Eye on Safety

Inside this issue:

National Institutes of Health
Office of Research Services
Division of Occupational Health and Safety

Providing a safe and healthy environment for employees, patients and visitors.

"Safe science and good science go hand-in-hand."

The articles in this Newsletter are intended to provide general summary information to the National Institutes of Health (NIH) community. They are not intended to take the place of either the written law or regulations. It is not NIH's intention to provide specific advice to readers of this Newsletter, but rather general information to help better understand how to prevent or reduce workplace injuries and illnesses. Reference in this Newsletter to any specific commercial products, process, service, manufacturer, or company does not constitute its endorsement or recommendation by the U.S. Government or NIH. This is not an NIH publication.

Know what to do if there is a chemical release

You must be ready if the release of a hazardous substance in your facility could require an emergency response. OSHA's requirements for emergency response are found at 1910.120(q) in the standard on Hazardous Waste Operations and Emergency Response (HAZWOPER).

If your employees are to respond to the release, you'll need to have a written emergency response plan and conduct employee training.

However, if you'll evacuate all employees from the danger area and if you will not allow any employees to assist in the emergency response efforts, you're allowed to follow an emergency action plan (1910.38) instead of an emergency response plan. To meet HAZWOPER requirements, this emergency action plan is to include provisions to notify an emergency response team to respond to the emergency. If you take this option, it's a good practice to make advance arrangements with the emergency response team you plan to call.

The need for organized emergency response efforts

One reason people are seriously injured or killed by hazardous substances releases is that they enter the emergency situation without adequate training and equipment. Following the provisions in OSHA's HAZWOPER standard helps ensure a safe, organized response.

Under HAZWOPER, employers must develop an emergency response plan if employees could be exposed to hazards during emergency response efforts. Training is a big part of the emergency response plan, and the HAZWOPER rule recognizes five levels of training.

Duties of the first responder at the awareness level

First responders at the awareness level are those individuals who are likely to witness or discover a hazardous substance release. Their job is to initiate the emergency response by notifying the appropriate authorities. They take no further response action beyond notifying the authorities of the release. They remain in a safe area.

OSHA does not set a minimum number of initial training hours for first responders at the awareness level

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Know what to do if there is a chemical release *(continued from page 1)*

(courses could run four or more hours), but the trainees must be able to:

- Understand what hazardous substances are and the risks associated with them;
- Understand the potential outcomes of an emergency involving hazardous substances;
- Recognize the presence of hazardous substances in an emergency;
- Identify the hazardous substances, if possible;
- Understand the role of the of the first responder awareness individual in the employer's emergency response plan, including site security and control and the use of the U.S. Department of Transportation's Emergency Response Guidebook; and
- Realize the need for additional resources and make appropriate notifications.

Under OSHA's hazard communication standard, employees who may be exposed to hazardous chemicals need training in:

- The hazards of chemicals in the work area;
- Methods to detect a hazardous chemical;
- Measures employees can take to protect themselves;
- The details of the employer's hazard communication program; and
- Specific emergency procedures.

All HAZWOPER emergency responders (including those at the awareness level) need refresher training (or they must demonstrate their competency) at least annually.

Duties of the first responder at the operations level

First responders at the operations level do not try to stop the release. They respond in a defensive manner, acting at a safe distance. They may place sorbents, shut off valves outside of the danger area, or activate emergency control systems. They must have eight hours of initial training. They must know:

- How to perform basic control, containment, and/or confinement operations within their limited capabilities;
- How to select and use proper PPE; and
- How to implement basic decontamination procedures.

The role of hazardous materials specialists

Hazardous materials specialists provide substance-specific knowledge. These specialists need 24 hours of initial training. A hazardous materials specialist must know:

- Chemical, toxicological, and radiological terminology and behavior;
- How to use instruments to classify, identify, and verify materials; and
- Detailed hazard and risk assessment techniques.

The responsibilities of hazardous materials technicians

Hazardous materials technicians respond to stop the release. They must have 24 hours of initial training, and they must demonstrate certain competencies including:

- How to implement the employer's emergency response plan;
- How to select and use proper personal protective equipment (PPE); and
- How to implement decontamination procedures.

The need for an on-scene incident commander

A successful response effort needs someone to be in command. The on-scene incident commander uses the incident command system to control and organize emergency response efforts. The incident commander must be competent in managing emergencies but does not necessarily have extensive technical knowledge.

Your facility's designated on-scene incident commander may be in charge initially; but, as part of the incident command system, outside authorities (fire chief, police official, etc.) may take control according to a previously established line of authority as response efforts progress.

All employees are to follow the directions of the on-scene incident commander.

If employees are not to take active roles in the emergency response efforts, they are to evacuate according to the facility's emergency action plan. A qualified emergency response team will be called in to respond to the release. In this situation, some employees will need to be able to recognize an emergency release and call for help — this skill set is learned during training as a first responder at the awareness level.

If employees are organized to respond to a release of hazardous substances that requires an emergency response, this HAZMAT team needs training and equipment so they can perform the duties of all five of the described levels of training.

In any case, pre-planning emergency response efforts to consider each potential emergency release scenario helps keep employees safe.

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Safety focus: Electrical safety at home

Electrical exposures can result in fire, shocks, burns, and electrocutions. In the workplace, BLS reports 2,480 serious injuries and 134 fatalities due to exposure to electricity in 2015. But, electricity is just as dangerous at home.

The U.S. Fire Administration indicates there were 23,900 residential building fires caused by electrical malfunction in 2014. These fires resulted in 325 deaths and about 900 injuries. About half of residential building fires involve lighting equipment or home electrical wiring. Home electrical fire deaths peak between midnight and 6 a.m., and peak months for electrical fire deaths are December through March.

Encourage your employees to inspect their electrical equipment and wiring at home. They should:

- Always have a qualified electrician do electrical work!
- Ensure circuits are properly labeled in the breaker panel.
- Keep a clear area around the breaker panel so there is easy access to it.
- Ensure outlets near water sources (sinks, showers, bathtubs, etc.) are protected with ground-fault circuit-interrupters.
- Replace damaged outlet covers.
- Insert plugs fully into sockets.
- Never force a three-prong cord into a two-slot outlet.
- Avoid putting cords where they can be damaged or pinched, such as under a carpet or rug, or through a doorway.
- Replace cracked or damaged electrical cords. Don't try to repair them.
- When unplugging a cord, pull on the cord at the outlet rather than pulling on the cord itself.
- Stop using a cord, outlet, or switch that becomes hot to the touch. A cord is probably the wrong gauge wire for the load. A hot outlet or switch indicates a problem in the wiring. Heat build-up also causes discolored outlet covers or switches.
- Stop using electrical equipment that makes a buzzing or sizzling sound or that sparks.
- Never overload extension cords or wall outlets. If they keep tripping a breaker, the circuit is probably overloaded.
- Ensure that any appliances in your home have been approved by a reputable consumer laboratory, such as UL (Underwriters Laboratories).
- Plug high-power-load appliances directly into wall outlets.
- Unplug small appliances when not in use.
- Use power strips only for low-wattage appliances such as computer equipment.
- Ensure power strips have internal overload protection.
- Do not overload outlets with multiple adaptors or power strips; instead, relocate electrical cords.
- Use extension cords for temporary purposes only.
- Keep lamps, light fixtures, and light bulbs away from anything that can burn like curtains, toys, or clothing.
- Use light bulbs that match the recommended wattage on the lamp or fixture.
- Keep lamp shades and other lighting covers in place to protect the bulb from breakage.
- Do not operate any electrical appliance with wet hands or while standing in water.

You use electricity everyday, but you still must use precautions. Carefully observe all safety measures when using electricity to keep yourself and your family safe.

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The purpose of this newsletter is to provide a forum for the dissemination of health and safety information. It is intended to enhance communication to National Institutes of Health (NIH) employees, raise awareness of current safety policies and procedures, and provide guidance on relevant issues. It is provided as a service by the NIH, Office of Research Services, Division of Occupational Health and Safety. This is not an NIH publication.

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From brains to brawn, exercise enhances your life

"While we are considering when we ought to begin, it is often too late to act."

Quintillian
(AD 35 – AD 96)

Exercise provides more than just physical benefits.

Looking for a reason to get off the couch and start moving? You'll benefit from being active, no matter your age, size, or shape. Here are some ways exercise gives your life a boost:

Weight control: When you're active, you burn more calories, and this helps you reach and stay at a healthy weight.

A great feeling: Your brain releases chemicals during exercise that can lift your mood and make you more relaxed. It can also help prevent depression. When you are hiking through the woods or biking with friends, you may be enjoying yourself so much that you don't realize you're exercising.

Disease prevention: By exercising regularly, you reduce your risk for heart disease, type 2 diabetes, stroke, and some cancers. In addition, you can lower your blood pressure and improve cholesterol levels.

A brain boost: A recent study found a link between higher levels of physical activity and brain health In older adults. The study, published in the Journal of Gerontology, found that older adults who had a more active lifestyle had more gray matter in the brain (a measure of brain health) in the areas controlling muscle movement, thinking, feeling, memory, and speech. Activity Included everyday chores, such as house cleaning, gardening, or walking the dog, as well as structured exercise.

Less stiffness: Activity and exercise can help decrease pain from arthritis, which affects the joints and the tissues surrounding them. The Centers for Disease Control and Prevention notes that exercise can also improve your ability to do everyday tasks. Walking, biking, swimming, and water activities are good ways to ease the pain.

More strength: Regular exercise protects bones, joints, and muscles, and this is especially important as a person gets older. Bone density lessens with age, but this loss can be slowed by moderate aerobic, muscle-strengthening, and bone-strengthening activities.

By the numbers

Federal guidelines recommend that adults perform at least **150 minutes** per week of moderate aerobic activity or **75 minutes** a week of vigorous activity. Adults should also perform muscle-strengthening activities involving all muscle groups on **two or more** days of the week.

- **51.7** percent of adults meet aerobic activity guidelines.
- **21.7** of adults meet both aerobic and muscle-strengthening activity guidelines.

Source: National Center for Health Statistics

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