumonic Plague in the Chicago metropolitan area. These acts were performed by a fictitious foreign terrorist organization.

Top Officials 2 (TOPOFF 2) was a national terrorism exercise that brought together government officials from many federal, state, and local agencies and departments, and the Canadian Government to test the domestic incident management in response to WMD terrorist attacks in the United States. The participant list included 109 different agencies. An actual event of this type would have a significant number of participants, if not as many. The Department of Homeland Security issued its summary report that contained several findings. Communication issues were highlighted as one of the major findings. Another was a lack of clarity in language. A Seattle Police Chief noted in a presentation to the Heath Physics Society in July of 2005 that the major response units set up separate command posts. He recommended major units establish a

unified command post when possible. Face to face communication permits viewing body language and other signals that facilitate effective communication. These are scarcely available on radio or telephone communication. They are virtually absent on written communication.

Our response communities are culturally independent. Each has its own language, which results in continued misunderstandings among the communities that come together in a response situation. The cultural differences can cause mistrust or adversarial relations. Issues associated with jurisdiction can also cause adversarial relations. Experience in incidents and exercises have highlighted the importance of trust and candid dialogue among response organizations. This is critical to the safety, team contribution, and effectiveness of responders.

The lessons learned from these events and training exercises resulted in the Department of Homeland Security issuing the National Incident Management System (NIMS) in 2004. The NIMS was developed so responders from different jurisdictions and disciplines can work together better to respond to natural disasters and emergencies, including acts of terrorism. It was specifically developed to assure there would be a unified approach to incident management; a standard command and management structure; and emphasis on preparedness, mutual aid and resource management. The NIMS should help in these areas when it is fully implemented in a couple of years. The system has also attempted to standardize terminology in the response community. Additionally, procedures, practice, and technology have been developed. But these alone do not ensure our success in the response community. After-action reports continue to show weaknesses in understanding how each response element should function, what precisely are their roles and responsibilities. However, we must pay attention to the human elements of incident responses, not just to technology needs. Responders should actively work to understand other responders' point of view in an effort to build relationships that lead to improving the incident response. Building a relationship with someone or an agency you have not worked with during a response is difficult at best. Relationships are best built during training and exercises that involve multiple response organizations. People need the opportunity to succeed and fail during simulated emergency conditions. Taking meaningful steps to resolve issues identified during training, exercises, and responses will grow the culture of understanding, contribution, and appreciation that will implement our advanced resources. It is also a "safe" time to take a chance or make mistakes. A wrong decision during an exercise is not an exercise failure. It is a safe significant emotional event and a growing experience for the responder. This significant emotional event from an exercise is likely to be remembered during a real incident. Remembering lessons learned will help the real incident response succeed.

Conclusion

Our response communities are culturally independent. Each agency has its own terminology and definitions, which results in continued misunderstandings among the communities that come together in a response situation. The cultural differences can cause mistrust or adversarial relations. Trust and candid dialogue among response organizations is critical to the safety, team contribution, and effectiveness of responders. Ongoing training, exercise, and response experiences have highlighted these issues. We must pay attention to the human elements of hazardous material responses, not just to technology needs. Responders should actively work to understand other responders' practices and point of view in an effort to build relationships that lead to improving the hazardous materials response. During a response is too late to build these relationships. Relationships are built during training and exercises that involve multiple response organizations. Taking meaningful steps to resolve issues identified during training, exercises, and responses will grow the culture of understanding, contribution, and appreciation that will implement our advanced resources.

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