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Worksite Analysis

Do you know all of the potential hazards generally associated with your type of business and your specific working conditions?

If employees are to be protected from workplace hazards, those hazards must be identified. A means of systematically identifying workplace hazards as they occur is needed so that hazards can be eliminated before accidents occur. In effect you are creating a safety net. The greater the number of ways that problems are brought to management's attention, the less likely is it that an accident will occur when one of the systems fails.

Analysis of past accident history

While ultimately you want to focus your prevention efforts prior to the occurrence of an accident, initially an analysis of past accident history is beneficial. This type of analysis will enable you to identify the initial interventions that are needed, e.g., eye protection, lifting programs, etc. It is also important to establish baseline measures so that the effectiveness of changes can be measured.

Identify workplace hazards by:

- Periodic, comprehensive safety, industrial hygiene, and health surveys;
- Analysis of accident records, near miss reporting, and employee reporting of hazards or at-risk behaviors;
- Routine hazard analysis, such as job hazard analysis, process hazard analysis, or phase hazard analysis; and
- Pre-use and change analysis of the potential hazards in new or startup of facilities, equipment, materials, and processes.

Routine inspections

Routine (weekly) safety walkthrough inspections should be conducted by top management, safety and health staff, members of safety committees, etc. These inspections are a good audit of the program and can identify areas that need to be addressed. They also keep your safety efforts visible and everyone's safety awareness up. Employees can be assigned responsibility for conducting daily inspections in specific areas.

Comprehensive surveys

Comprehensive surveys are not the same as inspections. Comprehensive surveys should be performed by people who can bring to your worksite a fresh vision and extensive knowledge of safety, health, or industrial hygiene, i.e., safety professionals, industrial hygienists, ergonomists, etc. Insurance carriers, corporate staffs, private consultants, and the OSHA-funded consultation projects are sources of help in this area.

A formalized mechanism should be developed that encourages the routine reporting of problems. Employees need to be made comfortable with reporting problems without fearing being labeled a whiner or complainer. The organization's values need to not only encourage reporting but must value it. Employees need to understand that not only will they not be harassed for reporting problems, but they will be rewarded for it and will be in trouble for not reporting potential problems. Managers and supervisors, on the other hand, need to be held accountable for adequately addressing concerns. When management fails to do so, appropriate disciplinary measures should be taken. When successful in establishing an effective reporting system, management will have a mechanism that will allow systematic and proactive identification of problems before accidents occur. This will enable you to be in a position to prevent losses. As the safety culture of an organization matures, reporting problems will migrate from accidents and physical hazards to near-misses and at-risk behaviors.

Routine job safety/hazard analysis

Job safety/hazard analysis (JSA) breaks down a job into its component steps. This is best done by jointly analyzing each step in order of occurrence with the effected employee. Next, examine each step to determine the hazards and at risk behaviors that exist or that might occur. Reviewing these job steps and hazards with the employee performing the job will help ensure an accurate and complete list. It also is a good way to educate employees on the risks and gets their buy-in on any needed changes. Written standard operating procedures can evolve through this process.

To determine which jobs should be analyzed first, review your job injury and illness reports. Obviously, a JSA should be conducted first for jobs with the highest rates of accidents and disabling injuries. Also, jobs where "close calls" have occurred should be given priority. Analyses of new jobs and jobs where changes have been made should follow. Eventually, a JSA should be conducted and made available to employees for all jobs in the workplace.

If an accident or injury occurs on a specific job, the JSA should be reviewed immediately to determine whether changes are needed in the job procedure. Anytime a JSA is revised, training should be provided in the new job methods or protective measures. A JSA can also be used to train new employees.

Pre-use and change analysis

Change analysis should be performed whenever a significant modification or addition is made to the process. Examples include building or leasing a new building, installing new equipment, using new materials, starting up new processes, or personnel changes. An organization or process is like a web of interconnections; a change in one area throws a different part off balance. Managing these ripple effects is what makes managing change a dynamic proposition with unexpected challenges. Having a team of operators, engineers, and safety and health professionals jointly analyze potential changes or new equipment, etc., before they are put online, can identify safety and production concerns up front, hopefully heading off problems before they develop. Fixing potential problems before they occur usually is less expensive than attempting to fix a problem after the fact.

An important step in preparing for a worksite change is considering the potential effect on your employees. Individuals respond differently to change, and even a clearly beneficial change can throw employees temporarily off balance. When large scale changes are anticipated, it may be beneficial to establish a Transition Management Team (TMT) to help manage the change. A TMT is a temporary group of highly talented leaders who commit all their time to making the transition a reality. The team members and what they are trying to accomplish must be accepted by the power structure of the organization. While the CEO is a visible champion for the transformation, the TMT works out the guidelines and ensures that they are understood and used. When the major change process has stabilized and moved to a phase of continuous incremental improvement, the TMT can disband.

An example of why change analysis is necessary

In response to worker complaints about the heat exposure on the pouring deck at a foundry, a company attempted to provide a more comfortable work environment. The induction furnaces were insulated with fiberglass, the water cooling jacket flow rate was reduced, a new air-conditioning system was installed, and the existing exhaust ventilation system was modified. The net effect of these changes was to cause the furnaces to overheat. The overheating of the furnaces resulted in the overheating and expansion of the mercury in the furnace thermocouples. The mercury subsequently escaped from the thermocouples and was dispersed throughout the facility. High production losses occurred and the company had to manage a hazardous waste cleanup of the facility. This case emphasizes the need to bring in operators, engineers, industrial hygienists, and/or safety professionals to evaluate a new system and to make recommendations before any change takes place.

Pattern analysis

Trends in injuries/illness experienced should be identified and analyzed. Trends can indicate areas in need of attention. Examples of trends that might emerge are a type of injury, (e.g., eye injuries), or a number of injuries/illnesses in a specific department.

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