Emergency Equipment

INCIDENT

STILLWATER, N.J. – Two people are dead after a fatal fire and accident in Sussex County.

The Star-Ledger is reporting that the driver of an ambulance has died after his vehicle left the roadway and crashed while transporting a burn victim from the house fire to the hospital. The patient and other crew members survived the crash.

Authorities report that a fire on Potters Road in Stillwater killed one person and injured another. A New Jersey State Police spokesman reported that the injured person was being transported when the driver of the ambulance suffered a “medical issue”.

The patient was transferred to another ambulance and taken to the hospital. The driver of the ambulance was pronounced dead on the scene.

NEED TO KNOW

Unexpected emergencies occur every day in many facilities, including laboratories, offices, plants, manufacturing, construction sites and residential buildings. If you don’t know what to do during an emergency the odds increase that you or others around you will be injured or killed.

- Emergencies include severe weather, such as heavy wind, flooding, tornados, or hurricanes
- Utility outages
- Fires
- Explosions
- Widespread infection
- Hazardous materials
- Earthquakes
- Workplace violence
- Terrorism

Special equipment for emergencies

Your employees may need personal protective equipment to evacuate during an emergency. Personal protective equipment must be based on the potential hazards in the workplace. Assess your workplace to determine potential hazards and the appropriate controls and protective equipment for those hazards. Personal protective equipment may include items such as the following:

- Safety glasses, goggles, or face shields for eye protection;
- Hard hats and safety shoes for head and foot protection;
- Proper respirators;
- Chemical suits, gloves, hoods, and boots for body protection from chemicals;
- Special body protection for abnormal environmental conditions such as extreme temperatures; and
- Any other special equipment or warning devices necessary for hazards unique to your worksite.

Choose the appropriate respirators and other equipment

Consult with health and safety professionals before making any purchases. Respirators selected should be appropriate to the hazards in your workplace, meet OSHA standards criteria, and be certified by the National Institute for Occupational Safety and Health.

Respiratory protection may be necessary if your employees must pass through toxic atmospheres of dust, mists, gases, or vapors, or through oxygen-deficient areas while evacuating. There are four basic categories of respirators for use in different conditions. All respirators must be NIOSH-certified under the current 29 CFR 1910.134.

Test your emergency equipment frequently to ensure it’s ready when someone needs it.

Installation and testing of emergency drenching equipment according to the American National Standards Institute (ANSI) requirements can offer workers peace of mind while on the job. Yet, installing the right emergency solutions according to the

ANSI standard does not guarantee workers will use the fixtures in an emergency.

Six critical but often overlooked steps â€” training, accessibility, visibility, functionality, privacy and signaling for assistance â€” help ensure drench showers and eyewash units are ready to use and will be operated by injured workers (and those trying to help them) when necessary.

BUSINESS / REGULATIONS

Emergency equipment such as rescue rings, ropes, extracting boards, and stretchers used to extract a diver from the water must be directly accessible. Oxygen must be on hand and in sufficient quantities for use until emergency medical personnel arrive. For unconscious divers, a forced ventilation system is used. This system must be equipped with an overpressure relief valve to avoid damage to the lungs of the victim when it is used. As with all oxygen systems, every related precautionary measure must be observed, such as no contact with grease or bare electrical contacts.

For the protection of support personnel, the use of defibrillators is not recommended in wet environments. If required to treat a cardiac arrest, the subject must be transported to a dry area, where it is safe to use the defibrillator.

In support of a diving operation, a hyperbaric chamber must be accessible within a short period, such as 1 h, from the time and location of any potential incidents. Should no hyperbaric chamber be accessible directly on-site, it is necessary to study and practice the transport of an injured subject to the nearest operating chamber. In addition, regular audits of these chambers must be conducted to ensure their availability during an emergency.

In some cases, transportation by helicopter could be required. If so, a dedicated landing zone free of obstacles must be available adjacent to the location of the diving activity, and personnel must be trained to interact properly with the helicopter crew. In

case of decompression sickness, the helicopter must not fly higher than 300 m (1000 ft) above ground level.

Adequate emergency equipment and resources, communication systems, documentation (such as procedures, checklists, telephone numbers and manuals) should be available where needed to properly initiate and support the emergency response actions described in Section 23.11.4.

Instruments, tools, equipment, documentation and communication systems to be used in emergencies should be appropriate and maintained in good operating condition, in such a manner that they are unlikely to be made unavailable by the postulated emergency and environmental conditions. Equipment, communications, vehicles, etc., should be regularly checked and tested.

All employers are obligated to ensure staff are trained in workplace emergency procedures. This may include what to do in case of a fire, earthquake, or other emergency; identifying locations of emergency exits; and processes to follow to evacuate the building in the case of an emergency. These procedures are site specific and should be a part of the training for all new employees. In addition, regular drills or reviews of procedures are important to ensure that if an actual emergency occurs, everyone is able to react accordingly and safely.

Orientation to any new job site, even if temporary, should always include the following information:

- Location of emergency exits
- Location of first aid supplies or the procedures to call for an attendant
- Location of fire extinguishers
- Evacuation procedures and muster stations
- Any hazards present on the site

First Aid Procedures

Providing access to first aid supplies or attendants is a requirement of employers under the OHS Regulation, but the

required vary according to the size of the employer and many other factors. For example, in some cases it is required that a designated first aid attendant be on duty, while in others it is enough to provide a first aid kit stocked with a prescribed list of supplies. Many industrial settings and B.C. training institutions are equipped with a first aid station with a trained attendant. The person who staffs that station is able to perform a wide variety of services from bandaging minor cuts to stopping major bleeding and splinting broken bones.

All workers should know where the first aid station is, who staffs it, and what services are available. If you sustain an injury, no matter how minor, ensure that the incident is reported in the first aid station log. Minor irritations often develop into major problems, so report all injuries promptly.

Emergency Wash Station or Shower Locations

There may be times when you are working with acids or hazardous substances such as cleaning solutions which may burn your flesh or splash into your eyes. If you accidentally splash or spill a corrosive substance on your skin, you will want to wash the affected area very quickly with large amounts of water to dilute the acid and minimize burning. It is therefore necessary that you be aware of the location of your emergency eyewash stations, sinks, or showers throughout your work site.

Fire Safety Procedures and Regulations

Components that produce fire

Before a fire can occur, these three components must be present:

- Fuel (a combustible material such as wood, gasoline, paper, or cloth)
- Heat (sufficient to raise the fuel to its ignition temperature)
- Oxygen, usually in the form of air (to sustain combustion)

When these three components combine, as shown in the fire triangle

(Figure 14), the result is rapid combustion (fire). Keeping these three components separated will prevent a fire from occurring. An existing fire can be extinguished by removing any one of the three components:

- Remove the fuel (combustible material) from the vicinity of the fire. For example, if you shut off the valve of a gas main, the result will be starvation.
- Remove the heat. For example, by applying water, the result will be cooling.
- Remove the oxygen. For example, if you cover the fire with a lid, a wet blanket, or some sand, or you use a carbon dioxide, foam, or dry chemical extinguisher, the result is smothering.

Remember, keeping these three components separated will prevent a fire from occurring. Likewise, an existing fire can be extinguished by removing any one of the three components.

STATISTICS

There were 5,250 fatal work injuries recorded in the United States in 2018, a 2 percent increase from the 5,147 in 2017, the U.S. Bureau of Labor Statistics reported today. (See chart 1 and table 1.) The fatal work injury rate remained unchanged at 3.5 per 100,000 full-time equivalent (FTE) workers. These data are from the Census of Fatal Occupational Injuries (CFOI).

Transportation incidents remained the most frequent type of fatal event at 2,080, accounting for 40 percent of all work-related fatalities.

Incidents involving contact with objects and equipment increased 13 percent (from 695 to 786), driven by a 39 percent increase in workers caught in running equipment or machinery and a 17 percent increase in workers struck by falling objects or equipment.

Unintentional overdoses due to nonmedical use of drugs or alcohol while at work increased 12 percent from 272 to 305.

Violence and other injuries by persons or animals increased 3

percent in 2018, due to an 11 percent increase in work-related suicides from 275 to 304.

Fatal falls, slips, and trips decreased 11 percent to 791, after reaching a series high of 887 in 2017. This decline was due to a 14 percent drop in falls to a lower level (713 to 615), the lowest total since 2013.

RECOMMENDATION

Six critical steps to take to help and assist injured workers and those trying to help them come with the following recommendations:

1. **Train on proper use**

If workers cannot quickly find and operate the nearest emergency equipment, a simple injury can become severe or, even worse, deadly. For example, if not properly trained on emergency protocol, a worker with a serious eye contamination may run to the restroom to rinse out the affected eye. Unfortunately, in the time it could take to reach the nearest restroom, it may be too late and the result could be permanent eye damage. Also, the flow of water from standard restroom fixtures is insufficient to adequately wash contaminants from the injured worker.

This unfortunate scenario is avoidable. First, have a solid emergency response plan in place. Clearly define the different types of hazards on the jobsite and indicate the actions to be taken in the event of an emergency. Next, all employees must be trained on what constitutes an emergency and whether a drench shower or eyewash unit is most appropriate for a particular situation. Most importantly, each person should have an opportunity to test the equipment so he or she feels comfortable activating it.

2. **Install within reach**

To ensure equipment is used in an emergency, it must be located near potential hazards. The ANSI Z358.1-2004 emergency standard requires emergency equipment be placed within 10 seconds reach of any hazard. As a guideline for placement, an average person can

cover about 55 feet in 10 seconds.

To minimize injuries, remove all clutter or obstacles between the hazard and emergency equipment. In addition, fixtures should be on the same level as the hazard. Remember, physically disabled or injured workers cannot go up or down stairs to reach a fixture. For hazards involving a strong caustic or acid, the drench shower or eyewash should be placed immediately adjacent to the hazard.

In remote locations without plumbed emergency equipment, such as construction sites, portable units should be supplied. Gravity-fed eyewashes are a good solution â€" specify units that are designed for easy transportation and that can be quickly refilled.

3. **Increase visibility**

Location is important, but the unit must also be placed in a well-lighted area and have a visible sign for quick identification. Although no specific color is designated for emergency drench showers or eyewashes in either ANSI Z358.1-2004 or the ANSI Z535.1-2002 American National Standard for Safety Color Code, choose a bright yellow color easily found in an emergency. Yellow is the most visible color and is the first color the human eye notices, research suggests.

4. **Keep clean and in working order**

For optimal performance during an eye emergency, eyewash units must flush contaminants without exposing the infected eye to dust or other contaminants. One of the easiest ways to be sure equipment is in good working order is to conduct the ANSI required weekly and annual testing procedures. Routine testing provides an opportunity to inspect units for corrosion and remove any debris that could pose a problem.

Eyewash dust covers are beneficial for industrial applications where contaminants fill the air. In some cases, dust covers can be retrofitted to current equipment. The dust cover swings back and out of the way when the push handle is activated.

Bottled eyewashes are a common oversight when it comes to

emergency preparedness. Even if a bottle is sealed, the solution may not be sterile if it’s past the manufacturer’s expiration date. Keep the tops of bottles clean and ready for use.

5. **Protect users’ privacy**

Privacy can be a major factor for a worker choosing not to use an emergency drench shower in an emergency. To be effective, users must disrobe completely to flush contaminants from their skin. In a mixed-gender environment, it is easy to understand why this would be a concern.

Installing privacy curtains around drench showers or combination shower and eyewash units is an easy and effective way to address the privacy issue. High-visibility yellow vinyl laminate privacy curtains that are chemical and mildew resistant are good for industrial applications. A durable stainless-steel curtain rail and mounting brackets can provide strong, corrosion-resistant support.

6. **Sound the alarm**

To ensure emergency equipment is not only used” but used properly in the event of an emergency to assist users in summoning help from others. An alarm system can be triggered as soon as an emergency fixture is activated. Injured persons can continue flushing without the added worry of calling for help. An added benefit of an alarm system is that it deters vandals from tampering with the emergency equipment.

Check with the manufacturer of your emergency fixtures to determine if there are any other accessories or solutions that will help keep the equipment ready to use in case of an emergency. You hope you’ll never need an emergency fixture, but **PROPER TRAINING, ACCESSIBILITY, VISIBILITY, PRIVACY, FUNCTIONALITY AND SIGNALING FOR HELP** can minimize injuries and ensure emergency preparedness.

PREVENTION

Emergency Equipment in modern, diverse, complicated industries and

infrastructures take on many different forms.

Assuming all prudent, steps are taken to ensure Emergency Equipment is available, what is the next most important thing to do??

It comes in a Threefold answer.

Emergency Equipment must be:

1. Properly located.
2. Properly maintained.
3. Staff properly trained in use.

Where should emergency equipment be located?

A Hazard Identification process should be conducted to identify all locations where emergency equipment may be required.

This should include equipment such as:

- Firefighting equipment
- Drench showers and eye-baths where workers are at risk of being in contact with harmful substances (particularly corrosive substances such as acids).
- Spill control equipment

Emergency equipment should be located in easily accessible areas and within a reasonable distance from the source of hazard.

Training

It is essential to train all personnel so that they are thoroughly familiar with the locations of all emergency equipment and the correct methods for using them.

It is also beneficial to ensure that all staff members are familiar with the use and locations of emergency equipment during the induction training process.

Maintenance

To ensure that all emergency equipment is in proper working order,

regular inspections and maintenance must be carried out. This will put your equipment in a state of readiness in the event of an emergency.

Enlist qualified personnel to carry out all inspections in accordance with controlled inspection check sheets.

Be sure to keep full records of inspections and testing of emergency equipment.

Minutes and seconds can seem like an eternity in an emergency situation. To prevent injuries and save lives, quick actions are needed.

TRAINING – MORE PREVENTION

Specific Categories of Emergency Procedures and Equipment Require Training

- Alarms, cautions, and warnings;
- Fire and smoke, including the location of smoke detectors, gas masks, extinguishing equipment, and fire suppressionports, as well as the means for suppressing a fire, e.g., the dump command for purging the atmosphere of an isolated module;
- First aid, e.g., a crew health care system, including methods for cardiopulmonary resuscitation, the stabilized stretcher, intravenous injection doses, etc. (see medical emergencies);
- Potable water collecting and sanitizing equipment, shelter, fire, radio, beacons, etc.;
- Environmental protection against wet or dry, and cold or hot environments such as sea, snow, or desert, including typical garments to be used for each purpose; and
- Protection against wildlife or signalization.

The last and least desirable step once all preventive, corrective, and recovery safety measures have been exhausted, or if time does not allow for a sudden contingency to be controlled is to prepare the crew to cope with emergency cases, i.e., those requiring immediate action to ensure crew survival. Training for emergencies

must be performed regularly and repeatedly, and it must be performed onboard to achieve automatic responses by the crew should an emergency occur.

In all emergency cases, the order of priority for the crew actions is always to:

- Ensure their own survival;
- Take care of the vehicle;
- Safe the systems; and
- Safe the payloadsor science.

Evacuation and Egress

Any evacuation from a space vehicle, regardless of whether this occurs on orbit, or at the launch pad or landing site, is always considered to be a critical operation. It is an emergency mode conducted within a generally hostile environment. For example, the launch pad contains large amounts of explosives, flammable materials, and pyrotechnics, and a landing site is contaminated by toxic gases and trace materials generated by the vehicle propulsion system, or pyrotechnics.