Spill Response
Clean It Up or Call in HazMat
By Karen D. Hamel

News reports paint a dramatic picture of spill response: millions of gallons of water contaminated, teams of responders in Level-A HazMat suits, government officials gathered near large response vehicles, miles of caution tape and, of course, sound bites from affected citizens describing how horrible it has been.

Large spills can make sensational news, but most spills are not big enough to be newsworthy. Most spills are small and can occur daily in many facilities. They are inconvenient, but most are not emergencies. Organizations can facilitate safe, efficient cleanups by recognizing when and where spills can happen, and incorporating incidental spill response into standard operating procedures (SOPs).

Emergency or Incidental?
According to the Chemical Abstract Service (CAS) registry, which collects, organizes and shares chemical information, more than 108 million chemical substances have been registered; some are hazardous and some are not. When hazardous chemicals are used in workplaces, much time and effort is spent understanding those chemicals so that precautions can be taken to prevent harm to workers, the environment and the community.

But not all chemicals present the same hazards. Some may be flammable while others are corrosive, reactive or toxic. As a result, it can be difficult to establish one set of spill response rules that applies to every chemical in a facility.

For example, a relatively small spill of mercury or a chlorinated solvent will necessitate evacuation from an area. But, several thousand gallons of lubricating oil that remain contained in a secondary containment area may still allow production to run close to uninterrupted while the area is cleaned.

Because of similar scenarios, neither OSHA nor EPA relies solely on a spill’s volume to determine the spill’s classification. However, OSHA groups spills into two categories: emergency and incidental. EPA also specifies reporting requirements for spills to the environment that exceed established threshold volumes.

Emergency Spills
OSHA’s Hazardous Waste Operations and Emergency Response (HazWOPER) standard outlines training and other safety requirements for employees who will be involved with emergency spill response. The standard mandates various levels of initial training—from 8 to 40 hours—as well as annual refresher training to help ensure that employees can work as safely as possible in hazardous conditions.

Each potential spill risk should be analyzed to help determine the safety measures that will provide the best protection.

For the HazWOPER standard to be applicable in a workplace, spills must meet the definition of an emergency. Emergencies include conditions that may:
- pose immediately dangerous to life and health conditions;
- present a fire or explosion risk;
- create an oxygen-deficient atmosphere;
- cause employees to be exposed to unsafe quantities of a toxic substance;
- be life-threatening or likely to cause injury or illness;
- necessitate evacuation from the spill area.

The rule specifically states that if no potential for safety or health hazards occurs or if the release can be controlled by employees in the immediate area or by maintenance personnel, it is not an emergency [29 CFR 1910.120(a)(3)].

For facilities with a wide variety or large quantities of highly hazardous chemicals and limited access to community-based HazMat team resources, training and maintaining an emergency spill response team may make sense. For facilities with lower risks, this can be cost and time prohibitive.

Incidental Spills
Most spills in fixed facilities are incidental, which means that they do not fall within the scope of the HazWOPER standard and that facilities can incorporate spill response training into other safety training, such as HazCom or process safety. This also frees the facility from the responsibility of the timed initial training sessions required for emergency responders.

Although incidental spills are often small, this is not a hard rule. It is possible for a spill to be more than 200 gallons and still be considered incidental, especially if it does not present immediate harm to employees, the environment or the surrounding community. Yet, it is also possible for a spill of less than 1 gallon to be an emergency.

OSHA states:
The quantity of product spilled does not by itself determine if an incidental spill has occurred. Several variables, including the volume of the spill, must be considered in evaluating the hazard of the release to employees. Examples of other variables include the type of material spilled and the location of the spill.

Knowing the health hazards of each chemical that is stored and used on-site is perhaps the most important part of considering whether a spill could present an emergency situation. Review chemical inventories and safety data sheets to help determine both the volumes of chemicals stored on-site as well as their hazardous properties. Risk assessments performed on a chemical or process can also help identify the health risk and how big a spill can be before it becomes an emergency.

Properly assessing a spill’s potential also includes knowing where a spill might occur. If the spill may happen in a confined space or an explosion-rated area, it may quickly escalate from incidental to emergency, regardless of how much has spilled. Understanding the hazards associated with different areas of a facility provides valuable perspective to this determination.

Because volume alone does not determine whether a spill is incidental or an emergency, it may take some time to predetermine the guidelines for which spills can be handled safely as incidental and which must be handled by trained emergency spill responders. For example, consider the training that employees may already have. Some facilities take an everything-is-an-emergency approach and train all employees to activate an alarm and evacuate for all spills. This is an option, but it disrupts...
operations and can be time consuming and costly, especially if emergency spill response services are contracted through an outside organization.

**Spill Response & SOPs**

When employees understand the chemical hazards in their facility and have been taught what constitutes a spill emergency, they should be able to quickly assess a spill situation and recognize when a spill is beyond their ability to handle. Providing clear parameters during training facilitates this.

For some facilities, volume may be a key factor. For others, it may be process or location based (e.g., spills in the warehouse are incidental, spills in the bulk chemical storage area are emergencies). Others may base it on chemical properties. It may even be a combination of these, as no single answer applies to every situation.

Similar to chemicals and processes, each potential spill risk should be analyzed to help determine the safety measures that will provide the best protection. These measures will form the basis for training and the incorporation of incidental spill response into SOPs. Although no two spills are alike, employees can learn five basic incidental spill response steps that are applicable in all spill situations.

**Step 1: Determine the Scope**

Because most spills are incidental, use potential scenarios during training to help employees become comfortable with the idea of handling these spills. Potential examples include leaks from an overfilled container, a small can of hydraulic oil that gets knocked off the shelf, a blown hydraulic line or a 55-gallon drum that leaks into a secondary containment area.

Training should also cover criteria used to define what constitutes a spill emergency (e.g., volume, location, type of chemical). Employees should be able to easily determine whether a spill meets the definition of incidental.

Employees should understand that gray area exists when it comes to assessing spills. If they are not comfortable cleaning up the spill or if it is not safe to do so, they should follow the facility’s procedures for an emergency spill.

**Step 2: Safety First**

After it has been determined that the spill is incidental, employees must have the appropriate PPE before cleaning up the spill. It is possible that they may already be wearing the appropriate items.

When additional PPE is needed for a spill response, train workers how to don and doff it, and stock appropriate quantities and sizes. If there is a need to stock respirators or high levels of chemical-resistant suits that will only be used for spill response, spills may no longer meet the definition of incidental.

**Step 3: Inform & Block**

In the event of a spill, an employee should inform other employees and supervisors. If maintenance staff members will be involved in the cleanup process, this is a good time to call them. Block aisles in the area surrounding the spill. This limits foot, cart and forklift traffic that could spread the spill or cause a slip- and- fall injury.

**Step 4: Use Appropriate Cleanup Tools**

For small spills, cleanup may only require a couple of wipes or absorbent mats. For others, a vacuum or neutralizers may be the most appropriate solution. Squeegees can also be used to direct the spill to a holding tank or sump.

Determine the method(s) that work best for the facility and for the level of training that employees have. The most expensive solution may not always be the best. Gather employee input to determine what tools and equipment they are comfortable using and incorporate these into training.

**Step 5: Finish**

After the spill has been cleaned up, properly bag, containerize or otherwise handle spent spill response materials. Dispose of anything that is not reusable. Wash the floor and clean up any tools or equipment that were used during the response. Restock all items so that they are available when needed again and remove any cones or barricades that may have been used to block aisles.

**Stocking Spill-Response Supplies**

Incorporating incidental spill response into SOPs limits nonvalue-added downtime. But, to be truly effective, spill-response supplies must be stocked and available for immediate use. Locking supplies in a closet that can only be opened by a supervisor or requiring employees to go to a remote stockroom to retrieve the items is counterproductive. It also decreases the likelihood that the spill will actually be cleaned up, which increases the potential for a slip- and- fall injury.

Stock spill-response kits where liquids are stored, handled and transferred. Also, consider any areas where spills have occurred. Loading docks, fluid-dispensing and waste collection areas, production lines, warehouses and chemical storage sheds are all places to stock spill-response supplies. Building entrances, cafeterias and break rooms are also good places to stock supplies because if employees are trained to recognize and clean up small spills, they can use these skills to quickly clean up food spills, or rain and snow in entranceways.

Unless spills are an everyday occurrence, it might be easy to forget where response supplies are located. Make them visible by storing them in brightly colored containers or use signs and floor markings to note their location.

Being prepared for incidental spill response does not remove a facility’s obligation to be prepared for emergency or worst-case scenario spills. However, providing tools and training employees on incidental spills increases their spill situation awareness.

In the case of incidental spills, training empowers employees to take action. In some cases, this awareness can help them prevent an incidental spill from becoming an emergency, or help them recognize that a situation is beyond their control and to notify emergency responders.

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