

Objective #2 Incident Assessment Demonstrate, or discuss in a tabletop exercise, the ability to identify the hazardous material(s) involved in the incident and to assess the associated health and physical hazards.
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A Basic Intent

The ability to recognize that chemicals are present and then determine how they will harm personnel is the focus of this Objective. Responders should have received Awareness Level Hazardous Materials training which teaches them how to recognize the presence of chemicals. Personnel with Operations Level training will determine what physical and health hazards are associated with the released materials. Responders will show how they use this information to develop an action plan and safely implement protective actions.

B Discussing the Points of Review

1. *Did response personnel safely approach the incident scene?*

When initially notified of a chemical release, personnel must make their approach safely and avoid pulling up next to the incident. Typically, approach is uphill and upwind, or as identified in local procedures and/or guidelines. If the initial call does not include the mention of hazardous materials, personnel need to recognize the hazards *and* move to a safe location.

2. *Were proper steps taken to safely obtain information about the material(s) involved before committing resources and beginning response operations?*

Once on-scene, First Responders need to identify the scope and nature of the hazards involved. This should include identifying/gathering the following information:

- Type of container or package involved
- Extent of damage to the container
- Use placards or labels to identify materials
- Physical state of materials (gas, liquid, solid/powder)
- Quantity of materials being released or likely to be released
- Materials involved or exposed to other hazards (fire, other chemicals)
- Shipping Papers, Manifests, Bills of Lading, Waybills, etc.

3. *Did personnel consult proper technical guidance/resources to obtain relevant information about the hazards involved?*

Response personnel are initially trained in and need to show their ability to use USDOT's North American Emergency Response Guidebook (NAERG). However, the NAERG provides only initial guidance and should be supplemented by more technical guidance. This technical assistance can come from any number of sources such as technology-based programs (i.e. Cameo), shipping papers, SDS, pre-planned hazard analyses, chemical handbooks (i.e. NIOSH pocket guide, or chemical specialists (i.e. Chemtrec). Assistance can also come directly from the spiller or company that uses the material, or from the local medical facility and/or health department.

4. *Did personnel identify the potential movement and impact posed by the released materials on-site and to adjacent areas?*

Movement of the material and its physical/health hazards will dictate what impact is posed.

If the material is a gas or gives off a gas as it evaporates, the gas may be toxic or may displace oxygen. It might be flammable or explosive. Responders should note how far a gas may move downwind and determine what locations may be at risk. Solids or liquids may not travel far but can pose an absorption and ingestion hazard if they come in direct contact with personnel. Responders should also consider the impact to the environment such as how it may contaminate nearby water sources or threaten animal and vegetation life.

5. *Did personnel use the assessment to identify proper response actions to be taken?*

Before committing any resource or taking a response action, responders must determine what actions they can safely implement. The assessment should identify the most prudent means of managing the release *based upon training and equipment*. Responders must identify what resources (such as PPE, absorbents, and neutralizing materials) are necessary to implement the necessary response actions. This may include such decisions as determining what can/will be done until the identified resources arrive on scene. Will the response actions be offensive or defensive in nature? Offensive actions might require that a remote valve be accessed and turned off. Conversely, it might be determined that the safest course of action is to let the material dissipate or burn off. Defensive actions might require the use of Operations-Level Responders who are trained to control the spread of the material (dikes, vapor suppression, etc.). Technician Level Responders are trained to implement defensive actions aimed at stopping the release of the material (plugs, patches, repairing valves, over-packing a drum, etc.). Review NFPA's 471, 472, and 473 for more guidance on response actions and associated training competencies.

6. *Was consideration given to the development of protective actions for the public and the environment based on incident assessment?*

The likely protective actions include evacuation, or sheltering-in-place, or a combination of the two. Responders need to consider the benefits and limitations of each method in order to identify which technique will best minimize the hazard's effect. A toxic cloud may disperse before an evacuation can be organized, or it may linger and thus expose each person as they evacuate. Sheltering-in-place may have people trapped in their homes with no heat or air conditioning thus creating other medical emergencies.

7. *Was the incident assessment transmitted in a timely manner to other response personnel and support groups?*

Personnel on-site and off-site need to know what hazards are present. On-site, the IC or Safety Officer must brief personnel on the signs of exposure, the wearing of protective equipment, and the short and long-term health effects. Off-site, medical facilities will need this information so they can protect their personnel and equipment. Shelter Managers will also need this information to screen evacuees for signs of exposure and to prevent contamination of the shelter.

8. *Were proper strategies/tactics used to continuously assess and monitor the hazards?*

The hazards posed will change as the incident progresses. As such, the IC or Safety Officer must show how they will identify when/if significant changes occur in the hazards posed. Personnel with Operations-level training should be able to demonstrate the effectiveness of the defensive actions in-place and whether or not it is more prudent to withdraw further from the scene. HM Technicians, if available, should demonstrate the ability to estimate the likely size of the endangered area using computer modeling or monitoring equipment. They should also be

able to predict the likely behavior of the materials when they mix. If local assets cannot fully monitor the situation, they should be able to consult with technical experts such as those provided by the spiller, via OEPA's OSC, or other specialists. This assistance should be pre-planned for the hazards in the community. Meters can be utilized to continually assess the incident.

9. *Were changes in the incident assessment transmitted in a timely manner to other response personnel and support groups?*

As changes are identified, groups on and off-site supporting the response must be briefed. The changes may be either an escalation or de-escalation of the hazard, or may be a change in the protective actions. Most often, off-site entities (medical facilities, traffic and access control points, shelters) are not kept informed of the changes.

10. *Were the actions taken based on existing plans and/or operating procedures?*

By law, LEPC plans shall contain the methods and procedures to implement this process. Also, some response agencies may have outlined this process in their own SOPs.

C Exercise Design and Control Issues

To effectively test this Objective, the scenario must be clearly presented to the Players. The scene must resemble an actual incident as closely as possible, otherwise they may respond to the incident differently than intended. There should be sufficient "clues" present to determine what hazardous materials are involved and to fully analyze the situation. Typically, these clues should be presented or accessible based on the responder's training and equipment capabilities. Do not hide or make clues difficult to discover unless the ultimate goal is to challenge the local responders or to have them incorporate specialists into the response mechanism.

For Tabletop exercises, the exercise Controller will need to "verbally" setup the scene as it would typically be seen when the first person arrives. The Controller will then input or share "clues" about the scenario as Players make their inquiries. Players should not have to make assumptions about the scene setup. Players should be told in advance to bring any reference materials that they normally would consult during a response. If computers or chemical reference books are used, they should be brought and used during this exercise. If the Players would call upon an outside specialist/agency, that specialist should also be invited as a Player in the exercise. If they cannot participate, the Controller will have to be ready to input the information that the specialist would have provided. The key here is that the Controller should not "give away" the scenario until sufficient time and effort is expended by the Players in analyzing the situation. The Controller must also avoid walking Players through the assessment.

For Functional and Full-Scale exercises, the scene will need life-like props that fully simulate the release (i.e. smoke, flowing liquids, shipping papers, placards, etc.). The scene should look as real as possible. Controllers should be in-place and prepared to clarify what the incident scene is in case responders are confused by its setup. For example, the green dye in the pond is actually an oily sheen, or the fire truck with a placard is really a 30,000 gallon tanker, or there is a smell of almonds in the air. Controllers will also need to provide feedback on equipment readings or the effectiveness of response actions. For example, a Lower Explosive Limit (LEL) meter shows .2 parts-per-million (ppm) at 100 yards and 20 ppm at 50 yards, or a "damaged" valve will not close even though it does.

Ultimately, there should be enough Controllers to monitor the exercise and input clues where needed. Thus, this Objective may need a Controller to follow entry personnel into the hot zone while another sits with the research team, and the Lead Controller stays within the Incident Command Post. The Controllers will need to be ready to act as simulated agencies (non-participating but would likely participate in response to an actual incident) by providing input messages.

D Evaluation Needs and Issues

Evaluators for this Objective need to have a good Hazmat response background. They should be trained to at least the Operations level and preferably to the Technician level. These Evaluators should typically come from the Fire service or a Hazmat Team.

During the response, the Evaluator should observe the on-scene arrival of First Responders. The Evaluator should join those responders and listen-in to their evaluation of the scene. To assist an Evaluator, the Exercise Design Team may wish to furnish the Evaluator a radio that can monitor the information coordination process between the ICS organizational elements (sections, branches, groups, divisions, etc.). Throughout, the Evaluator should float between the Command Post, the hot zone with the entry team, and the hazmat operations area to effectively see how the assessment is made and coordinated. If the scene is complicated, it would be beneficial to use two Evaluators for this Objective (i.e. one in the hot/warm zones and the other in operations or the Command Post).

Also, this Objective should not be evaluated from within an EOC. An EOC may support the assessment process, but this Objective must be accomplished by those on scene.

This Objective is well suited to be evaluated along with Objectives #3, 7, or 8.