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Hazard Prevention and Control

After hazards are identified, how can they be prevented and controlled?

Continually review the work environment and work practices to control or prevent workplace hazards.

Some ways to prevent and control hazards are:

- Regularly and thoroughly maintain equipment
- Ensure that hazard correction procedures are in place
- Ensure that everyone knows how to use and maintain personal protective equipment
- Make sure that everyone understands and follows safe work procedures
- Ensure that, when needed, there is a medical program tailored to your facility to help prevent workplace hazards and exposures

After detection, all current and potential hazards must be prevented, corrected or controlled. Systems used to prevent and control hazards include:

- Engineering Controls
- Safe Work Practices
- Administrative Controls
- Personal Protective Equipment (PPE)
- Systems to Track Hazard Correction
- Preventive Maintenance Systems
- Emergency Preparation
- Medical Programs

Engineering Controls

The first and best strategy is to control the hazard at its source. Engineering controls do this, unlike other controls that generally focus on the employee exposed to the hazard. The basic concept behind engineering controls is that, to the extent feasible, the work environment and the job itself should be designed to eliminate hazards or reduce exposure to hazards.

Engineering controls can be simple in some cases. They are based on the following principles:

- If feasible, design the facility, equipment, or process to remove the hazard or substitute something that is not hazardous.
- If removal is not feasible, enclose the hazard to prevent exposure in normal operations.
- Where complete enclosure is not feasible, establish barriers or local ventilation to reduce exposure to the hazard in normal operations.

Safe Work Practices

Safe work practices include your company's general workplace rules and other operation-specific rules. For example, even when a hazard is enclosed, exposure can occur when maintenance is necessary. Through established safe work practices, employee exposure to hazards can be further reduced.

Depending on the type of industry and the operations, work practices for specific OSHA standards or to recognized hazards may be required. Some of these specific areas include:

- Respiratory Protection [29 CFR 1910.134].
- Lockout/Tagout [29 CFR 1910.147].
- Confined Space Entry [29 CFR 1910.146].
- Hazard Communication [29 CFR 1910.1200, 29 CFR 1926.59].

Blood borne Pathogens [29 CFR 1910.1030].
- Hearing Conservation [29 CFR 1910.95].
- Laboratory Chemical Hygiene [29 CFR 1910.1450].

This list is not all-inclusive. Refer to the specific OSHA standard for information and guidance on the required elements for these individual programs.

Administrative Controls

While safe work practices can be considered forms of administrative controls, OSHA uses the term administrative controls to mean other measures aimed at reducing employee exposure to hazards. These measures include additional relief workers, exercise breaks and rotation of workers. These types of controls are normally used in conjunction with other controls that more directly prevent or control exposure to the hazard.

Personal Protective Equipment (PPE)

When exposure to hazards cannot be engineered completely out of normal operations or maintenance work, and when safe work practices and other forms of administrative controls cannot provide sufficient additional protection, a supplementary method of control is the use of protective clothing or equipment. This is collectively called personal protective equipment, or PPE. PPE may also be appropriate for controlling hazards while engineering and work practice controls are being installed. For specific OSHA requirements on personal protective equipment, see OSHA's standard, 1910 Subpart I.

PPE Hazard Assessment and Training

The basic element of any management program for PPE should be an in depth evaluation of the equipment needed to protect against the hazards at the workplace. The evaluation should be used to set a standard operating procedure for personnel, then train employees on the protective limitations of the PPE, and on its proper use and maintenance.

Using PPE requires hazard awareness and training on the part of the user. Employees must be aware that the equipment does not eliminate the hazard. If the equipment fails, exposure will occur. To reduce the possibility of failure, equipment must be properly fitted and maintained in a clean and serviceable condition.

Systems to Track Hazard Correction

An essential part of any safety and health system is the correction of hazards that occur despite the overall prevention and control program. For larger sites, documentation is important so that management and employees have a record of the correction.

Many companies use the form that documents the original discovery of a hazard to track its correction. Hazard correction information can be noted on an inspection report next to the hazard description. Employee reports of hazards and reports of accident investigation should provide space for notations about hazard correction.

Frequently, companies will computerize their hazard tracking system which can be as simple as adding a few items to an existing database, such as work order tracking.

Preventive Maintenance Systems

Good preventive maintenance plays a major role in ensuring that hazard controls continue to function effectively. It also keeps new hazards from arising due to equipment malfunction.

Reliable scheduling and documentation of maintenance activity is necessary. The scheduling depends on knowledge of what needs maintenance and how often. The point of preventive maintenance is to get the work done before repairs or replacement is needed. Documentation is not only a good idea, but is a necessity in larger companies. Certain OSHA standards also require that preventive maintenance be done. For example, a preventive maintenance program is required for overhead and gantry cranes, [29 CFR 1910.179].

Emergency Preparation

During emergencies, hazards appear that normally are not found in the workplace. These may be the result of natural causes (floods, tornadoes, etc.), events caused by humans but beyond control (train or plane accidents, terrorist activities, etc.), or within a firm's own systems due to unforeseen circumstances or events.

You must become aware of possible emergencies and plan the best way to control or prevent the hazards they present. Some of the steps in emergency planning include:

- Survey of possible emergencies;
- Planning actions to reduce impact on the workplace;
- Employee information and training;
- Emergency drills as needed.

Medical Programs

A company's medical program is an important part of the safety and health system. It can deliver services that prevent hazards that can cause illness and injury, recognize and treat illness and injury, and limit the severity of work-related injury and illness. The size and complexity of a medical program will depend on many factors, including the:

- Type of processes and materials and the related hazards,
- Type of facilities,
- Number of workers,
- Characteristics of the workforce, and
- Location of each operation and its proximity to a health care facility.

Medical programs consist of everything from a basic first aid and CPR response for sophisticated approaches for the diagnosis and resolution of ergonomic problems. Depending on the size of the site, this may be in-house or through arrangements made with a local medical clinic. Whatever the type of medical program, it is important to use medical specialists with occupational health training. [See OSHA standard 29 CFR 1910.151(b) for first aid requirements. Also, the Blood borne Pathogens Standard, has requirements to protect employees who administer first aid and 29 CFR 1910.1030.]

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