



NAC Executive Insights

Safety Culture Series

Safety Training

Key Points

- Workers getting home safely at the end of any workday requires that **everyone** on the job, be they the site workers, office workers, supervisors, owners, or others accessing the site, be trained and educated on all safety issues relevant to their work environment.
- As a minimum, employers should comply with Occupational Safety and Health Act (OSHA) regulations. Employers are required by OSHA statute to protect employees.
- Toolbox talks reviewing past training have been found to be very helpful.
- Refresher safety training should be part of the training program. Records should be maintained to ensure individuals have received needed training.

Introduction

Workplace safety training is a process that educates employees about potential hazards in their work environment and how to deal with them. The objective is to provide the workforce with knowledge and skills to perform their work in a way that is safe for them and their co-workers. The training should include instructions and guidelines to identify, report, and manage safety issues.

Employers must comply with Occupational Safety and Health Administration (OSHA) standards. These standards are, however, just a minimum. Workers getting home safely at the end of any workday requires that everyone on the job receive adequate and appropriate workplace safety training, be they site workers, office workers, supervisors, owners, or others accessing the site. Such training is essential so that all can be aware of and avoid the hazards around them. It will also help them become more knowledgeable and helpful in aiding others to recognize hazards or adjust their actions.

Two broad categories of topics workers and others should be trained for are: (1) general training, which covers safety hazards appropriate for the whole site and (2) job-specific training, which is relevant to an individual's job assignment.

General Training

Everyone on the site should receive some form of training on general hazards that are likely to be encountered at the site. This includes training for fall protection, forklift safety, back injury prevention,

caught-between injuries, struck-by injuries, electrical hazards and electrocutions, data security, and proper use and storage of hazardous materials.

The general hazards training should also include training in environmental safety (including chemical safety), cardiopulmonary resuscitation (CPR), first aid, and care for persons who have abused alcohol or used prohibited substances.

There may be different levels of general hazards training based on whether the individual is a site visitor, is onsite for a specifically defined task such as obtaining a sample, or who may be witnessing a specific test.

Job-Specific Training

In addition to covering OSHA mandated requirements and general hazards training, site workers may need training in the specific activities they are being asked to perform. Such specific training could cover topics such as welding, trenching and shoring, electrician tasks, confined space entry, and other job-specific areas. Training should cover and be consistent with the relevant safe work practices which are discussed in the Executive Insight on that topic.

It is recognized that not everyone needs to be trained on every safe work practice. The training program, however, should assure that anyone who is asked to perform a specific job has received training in that activity. This is particularly important when an individual's job responsibilities change.

Workplace Safety Training Programs: Classroom, Online, and Hands-On

Workplace safety training that is administered by training firms, safety experts, and others, including that from the Occupational Safety and Health Administration (OSHA), focuses primarily on educating the employee. This is not sufficient. A good workplace safety training program must include both general hazards training and training in performing the specific activities relevant to each individual's job responsibilities.

Safety training can occur in many ways. For example, there could be formal classroom training, online computer training, and practical hands-on training. Each of these offers unique advantages and drawbacks. A combination of these approaches is the most effective strategy.

Formal classroom training provides a structured environment for in-depth learning. Workers receive theoretical foundations, which fosters a comprehensive understanding of construction principles. This approach also can enhance workers' ability to more easily adapt to changing construction technologies and methods. Instructors can be professional instructors, construction workers, construction supervisors, or construction employers. The important issue is that the instructor is competent and the people getting the instruction trust the person instructing them. Having class or participants touch and feel equipment they are likely to encounter on a site is an extremely important component, although it may not be possible in formal classroom training. Time away from worksites may be required, with associated costs and disruptions in work schedules.

Online training brings the advantage of flexibility, allowing workers to access materials at their own pace and convenience. This mode of learning offers a wide range of resources, from video lectures to interactive simulations, accommodating various learning styles. Online training also eliminates geographical barriers, enabling workers to access expertise beyond their local area. Online training, however, lacks direct interaction with instructors and peers. This may be a drawback to collaborative learning and hinder immediate clarification of trainee questions. The absence of hands-on experience can be a significant drawback, as construction work relies heavily on practical skills.

Hands-on training immerses construction workers in real-life scenarios, enabling them to apply theories directly to tasks. It also is best at developing skills and bringing about familiarity with specific onsite equipment. This method could perpetuate less than best practices, however, depending on the instructor's competence and desire to teach. Hands-on training is also the most difficult to document. Additionally, hands-on training might not cover the full spectrum of theoretical knowledge, potentially limiting workers' ability to adapt to rapidly changing construction technologies and methods.

Other Issues in Workplace Safety Training Programs

Workers should receive safety training in their native language. Studies have shown that people retain information best if it is taught to them in their native language. With safety training, workers in a training program taught in their own language can focus on the content without first converting the information mentally into their first language. In construction, not picking up the specifics of the training topics can lead to misinterpretations, lost productivity, and even injury or accident. OSHA statistics point to the fact that language barriers contribute to 25 percent of job-related accidents. The successful work training programs take these facts seriously and offer training in a worker's native language.

The training program needs to address the type and frequency required for refresher training. Safe work practices, equipment design and operations, and various safety requirements evolve over time. Bad habits and incorrect ways of working can develop. The workplace safety program should include a process by which training is refreshed at a certain interval. The interval can vary according to the specific topics to be covered.

Documenting training is extremely important. Periodically the training specifics should be reviewed to assure their relevance to job responsibilities. Refresh the specifics at an appropriate interval.

Toolbox talks, which can be daily, weekly, or adjusted in frequency to a specific site, are helpful in reviewing safe work practices, promoting teamwork and positive attitudes, and reinforcing the training in the program.

Office Safety Training

Many project employees are office-based. It is important that these employees are made aware that hazards exist in the office and the right steps are taken to ensure a safe work environment. Some best practices for office safety include:

- All office employees receive an induction session on joining the project that addresses office safety issues and explains any safety rules/expectations.

- An office safety committee is formed by employees (sponsored by a leader) that meets periodically to review office safety performance and champions office safety campaigns.
- Regular office safety audits are conducted to enhance performance.

Driving Safety Training

One of the most hazardous activities on many projects is driving. It is important that a strong emphasis is placed on driving safety. Some driving best practices include:

- All project drivers undergo defensive driving training.
- Drivers are taught that they are accountable for transportation safety and should conduct a series of pre-journey vehicle safety checks.
- Drivers ensure all passengers fasten their seat belts prior to starting any journey.
- Consider installing a vehicle monitoring system in all project vehicles to better understand driver's behaviors. The data can provide both good and bad driver feedback.

Site-Based Safety Training

The vast majority of employees will be based at the site where the project is being constructed. These employees will be exposed to a range of hazards depending on the scope of the work. It is critical all employees are well trained to recognize these hazards and understand the precautions to be taken. Some site-based safety best practices include:

- Everyone visiting the site (regular employees, managers, and visitors) must attend a safety induction session. These sessions should be led by a senior site leader. He or she must demonstrate the company's commitment to a safe work environment. The leader should also spell out the expectations for everyone to work safely while onsite.
- For large work sites, a best practice is the creation of an on-site "Safety Training School," where employees receive practical demonstrations of the hazards on site. These training schools include "mock-ups" of typical work environments (e.g., scaffolding, ladder installations, confined space situations) to illustrate good practice. Also demonstrated are appropriate use of personal protective equipment (PPE), including how to use fall protection equipment and what types of gloves to wear in various environments. All new regular employees should attend the Safety Training School as part of their induction before being released on site.
- Additional training, education, and instruction is essential whenever new substances, processes, procedures, or equipment are introduced to the workplace which represent a new hazard.
- Employees certified to safely operate any equipment should be retrained by the employer at least every three years.

- Workers and supervisors who demonstrate loss of proficiency should be retrained. Also, any worker who has been observed performing an unsafe work practice or has had an accident or near-miss accident should attend refresher training.
- Before the start of any job, an analysis of the hazards present or anticipated should be developed (See Executive Insight on Job Safety Analysis). Training is needed to assure workers and job supervisors understand the proper procedures for conducting and documenting a proper Job Safety Analysis.
- Workers and supervisors should be trained to understand the need and procedures for conducting daily checks of all equipment that is to be used in executing the tasks for the day. This is necessary to ensure that the equipment will operate properly to avoid or mitigate injury.
- Workers and supervisors should be trained on the need and procedures for establishing a communication plan for working alone. It is important, especially when working alone, that others know the task and location of the lone worker and when contact with them will be made again.

Conclusions

Any (all) employer(s) should have a safety training program in place for everyone. Having and maintaining a documented safety training program is an effective method of ensuring all receive the necessary safety information needed to perform their jobs in the safest possible manner.

For Further Reading – Safety Culture Series (Executive Insights)

- [Introduction to the Safety Culture Series](#)
- Safety Culture – [Human Performance Principles](#)
- Safety Culture – [Worker Participation in the Safety Management System \(SMS\)](#)
- Safety Culture – [Demonstrating a Culture of Care and Support: The Leaders’ Role](#)
- Safety Culture – [Drug and Alcohol Testing](#)
- Safety Culture – [Incident/Accident/Near Miss Reporting and Investigations](#)

About the Author

Christine Branche was elected to the National Academy of Construction in 2018. Her career as a professional investigator into the patterns and causes of disease and injury includes service with the Centers for Disease Control and Prevention (CDC) for 31 years, first in injury prevention and control. She joined the National Institute for Occupational Safety and Health (NIOSH), a center at CDC, in 2007 and served as its acting director during 2008-2009. She served as associate director for construction during 2009-2018.

Although the author and NAC have made every effort to ensure accuracy and completeness of the advice or information presented within, NAC and the author assume no responsibility for any errors, inaccuracies, omissions or inconsistencies it may contain, or for any results obtained from the use of this information. The information is provided on an “as is” basis with no guarantees of completeness, accuracy, usefulness or timeliness, and without any warranties of any kind whatsoever, express or implied. Reliance on any information provided by NAC or the author is solely at your own risk.