# Preparing Communities through All-hazards Planning and Analysis:
Phase IV – Developing Emergency Response Procedures

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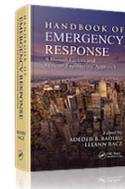
Over the last year, I have outlined a proven model for how communities can conduct all-hazards planning using a comprehensive, risk-based method. This has been used in over 60 communities around the US ranging from small, rural areas to large metropolitan areas. The model is based on four key steps: (1) identifying the hazards; (2) assessing the risks; (3) managing the risks and (4) developing emergency response procedures. My last article tackled the third step in the method – *risk management*. This article outlined various examples of how to prepare for technological risks through prevention and mitigation measures. These practical examples emphasized the whole community approach to risk management. This final article will focus on specific procedures and administrative aspects to ensure an effective emergency response plan.

Developing Emergency Response Procedures

One of the greatest challenges to producing a hazardous material emergency response plan is ensuring that the plan is interoperable with other community plans (e.g., emergency operations plan, pre-fire plans, facility plans, etc.). Facilities are required by EPA, OSHA, and DHS to develop different plans, containing many of the same elements, and satisfy each of these regulatory bodies. Even under a single regulatory agency there are different laws (e.g., Clean Air Act, Oil Pollution Prevention, Emergency Planning and Community Right to Know Act, etc.) that drive different types of plans (e.g., Risk Management Plan, Spill Prevention, Control and Countermeasures, Emergency Response Plans, Contingency Planning). Fortunately, EPA published guidance allowing facilities to produce an Integrated Contingency Plan in order to satisfy the multitude of environmental regulatory requirements. EPA requires LEPCs under EPCRA to develop a community emergency response plan. Because many of the required elements of this plan are covered in other plans (e.g., notification procedures, evacuation routes, description of emergency response procedures, etc.), it is important for the LEPC to review and integrate the emergency response plan with existing plans to ensure interoperability and avoid potential conflicts among the various plans. Additionally, community planners will find it much easier to update procedures and administrative information in one plan than in multiple plans. This article will address some of the ways LEPCs can use the planning process to ensure interoperability while complying with EPCRA.

There are three common approaches to meeting the EPCRA emergency response plan requirement:

(1) Develop a stand-alone emergency response plan

(2) Embed the plan in the ESF 10 Oil and Hazardous Materials Response annex to the EOP
(3) Attach the plan as an appendix to the EOP

Regardless of the approach taken in your community, it is important to ensure interoperability and establish solid cross-references to the required procedures. Many communities utilize a crosswalk or checklist to demonstrate that they have satisfied the EPCRA planning requirements. One example is provided at the end of this article. The rest of this article will highlight how this plan can be integrated into the EOP while ensuring interoperability.

Administrative Information

EPCRA requires that emergency response plans contain contact information for relevant parties. Contact information for emergency management officials, first responders, critical infrastructure, hospitals, schools, vulnerable facilities/population centers, translators, and hazardous material facilities (local contacts, not corporate headquarters which is often the case) must be included and verified annually for accuracy. To facilitate accessibility to this information, it is helpful to cross-reference the location where each of these contacts may be located within the EOP. Based on the method outlined in the "Identifying Hazards" article, facility points of contact information should be located with the facility inventory; this may be located in an appendix to the emergency response plan. Since many of these points of contact are listed elsewhere in the plan, it's important to identify who is responsible for maintaining the contact list and verifying accuracy. In rural communities, the contact information may lead to a home or cell phone of an individual, not an office. We have found that in some cases, the person referenced in the plan retired, moved or was deceased. There is no substitute for calling the number and verifying that the person who answers is the correct point of contact.

Notification Procedures

Timely notification of a hazardous material release is critical to ensuring swift and effective implementation of protective actions. These procedures can be confusing, ill-defined and duplicative in some communities. Due to the myriad of regulations affecting facilities where releases may occur there are numerous reporting requirements (e.g., 911, local emergency manager, state environmental department, national response center, etc.) making it easy to neglect other entities that also need the notification. In one community, we found that facilities had 4 hours to notify the state environmental department, but 24 hours to notify local emergency management. It is important to review local, state and facility plans and procedures to ensure consistency in reporting times and completeness. Planners can help ensure that these procedures are timely, effective and compliant as well as logical. This step can often be the limiting factor in responding effectively. The EOP most likely addresses general notification procedures but not those specific to hazardous material facilities. Therefore, the emergency response plan should specifically outline notification procedures from industrial facilities to the correct emergency response and coordinating agencies.

Planning Elements for Response Support

Upon notification of an incident at a facility, emergency managers at the EOC, hazardous material response teams and facility-based managers/responders should have ready access to the same information so that additional resources can be coordinated and directed to the scene in support of the IC upon request.

Second, the EOC should be prepared to coordinate and implement public protective actions through mass notification networks. This is where consistent planning will aid in delivering a

coordinated response. A comprehensive emergency response plan contains a list of the hazards and their quantity stored on site. It is a **best practice** to maintain a library of plume models and explosive overpressure distances for the hazardous materials stored on site that matches this list. These can be used to supplement information found in the Department of Transportation's Emergency Response Guide (ERG). This information enables swift decision-making once the extent of the incident is determined. It also aids the IC in determining the size of the cordon and safely locating the Incident Command Post and Staging area.

Third, responders and facility personnel often have incorrect assumptions about who is responsible for response activities when there is an incident. It is important to compare facility plans and assumptions with community plans and assumptions. While the facility is legally and financially responsible for the activities at their facility, emergency managers are responsible for preparing the community and responders for incidents that may not be "contained" at the facility which may affect the community. Therefore, it is important to define the interface between facility personnel and first responders during incidents. The planning process provides an excellent time to have these discussions and understand each entity's capabilities. Furthermore, table top and functional exercises are also helpful in enhancing coordination and identifying gaps in the various plans and assumptions.

Finally, pre-fire plans for each facility (when completed in accordance with NFPA 1620, Standard for Pre-incident Planning) ensure that first responders optimize situational awareness, arrival to the scene and scene size up procedures. Community planners and responders maximize the probability of a successful response when both entities have access to consistent, comprehensive information about the hazards within the community.

Public Protective Actions

Upon size up of an incident, the IC will determine if any public protective action, such as evacuation or shelter-in-place, is needed to protect the population at risk. Shelter-in-place is generally implemented when the release or spill has occurred and the concentration of the hazard is dissipating with time. Studies have shown that this measure is effective for 2-3 hours, but due to structural "leaks" the hazard may seep into the building through cracks and may eventually exceed the concentration of the hazard outside of the building. Evacuation is generally implemented when the release of the hazard is ongoing and the risk of exposure inside of the buildings is greater than the risk of exposure during evacuation. Planners should consider several factors such as the toxicity of the substance, duration of evacuation/exposure, special needs populations and the availability of accessible evacuation routes. The previous article in this series, Risk Management, recommended the use of a DHS-validated, online tool called Real-time Evacuation Planning Model (RtePM) - http://rtepm.vmasc.odu.edu to aid in pre-incident planning. The keys to these public protective actions are (1) swift decision-making enabled by a comprehensive emergency response plan, (2) effective, actionable mass notification procedures, and (3) public awareness of the notification and implementation procedures.

Mass Notification

Standard EOPs should already address mass notification procedures in the context of traffic accidents, natural disasters, weather emergencies, and other scenarios. So the hazardous material emergency response planners need to review these procedures, ensure they are practical and integrate them with the hazardous material incident procedures. Some of the unique aspects of a hazardous material incident include the following:

(1) Generally contained to a geographic area around a facility;
(2) Sometimes involves warning properties such as taste, odor, or physiological effects such as burning eyes, lacrimation, etc.;
(3) May present multiple hazards along with the primary hazard such as explosivity, reactivity, oxygen displacement.

Therefore, planners must account for these items in the mass notification procedure. Some communities have utilized opt-in notification and reverse-911 systems based on a GIS-enabled area in addition to traditional methods such as radio, television and sirens. With the onset of the smartphone and widespread use of social media, emergency managers must engage in both monitoring social media for resident reports to supplement situational awareness but also utilize social media to broadcast information and advisories in real time.

Next, the message must contain relevant information such as warning signs and indications of the hazard, preventive and protective actions (e.g., evacuation and shelter locations, shelter-in-place procedures, avoid low-lying areas). Planners must also take a whole community approach. This ensures that all responders, receivers and effected populations are included in the process. Planners must develop procedures to account for special needs residents, the elderly, infirm and those who speak languages other than English. **Best practices** include: pre-drafting relevant public notices for evacuation, shelter-in-place and fact sheets about the hazards that exist in the community for use by public information officers.

Planners should periodically test these notification systems to measure their effectiveness and ensure the citizens are aware of notification procedures and what actions to take when they are notified.

Recovery

Community planners can pre-identify resources and procedures by determining some of the time-sensitive tasks that may be necessary upon transition from response to recovery. While responsibility for cleaning up spills and releases belongs to the facility responsible for the release, this may not occur quickly enough to prevent further migration of the hazard. Therefore, the community should be prepared to call in experts with experience in spill response, clean up and restoration. A listing of these resources (e.g., contractors, equipment and supplies) aids community planners with the transition from response to recovery. Depending on local contracting requirements, the local contract/procurement office may issue a "sources sought" notice to identify these sources. **Best Practice:** Some communities establish a blanket purchase agreement with these firms so that in case their services are needed, the contracting mechanism is already established and will not delay issuing a task order and conducting the work. Finally, planners should identify a "recovery working group" with the responsibility to evaluate the impact on the community and address damages and restoration. By addressing these procedures within the plan, community planners will ensure a smooth transition to recovery and lessen the impact of the incident and time it would otherwise take to complete the recovery transition.

Conclusion

Community planners have the responsibility of developing whole community plans that address all-hazards. The numerous plans throughout the community, both private and public sector, may complicate this task due to redundant or mismatched procedures. Effective planning enables the whole community to prepare for all-hazards and develop consistent procedures. Including

hazardous material specific procedures in the emergency response plan and integrating these procedures within the EOP ensures interoperability among public agencies and the community.

MINIMUM EPCRA REQUIREMENTS FOR LOCAL HAZMAT PLANS

Locality: Name

PLAN REQUIREMENT	YES	NO
Identifies facilities within the EPD that are subject to EPCRA [Sec.303 (c) (1)]	☐	☐
Identifies routes likely to be used for transportation of hazmat [Sec.303 (c) (1)]	☐	☐
Identifies additional facilities contributing or subjected to additional risk due to proximity to facilities (i.e. hospitals, natural gas facilities, etc.) [Sec.303 (c) (1)]	☐	☐
Methods and procedures to be followed by facility owners and operators and local emergency and medical personnel to respond to hazmat releases [Sec.303 (c) (2)]	☐	☐
Designation of a community emergency coordinator and facility emergency coordinators who will implement the plan [Sec.303 (c) (3)]	☐	☐
Procedures providing reliable, effective and timely notification by the facility emergency coordinators and the community emergency coordinator to persons designated in the plan and to the public, that a hazmat release has occurred [Sec.303 (c) (4)]	☐	☐
Methods for determining the occurrence of a hazmat release and the area or population likely to be affected by the release [Sec.303 (c) (5)]	☐	☐
Description of emergency equipment and facilities in the community and at each facility [Sec.303 (c) (6)]	☐	☐
Identification of persons responsible for emergency equipment and facilities [Sec.303 (c) (6)]	☐	☐
Evacuation plans, including provisions for precautionary evacuation and alternative traffic routes [Sec.303 (c) (7)]	☐	☐
Training programs, including schedules for training of local emergency response and medical personnel [Sec.303 (c) (8)]	☐	☐
Methods and schedules for exercising the emergency plan [Sec.303 (c) (9)]	☐	☐