



TRAINING 2022

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Occupational Safety and Health Training

By: **Henry E. Payne, Ph.D.**, Contributor

All workers need occupational safety and health training. More pointedly, they require training on the specific hazards they will encounter at their distinct worksites. Workers are frequently injured or made ill on the job, because they encountered job hazards they were either not aware of; or they lack training on how to safely respond. Awareness training on job hazards is essential in helping keep workers safe.

Workers in offices, retail, fast food, healthcare and delivery, as well as workers in manufacturing and construction, face hazards which are specific to their worksites. Safety and health training must be targeted to distinct worksite hazards. Initial awareness training is a great way to start new workers to become aware of hazards they may encounter, but it is not enough. All workers need update training, at least on an annual basis, to be reminded of the hazards they face, as well as introduced to new hazards they may be encountered as workers' jobs evolve and include additional tasks.

Worker training needs should include both a recognition of specific job-related hazards and training on how to respond to encountered hazards. Some hazards can be corrected when encountered by workers, such as an overloaded electrical outlet or an emergency exit blocked by boxes and trash. Other hazards may be best addressed by changes in work processes or equipment. Supervisory personnel typically implement these types of changes.

BENEFITS OF TRAINING

Occupational safety and health training is also good for employers. Injured or ill workers tend to miss work for considerable periods of time. In some cases, they never return to work, requiring the hiring and training of a new employee, which is costly to employers. Additionally,

knowing fellow workers have been exposed to hazards, resulting in an injury or illness, can have a negative impact on other workers' morale and reduce productivity.

An injured, ill or deceased worker can also have an impact on company profits. Worker's compensation insurance increases with work injuries and illness. Worker life insurance premiums increase with worker fatalities. These increased costs reduce profits and often lead to increased pressure on remaining workers to increase productivity—further reducing worker morale. Simple hazard awareness and annual update training can go along way in avoiding many injuries, illnesses and fatalities.

KNOW YOUR CERTIFICATIONS

In the field of occupational safety and health, certifications are important and are widely recognized as a measure of expert proficiency. But it is essential that individuals and organizations understand the difference between a course completion certificate, a certificate program and a recognized professional certification.

Professional credentials, also known as professional certifications, are earned and are awarded by recognized professional organizations to verify one's professional qualifications and competence. They attest to a specified process and successful completion of criteria established and maintained by the professional organizations.

PROFESSIONAL CERTIFICATIONS

Certification is a formal process that recognizes and validates one's qualifications and knowledge in a specific subject. Individuals earn certifications to assure



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they are qualified to perform a job or task through the acknowledgement of educational and professional achievement. Certificates verify that certificate holders have achieved a specified, baseline level of competence in a specific subject area and assures employers that the individuals are capable of handling the challenges their job responsibilities present.

Certifications are earned from a professional society or board and must be renewed periodically, generally through completed continuing education units. Widely recognized certifications in the field of occupational safety and health include Certified Safety Professional (CSP), Construction Health and Safety Technician (CHST) and Certified Industrial Hygienist (CIH).

The Board of Certified Safety Professionals (BCSP) establishes and certifies the technical competency



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criteria for safety, health and environmental practitioners, including the CSP and CHST credentials.

The CSP credential provides safety practitioners a path to greater recognition and career opportunities, offering a certification that demonstrates the individual has met the requirements for specific standards of safety, health and environmental knowledge and experience. The CSP credential is often considered the industry's most recognized safety, health and environmental certification.

The CHST credential is for construction job sites' safety, health and environment specialists. Responsibilities for safety, health and environment may be all or part of a CHST's job duties, which may cover one or more significant construction projects or job sites. Candidates may work for an owner, general contractor, subcontractor or firm involved in construction.

The Certified Industrial Hygienist (CIH) certification is the premier certification for occupational health and safety professionals around the world. It is also considered the top certification for indoor air-quality consultants. This most prestigious certification is offered by the American Board of Industrial Hygiene (BGC) and is accredited through the American National Standards Institute (ANSI) and the National Commission for Certifying Agencies (NCCA).

CERTIFICATES

A course completion certificate indicates an individual has successfully completed an academic or training course. This is not considered a professional certification. The certificate of completion is issued at the end of the training, and no additional renewals are required. Many colleges, universities and professional training organizations issue course completion certificates.

CERTIFICATE PROGRAMS

Certificate programs consist of multiple courses related to one particular aspect or topic area. This is not considered a professional certification. Individuals typically complete certificate programs related to their field, which supplements or enhances an individual's prior education. Many colleges, universities and professional training organizations offer certificate programs.

ACCREDITATION

Accreditation is an essential component for any training provider. Being evaluated and accredited by an independent, third-party organization, using accepted standards for education and training, ensures the training demonstrates a high level of validity, integrity and quality. This is an essential component in many fields in which professional certifications are prevalent. This is especially true in the field of occupational safety and health, as it relates to professional certifications, such as Certified Safety Professional (CSP), Construction Health and Safety Technician (CHST) and Certified Industrial Hygienist (CIH), which require ongoing Continuing Education Units (CEUs) in order to maintain these certifications.

Training is an important component in keeping workers safe on the job. It is also helpful in advancing careers of safety professionals. Be sure to find the appropriate training and accredited training provider to meet your needs for your work and career. ■

[Henry E. Payne, Ph.D., is President of Global OSHA, which provides safety and health training programs and courses worldwide.]

Delivering Effective Safety Training: Going beyond OSHA's requirements

By: **Mark Stromme**, Contributor

Safety professionals understand the importance of following OSHA's training requirements. They know that training takes time and effort. But not just any training will do; it must be delivered in a way that overcomes seven common training hurdles. Only then will the worker understand and get what is needed from it.

Many of OSHA's standards have specific training requirements. It's important to meet these requirements, but remember, OSHA only describes the minimum training required. Many employers choose to go beyond the requirements to meet a higher standard — which includes meeting industry best practices and trends.

OSHA'S REQUIREMENTS

Staying just with the OSHA requirements, over 60 standards mention training. Determining if OSHA has a training requirement is the first step in analyzing training needs. In manufacturing, some of the most common training topics include:

- Bloodborne pathogens
- Hearing protection
- Respiratory protection
- Emergency action plans
- Lockout/tagout
- Forklifts
- Hazard communication
- Fall protection

To complicate matters, while OSHA specifically outlines training requirements in many standards, some standards say to “inform” or “instruct” workers on something, but don't use the word “train.” For example, the Machine Guarding standard doesn't specifically mention training, but training is clearly useful and even necessary. Training workers to recognize pinch points, or how to

spot a defective guard, is important. Another example is only designated personnel can operate an overhead crane, and the employer must determine if a worker can be “designated” — which sounds like training is certainly needed.

TRAINING 101

Effective training starts with proper planning. Most trainers say they need up to eight hours of prep time for every

hour of training. That includes research time, preparing written materials, gathering props, setting up the classroom and inviting the learners. Which means an 8-hour training program requires a lot of preparation work.

Keep in mind most people have relatively short attention spans, even for the most exciting content. It's recommended to limit content to 45-50 minutes per hour, with



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Limit training sessions to 45-50 minutes per hour, with a 10-15-minute break before starting up again.

a 10–15-minute break before starting up again. That way employees can have time to ask questions.

Remember, not everyone is comfortable asking questions in front of a crowd. A good trainer sticks around after the session to answer questions. That might require the trainer to leave a half-hour block of time for this after the training session.

SEVEN TRAINING HURDLES

Trainers must understand the issues and frustrations that trainees encounter. Here's a common list of hurdles that must be overcome:

1. Content isn't relevant — Trainees must feel the training is important and applicable to them. Does the material provide what they need and relate to what they're doing, or is it too general?
2. Material is outdated — Images and information used in training must be current. Photos from the 1990s and outdated slang or wording must be replaced. They're a distraction and hard to take seriously.
3. Information is too technical — Not all trainees need the same level of detail. Know their reading ability, math skills if needed, and vocabulary level. It's easy to get carried away with jargon or government-speak when talking about the OSHA standards.

4. Material isn't in the trainees' language — One common challenge is trainees who do not speak English, or who do not speak English as their first language. This is where an interpreter is needed or trainers (or training helpers) who speak the trainees' language.
5. Trainer isn't qualified to teach the material — Some OSHA regulations require the trainer to have specific knowledge and experience. The powered industrial truck regulation says that training must be conducted by persons who have the knowledge, training and experience to train operators and evaluate their competence. OSHA clarified that the instructor must have experience with the equipment (truck type) or attachment to provide training. The bloodborne pathogens standard says the trainer "shall be knowledgeable in the subject matter covered" as it relates to the workplace. OSHA clarified that the trainer need not be a health care professional, but if there are deficiencies in the quality of the training, OSHA may question the trainer's background.
6. Material is boring/not interactive — To be effective, training should be interactive, requiring the trainees to answer questions, solve problems or get hands-on time using equipment. Just sitting and listening is a challenge for many people.
7. Material isn't in the trainees' preferred learning style — Some people learn best by seeing. Others need to

hear the material. And many are hands-on learners who need to handle equipment to really understand a concept. Effective training incorporates all three learning styles.

Finally, determine if any trainees have special needs. Some workers may have a vision or hearing impairment that requires extra planning and awareness.

TAKEAWAYS

Understanding which of OSHA's training requirements apply to a facility is often a challenge for safety professionals and is complicated by standards that say to "inform" or "instruct" workers on something.

And when it comes to the actual instruction and training, seven common training hurdles must be addressed to provide effective employee training. Only then will employees understand and get what is needed from it. ■

Mark Stromme is Senior EHS Editor with J. J. Keller & Associates, Inc., which addresses nearly 1,500 compliance topics with a diverse portfolio of solutions, including cloud management tools, customizable training programs, managed and consulting services, online and print compliance manuals and instructional publications. For details, visit <https://www.jjkellersafety.com/>

e-Hazard Management, LLC



Founded in July of 2004, e-Hazard has become a leader in overall electrical safety compliance for customers all over the world. E-Hazard's mission is to *help people who work around electricity go home safe to their families*. Our team of experienced Subject Matter Experts provide practical, customer-focused solutions for electrical safety.

E-Hazard has established strong relationships with utilities and commercial/industrial customers in the US and abroad as well as the many Fortune 500 companies across the globe. E-Hazard also works closely with the US government and has many working electrical contractor partnerships. Many of our Subject Matter Experts have current memberships with IEEE, NFPA, ASTM, ANSI, ASSP, IEC, NETA, NSC, VPP and many more organizations all to ensure we have the latest and greatest information in keeping our customers fully compliant with the latest standards.

E-Hazard takes a comprehensive approach to electrical safety and provides solutions tailored to our customer's needs and we offer:

- Electrical Training (various types of courses including our award winning Train the Trainer)
- Arc Flash Studies

- Electrical Safety Gap Analyses
- Electrical Safety Program (support for updating as well as development)
- Infrared Scanning
- LOTO
- Incident Investigations
- Consulting & much, much, more....

E-Hazard's mission, *to help people who work around electricity go home safely*, is reflected in our practical, customer-focused approach to electrical safety. Let us know how we can help you stay compliant and keep your team safe regarding electrical safety compliance. ■

Learn more at <https://e-hazard.com/workplacepub>.

OSHA Standard 29 CFR 1926.503: Fall Protection Training

The Risk

Workers performing tasks 6 feet or more above lower levels are at risk of fatal falls or serious injuries. In the construction industry alone, falls generally account for about a third of the deaths that occur on the job each year. Equipping employees with the type of fall protection appropriate to the tasks they perform and the environment in which they work is vital. So is regularly assessing the fall protection devices used, to confirm that it is in good shape. However, safeguarding workers from falls and the serious injuries they can cause requires a broader approach – one that includes training about hazard recognition and procedures for erecting and maintaining fall protection.

Major Provisions of the Standard

- The employer shall provide a training program for each employee who might be exposed to fall hazards. The program shall enable each employee to recognize the hazards of falling and shall train each employee in the procedures to be followed in order to minimize these hazards.
- The employer shall assure that each employee has been trained, as

necessary, by a competent person qualified in the following areas:

- The nature of fall hazards in the work area;
 - The correct procedures for erecting, maintaining, disassembling and inspecting the fall protection systems to be used;
 - The use and operation of guardrail systems, personal fall arrest systems, safety net systems, warning line systems, safety monitoring systems, controlled access zones and other protection to be used;
 - The role of each employee in the safety monitoring system when this system is used;
 - The limitations on the use of mechanical equipment during the performance of roofing work on low-sloped roofs;
 - The correct procedures for the handling and storage of equipment and materials and the erection of overhead protection; and
 - The role of employees in fall protection plans.
- The employer shall verify compliance with paragraph (a) of this section by preparing a written certification record. The written certification record shall contain

The Numbers

OSHA enforcement statistics for this standard for the period of October 2020 through September 2021:

Citations	Inspections	Penalty	Industry
1,732	1,667	\$3,024,375	TOTAL
1,688	1,627	\$2,938,407	Construction
11	11	\$25,301	Wholesale Trade
8	8	\$32,280	Admin. Support & Waste Mgmt. & Remediation Svcs.
7	6	\$14,555	Manufacturing (pt. 3 of 3)
6	4	\$3,414	Utilities
2	2	\$329	Retail Trade (pt. 1 of 2)
2	1	\$0	Transportation and Warehousing (1 of 2)
1	1	\$5,668	54 Professional, Scientific & Technical Svcs.
1	1	\$2,458	Manufacturing (pt. 1 of 3)
1	1	\$1,215	92 Public Administration
1	1	\$750	Other Services

the name or other identity of the employee trained, the date(s) of the training and the signature of the person who conducted the training or the signature of the employer. If the employer relies on training conducted by another employer or completed prior to the effective date of this section, the certification record shall indicate the date the employer determined the prior training was adequate rather than the date of actual training.

- The latest training certification shall be maintained.
- “Retraining.” When the employer has reason to believe that any affected employee who has already been trained does not have the understanding and skill required by paragraph (a) of this section, the employer shall retrain each such employee. Circumstances where retraining is required include, but are not limited to, situations where:
 - Changes in the workplace render previous training obsolete; or

- Changes in the types of fall protection systems or equipment to be used render previous training obsolete; or
- Inadequacies in an affected employee's knowledge or use of fall protection systems or equipment indicate that the employee has not retained the requisite understanding or skill.

Compliance Resources

OSHA has a publication entitled, *Fall Prevention Training Guide: A Lesson Plan for Employers*. This training guide will help you plan how to prevent injuries and fatalities from falls among your crew and provide training to your workers. It includes advice for trainers, a series of Toolbox Talks, instructions for how to use the Toolbox Talks to train workers in fall prevention and details about various fall prevention topics. There are also educational materials that include a fall prevention fact sheet and wallet card in both English and Spanish, prevention videos and a fall prevention poster. The training is designed to be short, participatory, and easy to follow. Access it at: <https://tinyurl.com/yej7n47t> ■



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Construction Safety Training Best Practices

By Melody Hollis, Education Services Manager & Maureen Mallach, Manager of Professional Services, HCSS

Construction sites and work can be hazardous if safety measures are not correctly put in place and if workers at the jobsite are not adequately trained. Skimping on safety training is not a good idea as it can lead to significant liability for the contractor. Even if your firm is under pressure to meet deadlines, putting safety training on the back burner is not wise.

Safety training is a whole new ballpark. It involves more than just selecting a software tool to manage safety. It involves detailed training from certified professionals, change management, and developing a safety culture.

SOME SAFETY MANAGEMENT SOFTWARE

Safety management software providers contract with certified safety professionals to deliver training on their software. These certified professionals are senior safety officials with decades of industry experience who can go beyond just reviewing a checklist of features of the product. They will address the company's safety culture,

working with employees to instill a corporate culture that focuses on safety.

Safety professionals who train others know and understand OSHA's laws and regulations and other safety standards. They know how to create an effective safety program built around a safety culture and processes. They know what information to collect and how to use and analyze it to improve safety across the board.

Some safety management software offers pre-built safety meetings and inspections to promote ownership of safety within construction crews. Crew leaders can verify and update crew member skills and certifications, use relevant inspections as teaching tools, record safety meeting attendance and topics, track individual employee safety education goals, and track near misses, incidents, and observations to help spot leading indicators of potentially unsafe behavior.

BEST PRACTICES FOR TRAINING

Deliver training that mirrors a company's real-life business with all its complexities. In other words, provide real-world challenges that the participants can solve using their newfound knowledge and skills.

Don't try to include too many things in training at once. For many students, complicated technology training can be a nightmare. Use the 80/20 rule, where training is focused on 20% of the main functions that employees will use 80% of the time. This focus speeds the training process and provides the most significant usage of the new system.

Keep communications flowing freely with employees to understand how the new software implementation is going, who benefits, and the overall impact on the business' growth and competitive advantages. The more each employee understands how their efforts to change processes affect the company, the more likely they will invest time and energy into making those changes.

Offer training incentives for employees to encourage them to use the new software. These incentives can range from certificates and plaques to Starbucks gift cards or cash.

Provide a variety of training formats, from online to in class. Give employees the choice of when to take the training, allowing them to consider their current schedules. Give them plenty of advance notice of when training must be complete.

Ask for feedback from the trained people by sending out a survey throughout the implementation and training processes to ensure the vendor is on the right track. Then rely on the surveys to guide how the vendor is doing and what they can do better.



Offer virtual or in-person workshops monthly, which can be a forum for advanced users to pick the brain of the vendor engineers and other power users. A vendor may also offer introductory courses that cover all the essentials. For example, a workshop on construction bidding software would cover estimating, bidding, quoting, pricing, and reporting.

Ongoing online learning allows employees to train at their own pace. Giving each employee access to this learning environment will provide them with as-needed refreshers on performing specific actions with the new software.

Once the software is in place and the team trained, how do you know that the team will use it? This is where change management enters the picture.

CHANGE MANAGEMENT

Change management is vital because it helps your workers gradually accept changes because of the new software. Even with a formal change management process, approximately 50%¹ of all organizational changes are unsuccessful, so this has to be handled delicately.

Critical steps in the change management process include:

- Preparing the organization for change
- Crafting a vision and plan for change
- Implementing the changes
- Embedding the changes within the company culture
- Reviewing progress and analyzing results

J.F. Brennan, a marine construction, environmental remediation, and harbor services company with job sites in all 50 states, implemented a safety program that accepts voluntary field observations submitted by employees from job sites and work areas. These observations are then distributed to the whole company to discuss.

¹ <https://www.gartner.com/en/human-resources/insights/organizational-change-management>

Each week, the company has weekly, corporation-wide safety meetings to discuss the safety department's observations. Everyone from the field workers to the CEO can call into the session. Because these observations can be submitted via mobile devices in real-time, discussions about what happened and the solution to the issue can occur quickly. Plus, people are more likely to take photos and submit them along with the write-up, providing more details on an incident or observation.

CREATING A SAFETY MANAGEMENT CULTURE

Foremen and Safety Managers are always prepared for the unexpected when you use a safety management solution with hundreds of toolbox talks, comprehensive inspection reports, crew skill tracking, and safety trend reports that recommend if any specific training topics are needed. When you empower your crews to take on-site ownership of safety, you're able to go beyond compliance and build a strong safety culture.

Additionally, by creating a strong safety culture, you can reduce your exposure to a fine, reduce workers' comp costs, and eliminate costly claims while improving your EMR.

BUILDING A SAFETY CULTURE

There are several steps a company should follow to start to build a safety culture within its organization. The steps are:

- 1. Practice, practice, practice.** Have supervisors practice reporting incidents into a safety management program to coach their teams on how to fill out quality incident reports without the stress of an actual incident. The more practice employees have done, the more comfortable they feel doing it.
- 2. Be proactive, not reactive.** Develop a process for communication about a safety issue. For example, with COVID-19, some contractors developed an approach to help employees who needed to support a sick child, provide them with places to go and get tested, and determine what to do to help. Whether

giving a toolbox talk about watching out for school zones or staying six feet apart, the goal is to be proactive, not reactive.

3. Teach crews how to advocate for themselves.

Empower your construction crews to suggest safety processes and ensure they know how to advocate for themselves at work and in life. For example, in the case of COVID, teams should feel comfortable asking questions about the precautions being taken at the jobsite to keep workers safe from contamination, such as how to maintain safe distances, wear masks, and use hand-washing stations frequently.

4. Recognize exceptional safety behavior.

Recognize employees in front of their peers when they perform an unprecedented safety act. The public recognition empowers crew members to become safety experts in their way.

Software training is essential. When businesses invest in employee software education, they get a better return on the software they purchase. However, safety training is different and involves training on the features and functions of the software and a culture shift of the entire organization. Everyone within the organization needs to focus on safety for success. ■

HCSS is the trusted leader in construction software for estimating, field entry, project management, safety, digital plans, 3-D drone imaging, fleet management, and telematics. For 35 years, the company has used annual user's group meetings to listen to customers resulting in innovative software to manage every part of the project lifecycle. With 24/7 instant support and a proven implementation process, HCSS has helped improve operations for over 3,500 companies ranging from \$1M to billions in revenue across the United States and Canada ([hcss.com](https://www.hcss.com)).

AVO Training Institute

For nearly 60 years, AVO Training Institute remains a global leader in **Electrical Safety and Maintenance Training courses and certifications**. AVO empowers electrical professionals to do their work safely and effectively, allowing them to go home to their families at the end of their workday.

Since 1963, AVO has worked to honor its mission: “Saving Lives through a World Class Learning Experience.”

With 55-plus electrical courses, we offer a wide variety of training for **EVERY experience level**, covering numerous fields:

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- Infrared Thermography
- Utilities (Safety)
- Industrial Electrical Safety
- Renewables | Solar Systems and Wind
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- Protective Relay Maintenance
- Basic, Advanced, Generation & Solid-State
- Infrared Thermography I & II
- Certified Fiber Optic Technician (FOA)
- Circuit Breaker Maintenance, Low-Voltage
- Cable Testing & Diagnostics, Medium-Voltage
- Cable Technician, Medium-Voltage
- Industrial Electrical Safety Inspector

Our talented and experienced instructors deliver an engaging, hands-on experience for our students, in a professional, real-world environment.

AVO is accredited by the International Association of Continuing Education and Training (IACET), and we use the ANSI/IACET Standard to develop our framework for continuous improvement of our Electrical programs. IACET continuing education credits (CEUs) are easily transferable to other programs.

Our courses are offered at our training locations throughout the United States, with headquarters in Dallas, Texas. We also provide convenient on-site

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- Cost Effective
- Flexible
- Skill-Based
- Customizable
- A Downtime-Reducing Option
- Confidential

Recently, a worldwide pandemic challenged us to keep electrical professionals safe through alternative training programs. As a result, AVO developed Virtual Training, which is LIVE and Instructor-led. Additionally, AVO offers Custom Course Design and Online Training courses that students can take at their own pace. Most recently, we created Virtual Reality electrical safety training.

This year, AVO entered the Solar Systems world, providing Solar Systems NEC; Solar Systems Electrical Safety; and Solar Systems Battery Storage Programs. With the growth of Solar Power, it's important to keep our Electrical Professionals safe in this new energy industry as well.

You can view all AVO scheduled Electrical Safety & Electrical Maintenance Courses: <https://www.avotraining.com/schedule/>

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Safety Training Techniques and Benefits for Your Facility

By: **Jane Marsh**, Contributor

Workplace safety is an integral part of operating any business or organization. Keeping your team safe reduces the chances of accidents or fatalities in the workplace. Improving workplace safety increases employee morale and productivity while reducing costs. What are some of the best safety training techniques, and what benefits can they offer your facility?

CREATE A SAFETY CULTURE

One of the best training techniques for improving workplace safety is to create a safety culture. Instead of only focusing on safety rules and regulations, a safety culture turns it from an abstract concept into a mindset that everyone can take on and embrace.

This safety culture should involve employees at every level, from the newest hire to the highest-paid executive. Those in leadership positions should strive to model the kind of safety-centered behavior they wish to see in the workplace.

CONDUCT A RISK ASSESSMENT

Determining the best way to create a safety training plan starts with understanding where the risks lie. A comprehensive risk assessment can be one of the most useful tools in your arsenal. Take the time to determine where risks might exist in your facility. This list should include both work-related risks and a contingency plan for emergencies that might occur.

Natural disasters, pandemics like the COVID-19 pandemic that began in 2020 and anything else that might throw a wrench in your plans need a contingency plan to ensure that everyone in the facility understands how to react.

START WITH PROGRAM AWARENESS TRAINING

It can be challenging to set up a comprehensive safety training plan for those who will be impacted by it. The

first step should always be making everyone aware of the training program. Each person in the facility should understand what the program entails, including structure, plans, procedures and any other relevant information that could impact training or workplace safety.

This step should include a comprehensive list of steps, from the policies already in place to the requirements for reporting accidents or near-misses.

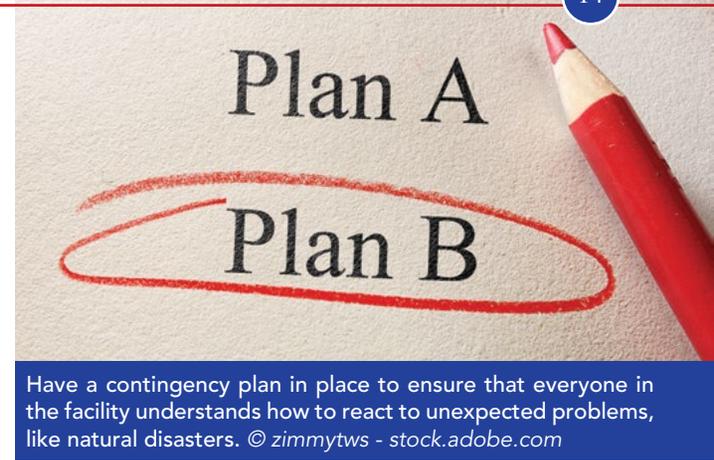
ENSURE THAT EVERYONE IS AWARE OF THEIR ROLES

Not every employee will require the same level of safety training. Those in roles that require contact with hazardous equipment or chemicals, for example, will need more safety training than those who work in less specialized positions.

Compartmentalizing the training means that you're not wasting employees' time on training that they don't need and may never use. At the same time, ensure that there are opportunities for additional training as team members change positions or receive promotions. Safety training should be a continuous process rather than something that ends as soon as onboarding is complete.

PROVIDE ADDITIONAL HAZARD IDENTIFICATION TRAINING

Regardless of the nature of the work in your facility, there are cases where additional hazard identification training is necessary. This training could include steps for handling a hazardous chemical spill or bloodborne pathogen training necessary to administer first aid safely. Look at your risk assessment to determine where these risks exist and use that information to determine who might need additional hazard identification training.



Have a contingency plan in place to ensure that everyone in the facility understands how to react to unexpected problems, like natural disasters. © zimmytws - stock.adobe.com

BENEFITS OF WORKPLACE SAFETY TRAINING

What are the benefits of a comprehensive workplace safety training program?

- **Improved Employee Morale** — One survey from 2019 found that more than 94 % of employees would stay with a company that provided comprehensive safety training.
- **Reduced Costs** — Fewer workplace accidents mean fewer workers' compensation claims and less downtime to complete investigations.
- **Lower Insurance Premiums** — Keeping employees safe in the workplace can significantly reduce insurance premiums.
- **Fewer Lost Work Days** — A workplace injury can shut down a facility for a few hours. A fatality can do the same for days while investigations take place. Safety training reduces the number of lost workdays.

CREATING A SAFETY-CENTRIC FUTURE

Workplace safety should be at the core of every facility. Employees are the heart and soul of any organization and should be protected. Comprehensive safety training techniques will benefit any facility that implements them, starting by keeping employees safe while they work. ■

Jane Marsh covers topics in green technology and manufacturing. She also works as the Editor-in-Chief of Environment.co

Millennials and Training in the Workplace

Let's face it: the world is changing at a breakneck speed. The industrial hygiene industry is not exempt from this fact. Catering to more generations in the workforce than ever before, it can be challenging to find trainings and strategies that appeal to everyone.

Millennials are unique in their perceptions of safety. They've lived through turbulent times, from 9/11 to mass shootings at Virginia Tech and Columbine High School: this has shaped their viewpoints and assigned more value to workplace safety than with previous generations. (APA Survey) Employers must be effective and diligent in conveying a consistent and heartfelt message that appeals to different ethnicities, age groups and learning styles. ([Safety Matters Newsletter](#))

It can be a daunting task, but this article will focus on Millennials as the key to unlocking multiple new learning styles and training perspectives, as they have had to be the most flexible generation entering the today's

workforce. And, most importantly, "Millennials, with their growing numbers in the workforce, will soon take over leadership in OHS positions." ([EKU](#))

GENERATIONAL DIFFERENCES

Here is a quick way to compare the different generations in the workforce today:

Traditionalists: This is the smallest subset of the American workforce, and they were influenced by the Great Depression, the New Deal and World War II. Also called the Greatest Generation, they were able to benefit from jobs with good benefits, vacation time and social security at its height. They value conventionalism and structure, believing that respect is earned.

Baby Boomers: The boomers were shaped by Civil Rights, the Vietnam War, and the rise and influence of television. They share the need for formality with Traditionalists, but also find motivation from the work

they do rather than in praise or rewards. Baby Boomers prefer face-to-face trainings, where they can ask questions directly, like Traditionalists.

Generation X: The "Xers" grew up in a time when there were more dual-income families, single-parent households and children of divorce, so from a young age, they were used to spending part of the day without adult supervision. As a result, they tend to be very independent as adults; dislike micromanagement; and are interested in keeping a healthy work-life balance.

Gen Y (Millennials): This generation is plugged in and connected to social issues and the world around them more than any other generation. They're compassionate and hardworking, but they are used to getting information quickly. Millennials believe that, ideally, employment should align with their personal values. They respond well to trainings that can be viewed at their own pace and access to information in apps and on smart devices.

Generation Z (Post Millennials): This group is known for being anxious, but hardworking employees. They share many traits with Gen Y, but they are entering the workforce even sooner than Millennials; sometimes, even without college credentials. They tend to prefer short, to-the-point, online training that utilizes animation and music.

According to the staff at ACGIH, "it will be difficult for a 'one size fits all' approach with these workers. Each generation will require risk communication that resonates with their own experience and the preferred method of communication." ([IHW](#))



TRAINING TRENDS APPEALING TO MILLENNIALS

There are a few terms/techniques within the industry that appeal to Millennials' learning style. These are the top three being used in the industry today:

MICROLEARNING:

Microlearning provides information in chunks, or “nuggets,” with specific objectives. (EKU) The technique can be offered in any format, but it works best when accessible via smartphone, desktop computer or tablet. The sessions should not run longer than five minutes, as this would defeat the concept of the training.

Part of microlearning's appeal is that it can be used to meet more precise needs. For example, if part of the daily activities for a team of workers was how to properly wear PPE in certain work areas, a manager could set up a microlearning session about that PPE safety. The session would be short and concise, causing minimal interruption in the daily workflow.

Companies like Walmart saw the number of injuries deemed reportable to the U.S. OSHA fell by about half in six months. (EKU) Free course curriculum is being created by companies like EDapp, to fill the need for learning solutions on construction sites. Microlearning is a quick way to train workers and focus on problem areas, seeing results quickly and efficiently.

GAMIFICATION:

Gamification, or the integration of game mechanics and elements into non-game contexts, has been found to engage employees and make safety training fun and memorable. “In gamification, game mechanics are employed outside game contexts in order to motivate people's natural desires for autonomy, competence and relatedness. This unique potential to foster (intrinsic) motivation makes gamification techniques promising for increasing engagement with corporate health programs.” (NIH)

To meet OSHA compliance regulations that mandate in-person safety and compliance training, many companies have turned to gamification because:

- 1. It creates higher levels of engagement.** Who doesn't want to play a game as opposed to sitting through another lecture or seminar?
- 2. Improved retention.** Gameplay has been known to help individuals retain information quicker and longer.
- 3. Connects learning to the real world.** Employees will likely want to remember and practice the things they learned, if the process of learning the information was fun.



4. Provides instant feedback and reinforcement.

Employees get instant gratification from negative and positive reinforcement in gaming scenarios.

5. Gets employees hooked on learning. A new challenge, leveling up and earning points is always a great way to keep people motivated and focused on safety.

VIRTUAL REALITY:

Lastly, there is the VR-based learning approach that appeals to Millennials. VR-based learning realistically simulates workplace scenarios, allowing employees to engage with training beyond traditional teaching methods. It empowers employees and delivers training that is more available and scalable, providing multiple learning opportunities rather than a periodic refresher of the same material.

Most importantly, VR-based learning can help the trainee translate what they've earned into real-life job performance. It also addresses different learning styles, i.e., visual learners, physical (kinetic) learners and verbal learners. This helps to attract and keep a wider range of employees. ■

FURTHER READING/RESOURCES:

<https://www.environmental-expert.com/articles/the-way-ahead-the-future-of-industrial-hygiene-part-2-1022326>

<https://safetymanagement.eku.edu/blog/bridging-the-generation-gap-in-workplace-safety/>

<https://safetymanagement.eku.edu/blog/safety-training-for-the-millennial-generation/>

https://www.360training.com/search?keys=safety+in+the+workplace&search_geo_abbr=IN

<https://www.pewresearch.org/fact-tank/2018/04/11/millennials-largest-generation-us-labor-force/>

https://www.leadingagekansas.org/assets/docs/KING/SafetyMatters/safety%20matters_fall%202016.pdf

Arc Flash Safety Training: Smart Operators Know You're Never Done

By: **Justin Gaull**, Contributor

Smart companies know safety training is never complete. Ongoing training and testing are vital to safe, injury-free operations. Proper training (and re-training) on electrical safety equipment and procedures prevents injuries, protects electrical apparatus from damage, and promotes operational efficiencies. Ongoing training is also a requirement to meet code. NFPA 70E, (the standard for electrical safety in the workplace) Article 110, Section 6 (3), states that “additional training and retraining in safety-related work practices shall be performed at intervals not to exceed 3 years.”¹ The standard also states that training shall be more frequent for certain conditions, including the use of new technology and equipment, procedures performed less than once per year or work practices that are not a normal part of an employee’s regular job duties.

SAFETY SAVES LIVES

Electrical safety is no less important than EMT training for saving lives. Imagine if an Emergency Medical Technician didn’t correctly perform CPR or improperly used their AED (Automated Electrical Defibrillator). What if their chest compressions were positioned incorrectly or if AED pads were applied to the wrong locations? Bad news for that patient. But it doesn’t happen because EMTs continuously train – CPR recertification is required every two years for medical practitioners and first responders. Likewise, what if remote racking or remote switching equipment is applied to a breaker incorrectly? Or if a worker doesn’t read the arc flash warning label and adhere to the appropriate PPE category? If there’s an arc flash incident, that’s bad news for everyone in the area. Exposed energized conductors and arc faults can have mortal

consequences for workers who don’t follow proper procedures.

With the industry adoption of NFPA 70E, “there has been an annual decrease of 76 % in electrical contact fatalities since 1982.” That’s just a few years after the first edition of NFPA 70E.² The use of electrical-safety procedures, energy-reducing technologies and engineered controls, such as remote switching and racking, reduces electrical injuries from shocks and burns.

SCHEDULE TRAINING LIKE YOU SCHEDULE MAINTENANCE

Training works, but it doesn’t happen on its own. You need to create and document a safety training schedule for each employee and for your organization as a whole. Then you can execute to the training and retraining schedule just as you would execute to an equipment maintenance schedule. The training becomes part of your standard operating procedures, your employee reviews/evaluations and your culture.

In addition to ongoing retraining, you need to be prepared with a quick-deploy training program for when employees leave your company or move on to new opportunities. Otherwise, you’re left with a dangerous knowledge gap for safe processes and procedures. As a manufacturer of remote switching and remote racking equipment, it’s not uncommon for our team to encounter scenarios where trained personnel leave and there’s inadequate timely training for the new person



or team. With that training gap comes an increase in job safety hazards.

SAFETY EQUIPMENT ONLY PROTECTS WHEN PROPERLY USED

Remote switching or racking equipment can save lives, stave off injury, and prevent an accident from becoming a tragedy – but only when applied and set-up correctly. That’s why training is vital. Workers need to understand and precisely adhere to safe-distance and PPE requirements. They must know how to read arc flash labels and how that information applies to their personal and team safety. They need to understand the correct procedures and sequence to attach and operate safety devices, like remote switching and racking

¹ National Fire Prevention Agency. NFPA 70E Handbook for Electrical Safety in the Workplace 2021. 2020

² Coache, C. Website. (2019, December 04) A Better Understanding of NFPA 70E)org. <https://www.nfpa.org/news-and-research/publications-and-media/blogs-landing-page/nfpa-to-day/blog-posts/2019/12/04/a-better-understanding-of-nfpa-70e-electrical-contact-fatalities>

equipment. For example, when using remote racking equipment (in certain applications) on circuit breakers, it's possible to over-torque a breaker's racking mechanism during the racking sequence – a risk that can be mitigated with the proper training and equipment application.

TAP INTO YOUR SUPPLIERS' KNOWLEDGE BASE

A best practice for spot-on training and safe equipment use is to have new employees receive equipment and task training by the OEMs (Original Equipment Manufacturer) of your electrical safety devices. Most manufacturers offer it. We conduct several for our customers each week. Nobody knows the equipment better than the team that designed and built it. Plus, OEMs have already created and fine-tuned training programs that cover all the features and incorporate what they've learned through years of conducting trainings. It's what they do every day.

EFFECTIVE TRAINING IS A LIFELONG PROCESS

Just like EMTs who continually train to save lives, electrical workers need ongoing periodic safety training to prevent potentially life-changing events. Fortunately, it's not difficult to make sure electrical safety knowledge and procedures are refreshed on a regular basis and in accordance with NFPA 70E standards. Create your schedules, conduct the trainings, call in OEMs to help when appropriate – it will become part of your company's standard procedures and your culture. EMTs save lives after a tragic event. A robust training and retraining program saves lives by preventing tragic events. Train and be a lifesaver. ■



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