

COMPREHENSIVE SAFETY TRAINING PROGRAMS

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THE IMPLEMENTATION OF A comprehensive safety training program requires a full understanding of safety and health training, the identification of training needs, a definition of who must be trained, the establishment of training objectives, developing training activities, evaluating training, developing recordkeeping systems, and identifying future methods of training. Carefully planning to conduct safety training results in increased training effectiveness and a reduction in incidents and costs.

SAFETY TRAINING PROGRAMS, WHILE MEETING ALL REGULATORY REQUIREMENTS, CAN BE EFFECTIVE TOOLS IN PREVENTING WORKER INCIDENTS. EMPLOYERS MUST LEARN HOW TO MAKE THESE PROGRAMS COST EFFECTIVE.

- Fall Protection Program
- Reporting incidents and injuries
- Emergency response and evacuation procedures
- Fire protection and prevention
- Back injury prevention
- Confined-space, hot-work, excavation, and line-breaking permits

- Lockout and tagout
- Hazard reporting methods.

SAFETY AND HEALTH TRAINING OVERVIEW

Safety and health training is required when a potential risk or safety procedure must be explained to a worker so he/she has the knowledge necessary to minimize the risk and operate safely in his/her work environment. Safety and health training is a matter of need based on workplace operations and hazards. The requirements of OSHA, MSHA, DOT, or state law should be considered as a guide but are certainly secondary in importance. Worker safety and health are the critical requirements.

Safety and health orientation for newly hired workers sets the tone for on-the-job safety and can help to prevent incidents during a new employee's first few weeks on the job, when a significant percentage of workplace incidents occur. Well-organized, attention-getting orientation training is retained by new employees if a traditional combination of professionally presented verbal and visual training methods is used and written testing or verification techniques are employed. A training syllabus or outline must be filed, and the documentation of this training is mandatory. Several, but not all, of the typical safety and health training subjects are as follows:

- Hazard Communication Standard
- Protective clothing and equipment
- Hearing Conservation Program

On-the-job safety and health orientation augments the basic safety orientation by introducing the workers to their shop or physical work environment. Not only can their supervisor help them understand the job safety requirements with a hands-on approach, the supervisor can also verify that the newly hired worker can proficiently accomplish his/her job. Undoubtedly, the most important aspect of this training is transference of the supervisor's experiences and discussions of the hazards that, although controlled, may exist in the workplace if the employee is unaware of the proper control measures. In this setting, the employee demonstrates to the supervisor his/her proficiency in operations procedures and safe job performance, and the supervisor is put in the role of a coach. It is helpful to establish a checklist tailored to the specific work area or responsibility. As with the basic safety orientation, the on-the-job safety and health orientation must be fully documented. The following are several universal areas of discussion during on-the-job safety and health orientation:

- Unique hazards of the work area
- Training in shop or area tools, machinery, or equipment

- Location of emergency eye wash fountains, showers, and fire extinguishers
- Emergency evacuation routes
- Location of first aid
- Housekeeping and task cleanup
- Storage and cleaning of protective clothing and equipment.

Usually, new employees receive their on-the-job safety orientation before they return to the safety classroom to be qualified in specific routine tasks for which specialized training is required. The basic safety and health orientation may have given them an overview of these subjects, but additional classroom training is required for numerous others, most of which are required by specific OSHA or other regulatory requirements. Commercially prepared video-based training packages with testing materials are usually available. Many industry organizations have prepackaged presentations that pertain directly to the type of work being done. Here are some examples of specialized safety training subjects:

- Confined-space entry (entrant, attendant, or rescue team)
- Hot work (welder or fire watcher)
- Line breaking
- Mobile equipment, including cranes, forklifts, manlifts, etc.
- Excavation and shoring
- Scaffolding
- First aid and CPR.

Nonroutine task safety training is conducted when special operations, which are not normally encountered, require safety training to ensure protection from recognized hazards such as the following:

- A rented machine is to be used.
- Deviations from normal procedures are required.
- Disaster or emergency recovery operations are underway.
- A chemical is introduced in the workplace for a one-time use.
- Incident corrective actions indicate specialized training is required.

Recurring safety and health training is either specified because of the risk and the technical nature of the subject matter or when specifically required by federal or state agencies. For instance, emergency evacuation requirements are to be briefed to all facility workers annually, and chemical hazard awareness training is needed because of the chemical technicalities.

IDENTIFYING SAFETY AND HEALTH TRAINING NEEDS

There are many industry association guides to regulatory training requirements as well as those prepared by federal agencies such as OSHA and MSHA. Moreover, organizations such as the Bureau of National Affairs (BNA) and others that provide regulatory summaries have, for a price, databases that allow quick review of the most current training requirements.

Besides implementing the mandatory federal and state requirements, the first and more important step of the training process is to review a specific problem to determine if training is the solution. Training imparts knowledge that should influence workplace behavior. However, workers, even when participants in the best of training systems, do not always perform to our expectations or standards. Inadequate training should not always be suspected, as there are many other workplace situations, such as labor-management problems, inadequate engineering controls, or procedures that can adversely impact safety and health and workplace behavior. The condition of a facility and lack of a strong housekeeping effort also can be an impediment to behavior modification.

Look to the safety training system to resolve problems that relate to lack of knowledge of an operation, task, or process; unfamiliarity with equipment; or inadequate knowledge of safe work practices. Although less effective, behavior modification training can be effective with a cultural change in the organization that results from a synergistic effect among workers and the clear belief that safety is a way of life. Such a change is complex in nature, usually very gradual, and must be strongly and visibly supported by management. Successfully establishing a strong safety culture depends on an effective and professionally managed safety and health training effort, but only as a component that is combined with other safety and health systems.

The need for improved safety and health training can be readily identified by numerous indicators such as the causes of incidents. It is important to consider training as a potential cause while conducting an incident investigation, but unfortunately, it is common to blame the worker who was involved in the incident rather than the training system, which may not be sufficiently effective.

Establishing a safety training system element for, or maintaining it in a current status, could be dependent on the conduct of Job Hazard Analysis. If a new task has been identified, the conduct of a Job Hazard Analysis is essential. OSHA Publication 3071 explains the Job Hazard Analysis process, which entails studying and recording each step of a job, identifying existing or potential hazards, and determining the safest way to perform the job in order to reduce or eliminate the risks. The information obtained from a Job Hazard Analysis can be used as the basis for the safety training activity for a particular task.

Other methods can be used to determine if training is adequate. The most effective proactive methods are behavioral assessment programs, such as job observations by supervisors and co-workers. By regularly taking the time to observe a particular task in a systematic way and then providing feedback to the individual and in writing to the safety professional, training needs can be assessed. A more direct method of measurement is simply providing a questionnaire to workers to sample their knowledge of safety rules and operations procedures. The workers may also be asked their opinions of the safety training program, and these responses should be considered in the development of new training materials or methods. Other specific questions about the workplace are whether there are any unsafe conditions, operations, or procedures that exist or whether they have had a near-miss incident that was not reported. The responses to these questions should cause managers to focus on changes in the safety and health training system.

Equally important to the identification of training needs is the necessity of reviewing existing training to periodically determine the value of training elements that may not be necessary to incident prevention. Changes in industrial operations, the types of hazardous materials used, elimination of physical hazards through engineering methods, and deletion of regulatory requirements could result in reducing emphasis on or eliminating some training elements. This permits focusing on the training that is most important to the prevention of injuries and illnesses. Training is an expensive undertaking, and every effort must be made to ensure its effectiveness.

To help streamline the safety training effort, a thorough review of all the regulatory requirements may divulge that there is duplication of training to satisfy individual OSHA standards. For instance, Hazard Communication training (29 CFR 1910.1200) is a requirement that is separate from training required under the Hazardous Waste Standard (29 CFR 1910.120), yet many of the training elements are the same. Management can reduce the training commitment by using one training experience to qualify a worker under two or more OSHA standards that otherwise would require duplicate training on the same subject matter.

WHO MUST BE TRAINED

Not all employees must be trained in every facility safety training element. The most efficient method of deciding which employees require specific training is to refer to federal or state training requirements and the Job Hazard Analysis for a specific task. It is fairly obvious that all permit-required, confined-space entrants and persons who wear respirators need specific training. Not all training decisions are as obvious. A complete review of homogeneous exposure groups who have the same task responsibilities can result in development of a training matrix. In such a matrix, all maintenance workers may require the same training elements. Facility equipment operators,

such as those who drive forklifts in the warehouse, may require a different set of training elements. A set of specific training requirements is described for each homogeneous work element in the facility.

Occasionally, new groups of employees or individuals may be targeted to repeat training because of inadequate performance that is indicated by observations or incident experience. This can be a time-consuming process and must be carefully considered and comprehensively planned before an intensive retraining program is attempted. Merely repeating the training that may have been previously inadequate is not usually a viable solution.

ESTABLISHING TRAINING OBJECTIVES

Once the workers' training needs have been identified, safety professionals should prepare training objectives. The presentation of these objectives to the training audience and managers indicates what they want their employees to do on the job and how and what to improve (or, of course, to stop doing). The objectives should be written and made a part of the training syllabus. The objective must also be measurable and identify what the worker does to demonstrate what he/she has learned, or that the objective has been reached. A key element of the objective is to identify the key performance indicators and acceptable performance.

An example of objective setting is "The employee must be able to completely describe how to lock out an electrical control switch" or "The employee must describe how a respirator works, when it is used, and how to clean it." Wording objectives in sufficient detail allows other qualified personnel to recognize when the desired behavior is exhibited.

DEVELOPING TRAINING ACTIVITIES

With the training objectives clearly in mind, learning activities can be identified. The learning activities necessary to accomplish the training objectives must ensure that employees transfer the skills or knowledge from the learning activity to the job. Hands-on training simulators, whether on a computer or training mockup such as that used for lockout training, are most effective if the training cannot be accomplished directly on the job.

The learning activities must approximate the actual job as much as is possible in a training environment. For instance, if an authorized employee must learn to lock out a boiler prior to a shutdown, the sequence might be: (a) review the established lockout points for the boiler, (b) check to ensure that there have been no modifications to the boiler system that have introduced additional energy sources or lockout points, (c) check the availability of locks, keys, lockout devices, and boxes, (d) ensure current training for all involved in the lockout, (e) assess the lockout when it is in effect, and (f) follow up to ensure proper removal of locks at the end of the job.

Safety and health trainers must be experienced and knowledgeable professionals who can motivate workers to improve safety performance; they must also be able to answer questions from the training audience. Safety training is not as effective if a safety professional is not present at some point in the training session to answer questions. The complex technology and safety and health rules in today's workplace virtually require that a safety professional be on hand.

EVALUATION OF TRAINING EFFECTIVENESS

Clearly, the best measure of training effectiveness is actual performance on the job, including the reduction in first aid and in recordable and lost-time incident rates. Conducting job observations is more proactive; determining the causes of incidents, assessing incident performance, and subsequently correcting the training system is not.

Planning to evaluate is just as important as establishing the training objectives. Traditionally, the evaluation of training is conducted during post-training quizzes, and the records of the evaluations are kept on file for later review. One novel approach is to conduct the training evaluation up to a month after the training is given; this technique gives a better indication of the retention of the material. The evaluation should also include an assessment of the relevance of the material and appropriateness of the training program.

Safety professionals and supervisors must be prepared to act on the evaluations. If portions of the training were already known and redundant, confusing, or just omitted, an action plan to correct the deficiencies is necessary.

TRAINING RECORDKEEPING

The retention of training records is an essential element of every training program. When workers receive training, the minimum documentation is a brief description (three or four sentences) of the training conducted, a record of attendance with the instructor's name, employee signatures, the date of training, and a copy of any test used to verify understanding. Interactive computer training records can be kept on the computer and, in those instances, OSHA has indicated that there is no need to require or retain the employee's signed attendance or copies of each of the trainees' tests; however, the test scores must be recorded on the training software system. When OSHA or another federal agency reviews the safety training program, they rely on employee interviews to determine employee knowledge the adequacy of training. The supporting documentation in the safety files backs up any conclusions of the agency officials and serves as a record for the employer that the training was accomplished if proof is later required during an incident investigation or in a litigation situation.

THE FUTURE OF SAFETY AND HEALTH TRAINING

As additional requirements are identified by regulatory agencies and employers use Job Hazard Analysis techniques and recognize the need for more comprehensive training, there is great concern about the loss of production while training is accomplished. Streamlining the training and constantly adjusting the content is one cost-effective approach, but the most revolutionary technique is interactive video-based training, which can be done on virtually any computer. By networking the computers at a job site, the training and test results can be recorded. Interactive video training allows a self-paced training schedule for each employee with an enhanced ability to verify understanding and review. TJ

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