WELCOME TO HARD HAT TRAINING!

Welcome to the Hard Hat Training Series. Today, we will be conducting the HAZWOPER 24-hour course. This training will provide you with the information needed to keep you up to date on the HAZWOPER training standards. Additionally, it will help you maintain your knowledge and understanding of how to safely manage hazardous materials.

HAZWOPER: A History

We have been using hazardous materials for manufacturing, cleaning, and a wide variety of other purposes for a very long time. However, for a nearly equal amount of time, the hazardous waste left over from these processes was haphazardly dumped or abandoned wherever people found it convenient.

Beginning in the 1940s with the advent of the nuclear bomb and changes in manufacturing, the amount of hazardous waste being produced began to increase drastically. By the early 1970s, industries in the U.S. were already producing around 57 million metric tons of hazardous waste per year, much of which was unregulated.

In 1976, the federal government stepped in and declared that something had to be done to reduce the amount of hazardous waste being poured into the environment. Consequently, the first hazardous materials monitoring plan was written and passed by Congress.

RCRA

The plan was known as the Recourse Conservation and Recovery Act, or RCRA, for short. As hazardous waste continued to develop at an ever-increasing rate, RCRA was passed to help regulate individual industries' management of their hazardous waste from the time it was generated to when it was disposed of either on or offsite.

RCRA gives the Environmental Protection Agency (EPA) authority to control hazardous waste from the "cradle to the grave." This includes generation, transportation, treatment, storage, and disposal of hazardous waste. In addition to this, RCRA also established a framework for the management of non-hazardous solid waste.

RCRA was effective at controlling and monitoring new waste, but it didn't do much to deal with other serious hazardous waste issues, namely what had been generated before 1976.

CERCLA

In 1980, the Comprehensive Environmental Response, Compensation, and Liability Act was passed and became known as CERCLA. This helped to remedy past hazardous waste issues.

In short, CERCLA regulates and enforces the cleanup of hazardous waste sites that were created or abandoned prior to RCRA. This was and is vitally important to both human and environmental health, as hundreds of tons of hazardous waste had been improperly disposed of in recent history.

HSWA

HSWA, or the Federal Hazardous and Solid Waste Amendments, came next. These were a series of amendments to RCRA passed in 1984 that focused on minimizing waste and phasing out its land disposal. Additionally, corrective action for release was specified.

Other mandates of this law include increased enforcement authority for the EPA, more stringent hazardous waste management standards, and a comprehensive underground storage tank program.

SARA

Although, by this time, RCRA had been amended several times and was already improving the management of hazardous waste, there were other issues that had not fully been addressed. In 1986, SARA, or the Superfund Amendment and Reauthorization Act, was passed. SARA once again amended RCRA, making it more all-encompassing and further reducing environmental impact.

SARA stressed the importance of permanent remedies, amplified state involvement, and increased the size of the trust fund to $8.5 billion. It also formed regulations meant to protect hazardous materials workers.

HAZWOPER

SARA provided some guidelines for protecting hazardous materials workers and helped set the groundwork for what we know today as HAZWOPER, or the Hazardous Materials Operations and Emergency Response. HAZWOPER became law in 1990 and set specific standards in place that focused almost entirely on the safety of the worker.

The creation of hazardous materials training involved a joint effort between OSHA, the US Coastguard, the EPA, and NIOSH. These organizations worked together to standardize the requirements for dealing with hazardous waste cleanup and emergency response situations. The resulting continuity between the organizations made it easier to address hazardous situations, reducing response times and making cleanup efforts more efficient and safer for those involved.

Hazardous material training's major purpose is to protect workers engaged in hazardous waste cleanup and emergency response operations by providing safety standards and training requirements. This means that it is meant to aid you, as the worker, and help protect your safety and health. It can be easy to look at regulations and view them as annoying and restrictive, but realistically, such standards can and do save lives and protect our environment.

STANDARDS

29 CFR 1910.120- HAZWOPER standards general industry

29 CFR 1926.65 – HAZWOPER standards for construction (identical to 1910.120)

1910.120(e)(3)(i)- 40 hour training, general

1910.120(e)(4)- 40 Hour training for managers and supervisors

1910.120(e)(3)-(4)- 24 Hour training, general

1910.120(p)(7)(i)- Training for new employees

1910.120(e)(8)- Refresher training

The codes above address the training requirements for hazardous materials workers outlined in the hazardous materials standards. The training you are taking today will address these standards in their entirety and meet the requirements outlined in CFR 29 1910.120 and 1926.65.

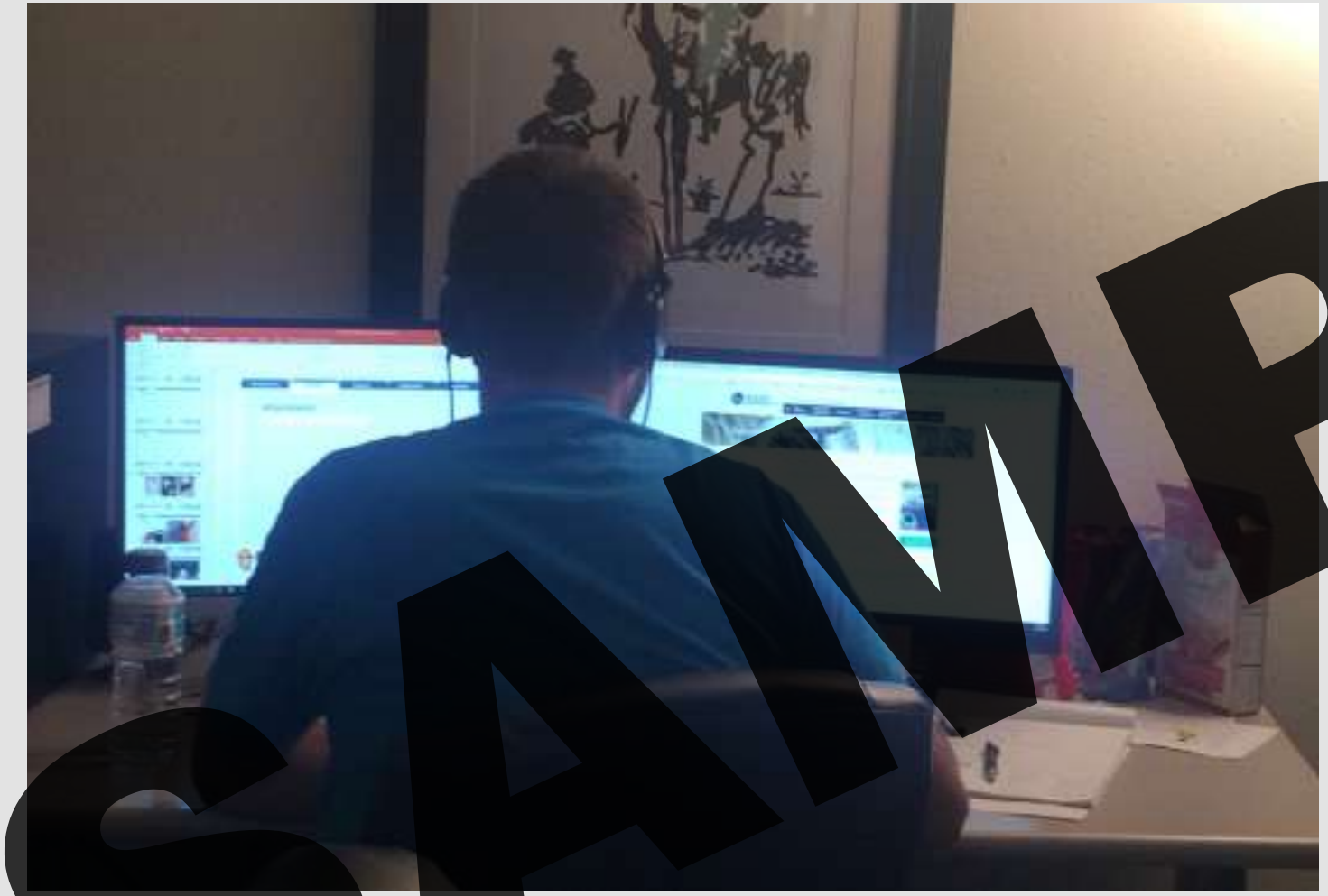
Training

Hazardous materials prep is more than just a set of regulations; it is a training requirement. All workers who fall under such standards are therefore obligated to receive certain levels of training. This training comes in the form of a 40-hour course, a 24-hour course, and an 8-hour refresher course, which is what you are taking now.

The hazardous materials 40-hour course is designed for managers, people who work with hazardous materials on a regular basis, or individuals who are exposed to hazardous substances that exceed the limits outlined in OSHA 29 CFR 1910.1000, known as the Z Table. This course also requires three days of supervised, hands-on field experience in addition to the 40-hour classroom portion.

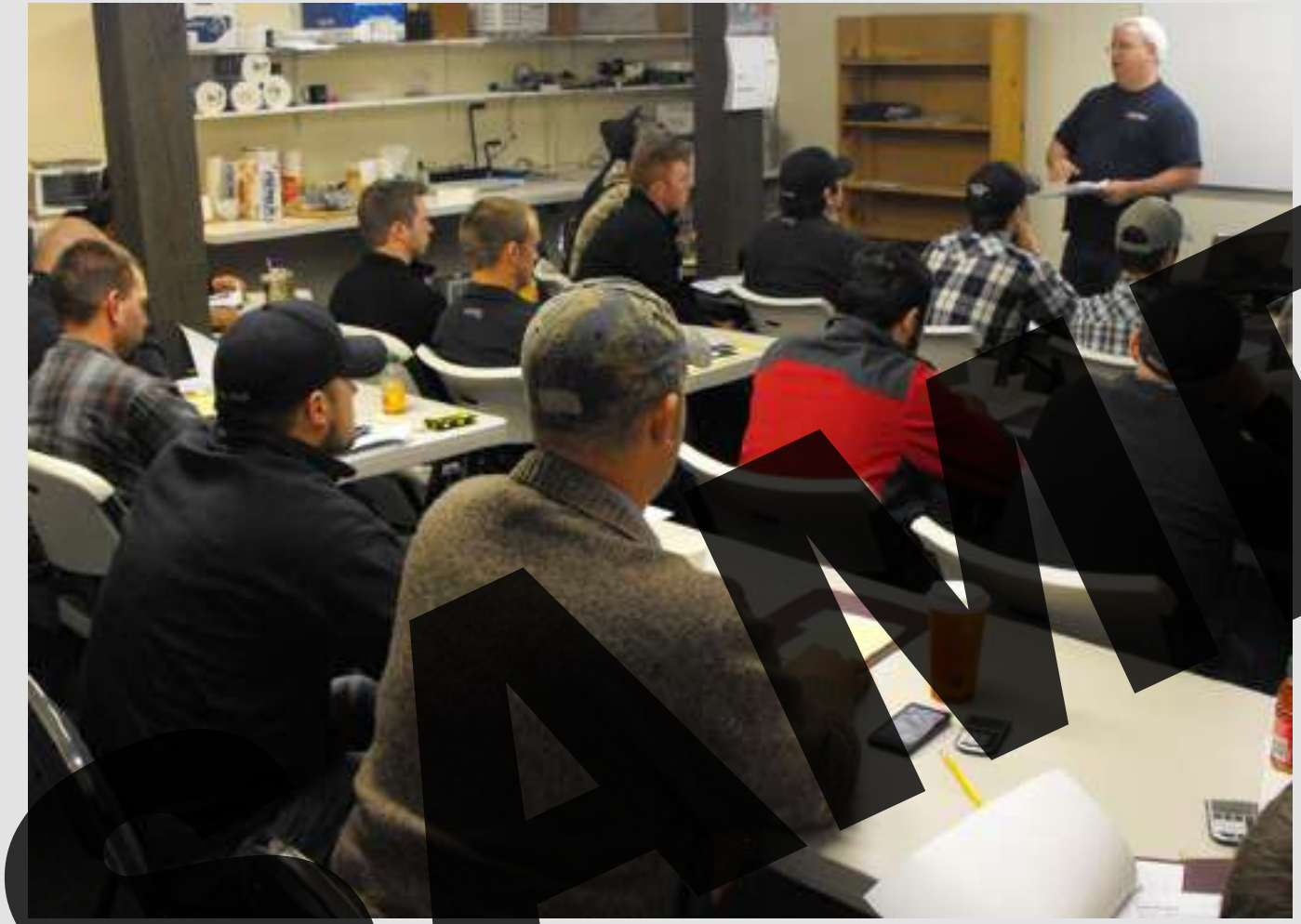
The 24-hour course is intended for the individuals who will only occasionally come in contact with hazardous substances or who will be working at contaminated sites without exposure to hazardous substances at or above the permissible limits in the Z Table. This course will also require at least one full day of supervised field experience in order for you to be deemed certified.

The 8-hour refresher course must be taken annually by those who have completed a 24 or 40 course. This training will cover much of the same material in a condensed form, with little or no hands-on training required.



As mentioned, a refresher course must be taken every year. So, what happens if you do not complete the refresher course within 12 months of your previous training? Do you lose your certification and have to redo the 24 or 40 hour course?

According to OSHA, “If the date for refresher training has lapsed, the need to repeat initial training must be determined based on the employee's familiarity with safety and health procedures used onsite. The employee should take the next available refresher training course. There should be a record in the employee's file indicating why the training has been delayed and when the training will be completed.”



So, to answer the original question, maybe. If the employer deems your knowledge sufficient and there is a viable reason you were late on your refresher, then you will likely be okay, so long as you keep a record stating why you missed the deadline. However, you may be required to retake the 24 or 40-hour course if you have gone far beyond the refresher date or if you are not able to meet the criteria mentioned.

Additional Training

Though hazardous materials training is extensive and must be readdressed on a yearly basis, it is not the final word on all preparation. There will likely still be further groundwork needed in order to be in compliance.

It is common to hear workers state that they already have experience and, therefore, do not need additional training. However, regardless of your experience or past training record, additional preparation may be needed. It is required by law that all individuals who work with chemicals or other hazardous materials receive training on safety plans, hazard communication, and hazardous materials specific to their site or position.

An employer is responsible for the safety of their workers and may require additional training and retraining on hazardous materials topics. Take a moment to read below for a list of common factors that may constitute a need for additional training.

Additional training may be required:

- Before workers are first assigned duties relating to working with or around chemicals, or before there is a change in assigned duties
- Whenever a new chemical is introduced into the workplace
- Whenever there is a change in operations that presents a hazard or potential exposure about which training has not occurred
- In case of an accident or anytime an employee is injured or nearly injured during operations
- Or whenever an employer deems it necessary or has reason to believe there are deviations from their HAZMAT program and procedures or that there are inadequacies in an employee's knowledge or application of those procedures

Beyond hazardous training, which has set information and a required length, the extent of any additional preparation is to be determined by the employer. At the very least, additional training should include classroom instruction, followed by a written and practical examination that proves continued competency.

Who is This For?

HAZWOPER isn't for everyone. Though anyone can take HAZWOPER, it is only required for people in certain industries and doing certain jobs. For many, a basic training on hazardous materials will be sufficient. Let's take a moment to talk about just who is and is not required to take the HAZWOPER training.

Did you know?

The first semblance of a HAZ suit developed in the mid 1300s during the out break of the bubonic plague in Europe. The suits were intended to protect doctors from the plague stricken patients they were attempting to treat.

At its most basic, HAZWOPER is intended for those whose jobs will expose or potentially expose them to hazardous substances or health hazards. This includes, but is not limited to:

- High concentrations of toxic substances
- Immediately Dangerous to Life and Health (IDLH) environments
- Situations that present an oxygen-deficient atmosphere
- Conditions that pose a fire or explosion hazard
- Situations with a high potential for an evacuation of the area
- Situations that require immediate attention because of the danger posed to employees in the area

Though it never hurts to train above and beyond the minimum, not everyone is required to take HAZWOPER, even if you work with or around chemicals or other hazardous materials. The following slides will explain a few common instances where HAZWOPER is not required.

You do not need HAZWOPER if you will only be dealing with incidental releases that are limited in quantity and pose no safety or health threat to employees working in the immediate vicinity of the spill. This is only if the incidental release does not have the potential to become an emergency within a short time.

A lot of confusion often circulates around the medical field and HAZWOPER. Medical personnel are required to have some form of training in HAZMAT, though HAZWOPER is not required for all individuals. It is generally only for those who may be dealing with large quantities of hazardous materials or who are responsible for hazardous materials emergency response.

If you work for a large quantity generator (LQG) with a spill response plan that requires all employees to evacuate the premises in case of an accidental spill or emergency, and that the fire department or a spill response company will deal with the spill's containment and remediation, you may be exempted from HAZWOPER training.

If you change jobs or positions and are unsure if HAZWOPER training is necessary at your new position, you should consult your site safety professional. You can also easily contact OSHA or consult the HAZWOPER standards found in 29 CFR 1910.120 to get answers. Remember, it is always better to err on the side of caution when it comes to deciding whether HAZWOPER training will be necessary.

Training Outline

Now that we have some background in where HAZWOPER came from, what it does, and who it is for, let's briefly address some of the topics we will be covering throughout the rest of today's presentation.

Regulations and Overview

We will begin by discussing regulations and go through a brief overview of the history of OSHA and NIOSH, as well as the industries they cover. We will discuss employer responsibilities, worker rights and responsibilities, and some HAZWOPER standards.

Site Characterization

We will discuss what site characterization is and why it is important. We will address preplanning for site-specific hazards and how you can recognize and mitigate these hazards before they become a problem. We will also address site controls, site zones, and support zones.

Drum Handling

We will take some time to talk about drum handling. This will include briefly going over ergonomics, inspections and planning, and procedures for specific containers, as well as sampling and proper storage.

Confined Spaces

We will address what a confined space is and how to test for hazardous environments/atmospheres within a confined space. We will also talk about operations and rescue within a confined space.

Hazard Recognition

Here, we will discuss the various hazards that the worker needs to look out for: chemical, physical, biological, and environmental. We will touch on SDS sheets, labeling, and general hazard communication. We will also talk about OSHA focus on four hazards, such as fall protection.

Excavation

We will address the use of excavation in hazardous waste locations. This will include information on the safe operation and waste management of earth-moving machinery, as well as basic trench safety for those who may be working in excavation areas.

Toxicology

In this section, we will learn about toxicants by route of exposure, effects on the body, types of toxicity, OSHA exposure standards, and methods of protection. Signs and symptoms of some toxicants will also be discussed to help hasten identification and first aid for those who have been exposed.

Personal Protective Equipment

We will cover what is required in a PPE program, the types of PPE (eye/face, respirators, body/skin, foot protection, etc.), and the different levels of protection and what those levels include. We will cover inspections, fit testing, storage, and maintenance. Lastly, we will discuss various hazards relating to PPE (permeation, degradation, heat/cold, etc.).

Air Sampling

We will take time to talk specifically about air sampling. We will address the various types of air sampling, when and how to sample, how to calibrate pumps, and how to read the results.

Decontamination

This section will cover the process of removing or neutralizing hazardous materials that accumulate on workers and equipment. We will discuss proper decontamination, evaluation, and standard operating procedures, as well as how to implement them into safe work practices.

Medical Surveillance

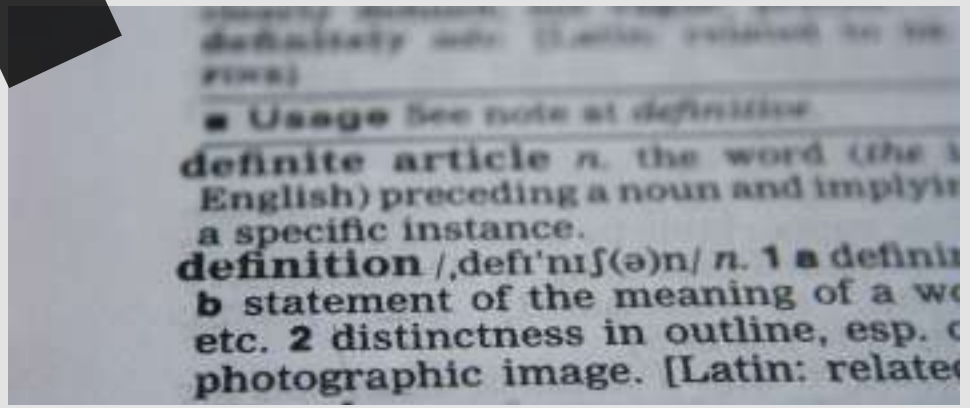
This section will cover assessing individuals for adverse health effects and how to to determine the effectiveness of exposure prevention strategies. We will discuss developing a site-specific medical program, pre-employment screening, medical treatment, recordkeeping, and frequency of medical checkups.

Emergency Response

Lastly, we will discuss pre-planning for an emergency, which entails creating an emergency response plan, designating response personnel roles, and mapping the worksite. We will also briefly cover procedures meant to minimize harm to people, property, and the surrounding environment. These procedures include evacuation, emergency decontamination, emergency first aid, emergency medical treatment, spill response, and fire suppression.

Hazard Definitions

Before we go on, let's address some of the definitions for "hazards" that will be used at times throughout today's training. Hazardous waste, hazardous substances, hazardous chemicals, and hazardous materials all may sound similar, but they are defined somewhat differently. Understanding these differences now will help you to better understand all sections of this presentation.



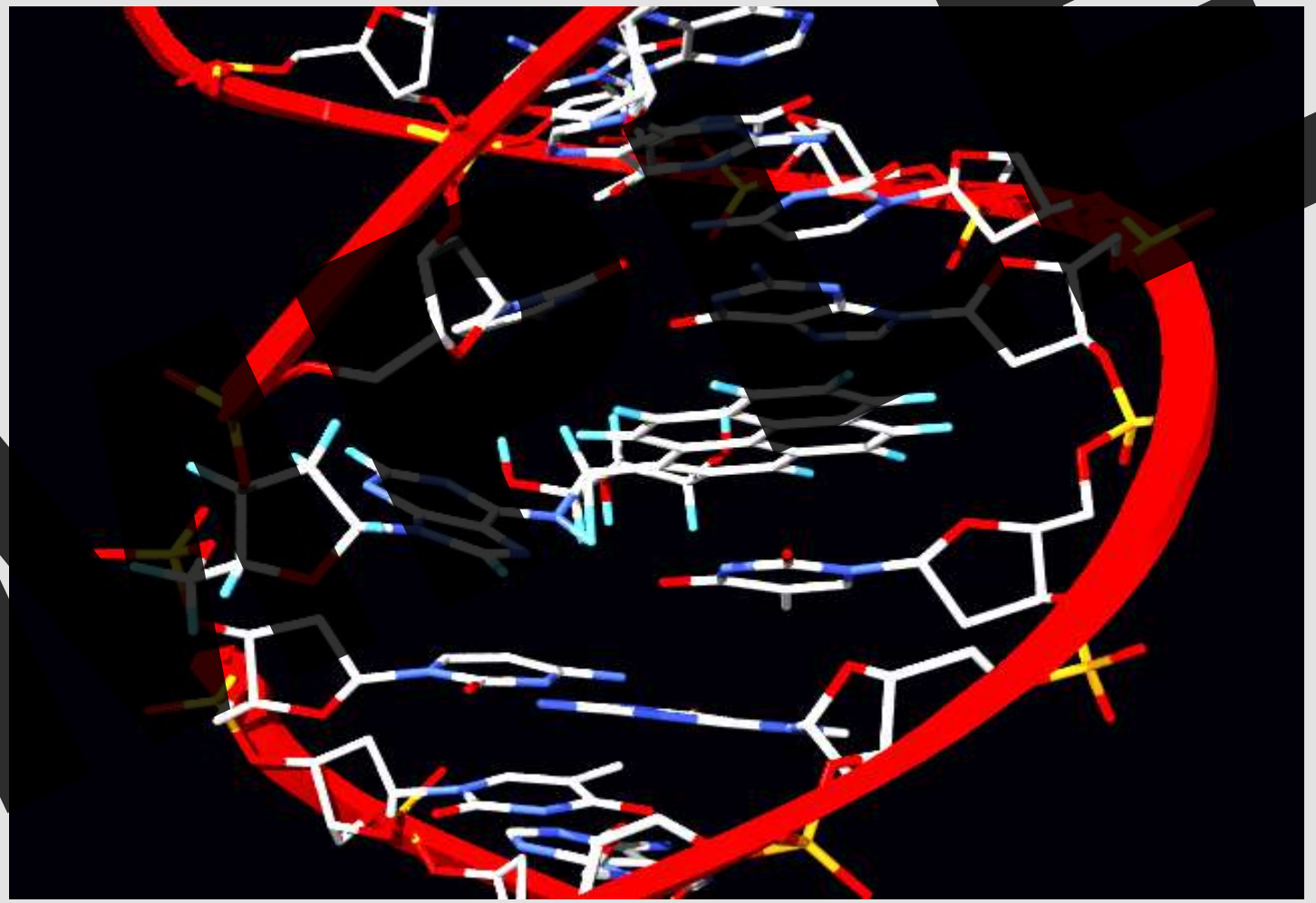
Hazardous wastes are defined as substances that have no commercial value, are ignitable, corrosive, reactive, or toxic, and are capable of causing substantial threats to human health and the environment.

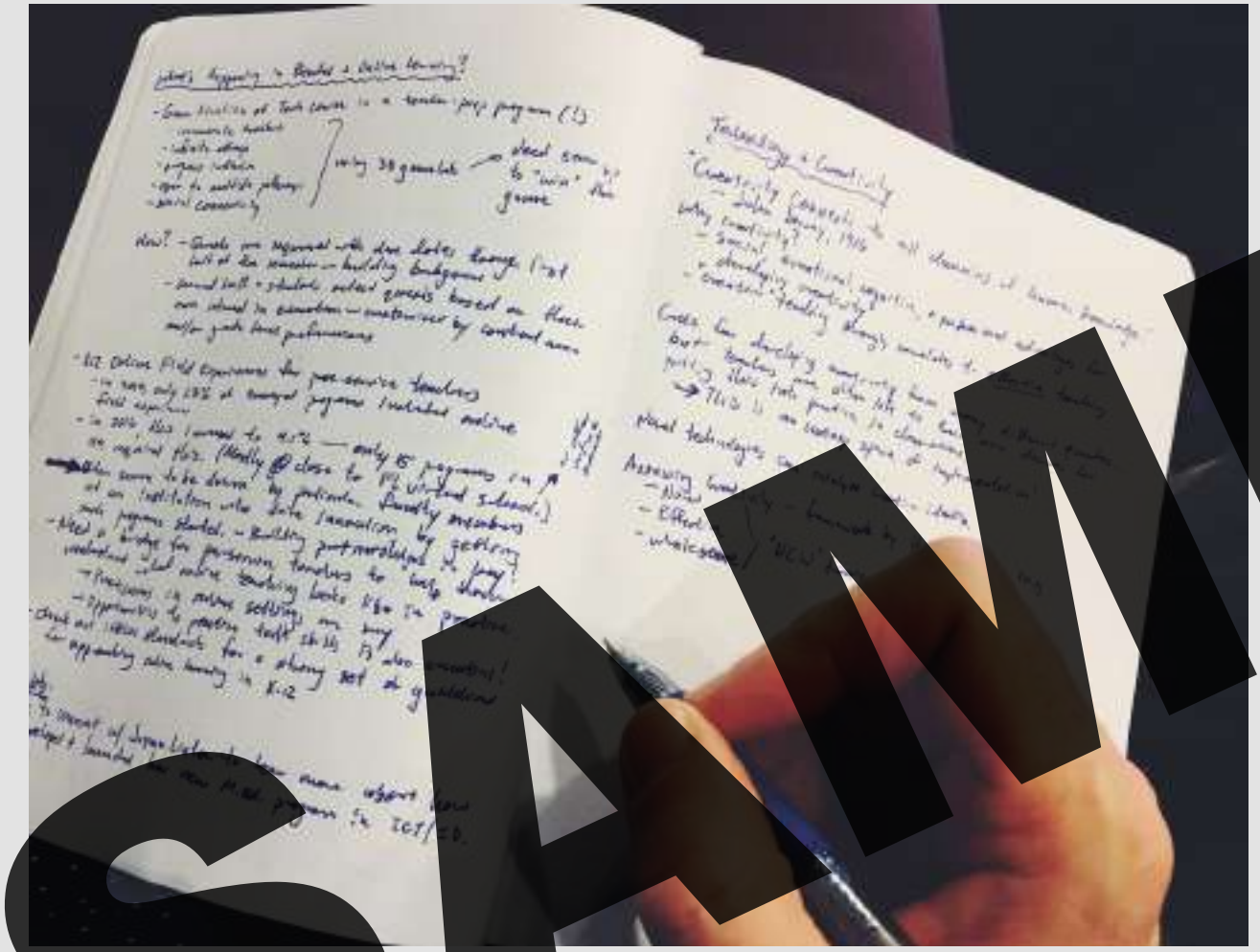
Hazardous substances are materials determined by the EPA to present potentially serious danger to the environment.

Hazardous chemicals are those that are harmful to people in the workplace or the community if released, as determined by OSHA.

Hazardous materials are those which can present a danger during shipment by truck, rail, air, or water, as determined by the Secretary of Transportation.

Other more specific definitions will be addressed in their corresponding sections throughout the duration of this presentation. For instance, the term **mutagen**, which is a toxicological term, will be defined in the section on toxicology.





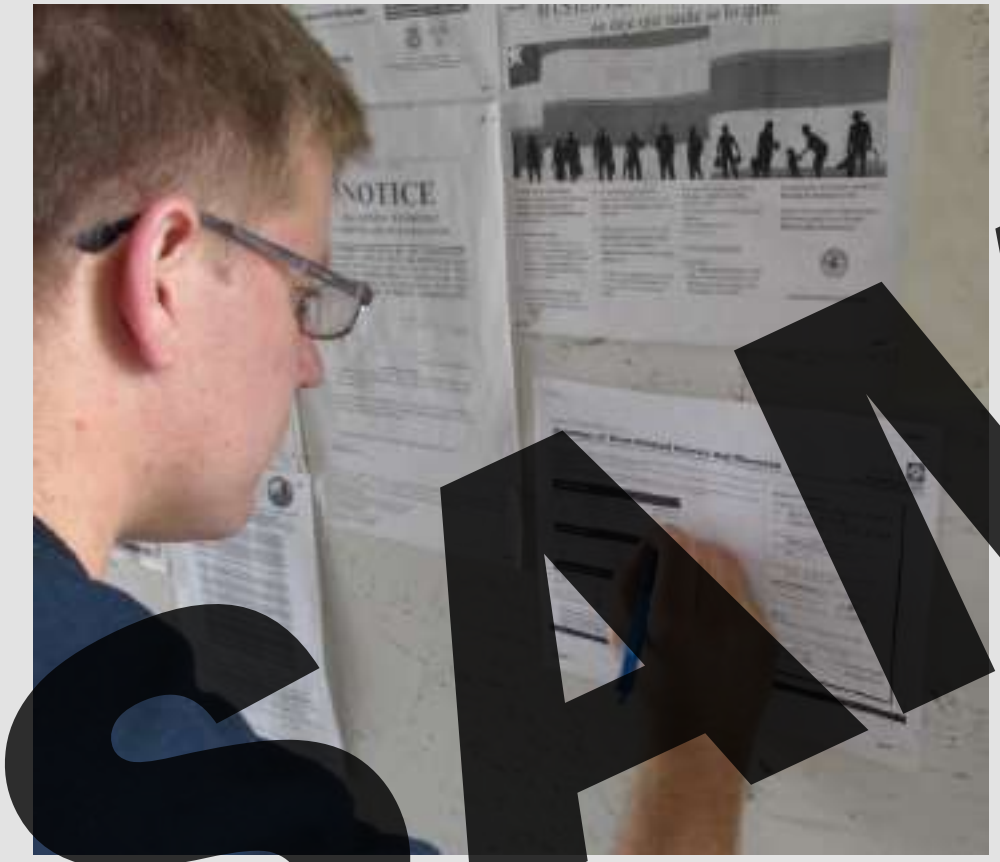
Going Forward

As we navigate the rest of today's training, remember that HAZWOPER is meant to protect you, the worker. The more effort you put into understanding HAZWOPER principals, the safer you will be when on a worksite. Please feel free to take notes, and take the time needed to fully understand the materials we discuss. Good luck and stay safe!

Regulations and Overview

In this section of the training, we will go over the importance of government regulations and entities, such as The Occupational Safety and Health Administration (OSHA) and the National Institute for Occupational Safety and Health (NIOSH). We will discuss why they exist, which industries they regulate, and the standards they put in place.

We will discuss what rights workers have under the OSH Act, as well as their responsibilities. We will also cover employer duties for keeping workers safe.



OSHA and NIOSH

First, let's learn a little bit about the governing bodies that oversee worker safety. In this section, you will learn about OSHA and NIOSH, and the roles they play in keeping you safe.

OSHA®

NIOSH

To understand why OSHA and NIOSH were created, consider the following statistics:

- Almost 5,200 workers are killed annually.
- On average, 14 workers die every day.
- Nearly 800 Hispanic or Latino workers die annually.
- Close to 3 million serious workplace injuries and illnesses are reported annually.

	STANDARD	VIOLATIONS
1	Fall Protection (1926.501)	5,635
2	Hazard Communication (1926.1200)	3,544
3	Scaffolding (1910.451)	3,535
4	Lockout/Tagout (1910.147)	3,414
5	Respiratory Protection (1910.134)	2,421
6	Ladders (1926.1053)	2,365
7	Machine Guarding (1910.212)	2,147

While these statistics are much higher than anyone would like, there has been much improvement since OSHA was organized in the 1970s. For example, nowadays, an average of 14 workers die each day, but in 1970, close to 38 worker deaths occurred each day. This is due, in no small part, to the regulations put in place and enforced by OSHA.

History of OSHA

OSHA was formed through the OSH Act of 1970, which was signed into action by President Nixon. OSHA was formally introduced on April 28, 1971, with the responsibility of improving workers' safety and health on the job.

Mission of OSHA

OSHA, like most companies, has a mission statement that specifies what their goals are. OSHA's is "to assure safe and healthful working conditions for working men and women by setting and enforcing standards and by providing training, outreach, education, and assistance."

OSHA is able to accomplish this mission by developing workplace safety and health standards. They also provide training programs that are intended to increase knowledge about workplace safety and health and bring awareness to the hazards that affect the lives of many workers each year.

NIOSH

NIOSH is responsible for conducting research into work-related injury and illness. It acts as part of the Center for Disease Control and Prevention (CDC), which operates within the U.S. Department of Health and Human Services. It was created alongside OSHA when the OSH Act was signed into effect.

NIOSH's Mission

Although it isn't a regulatory agency like OSHA, NIOSH makes recommendations based on research that OSHA then converts to enforceable standards and regulations. It oversees the safety of workers in every industry, from agriculture to retail. NIOSH helped develop the HAZWOPER standard, in conjunction with OSHA and the EPA. With that in mind, the next several slides will explain OSHA standards and the HAZWOPER standard in more detail.

OSHA Standards: An Overview

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What are OSHA Standards?

Since we have discussed what OSHA does, let's now take a look at what OSHA standards are and what they are designed to do. An OSHA standard is a rule that describes how employers must protect employees from hazards, whether it be through safe work practices or PPE.

In order to organize the variety of jobs, OSHA has four classifications with standards specific to each in order to best protect workers. Those classifications are:

- General Industry (CFR 1910, contains the largest number of workers)
- Construction (CFR 1926)
- Maritime (CFR 1915, 1917, 1918)
- Agriculture (CFR 1928)

If, for some reason, there are no specific standards relevant to the work being performed, employers must comply with the General Duty Clause of the OSH Act. The General Duty Clause is Section 5(a)(1) and is written out in the image below. Simply put, employers must ensure their employees have a safe work environment and do whatever is necessary to protect them from hazards.

General Duty Clause

Each employer:

(1) shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees; (2) shall comply with occupational safety and health standards promulgated under this Act.

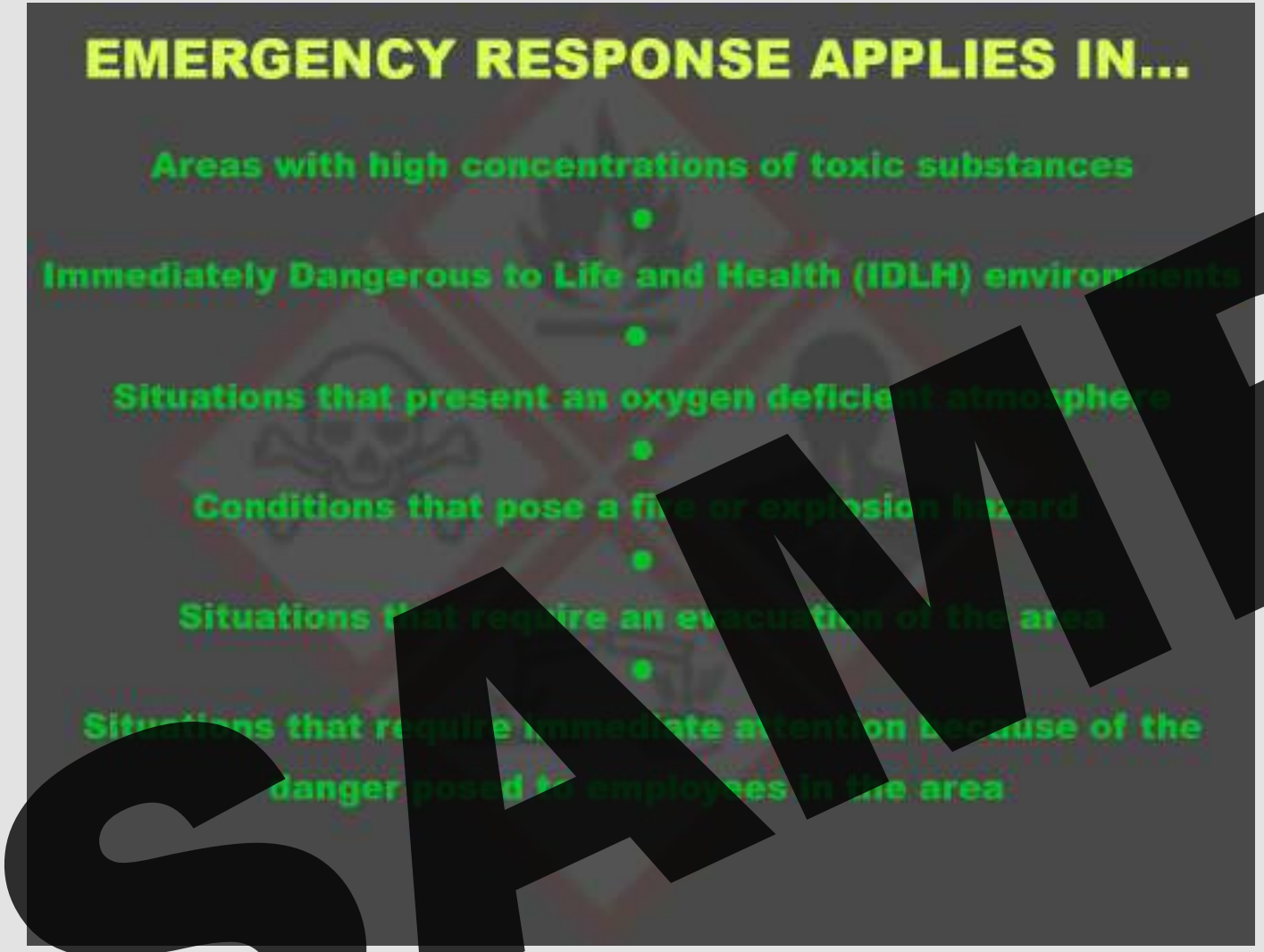
Each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act which are applicable to his own actions and conduct.

OSHA standards do a few more things, as well. They limit the amount of hazardous chemicals, substances, or noise workers can be exposed to without causing harm to themselves or others.

OSHA standards also make it mandatory that specific work practices be put in place when performing certain tasks or using certain equipment. Employers should instruct employees on any and all OSHA standards that apply to their specific field or tasks.

HAZWOPER Standard

As we discussed earlier, the HAZWOPER standard was enacted to protect workers while they handle hazardous substances. It provides employers, emergency response workers, and other personnel with information and training criteria.

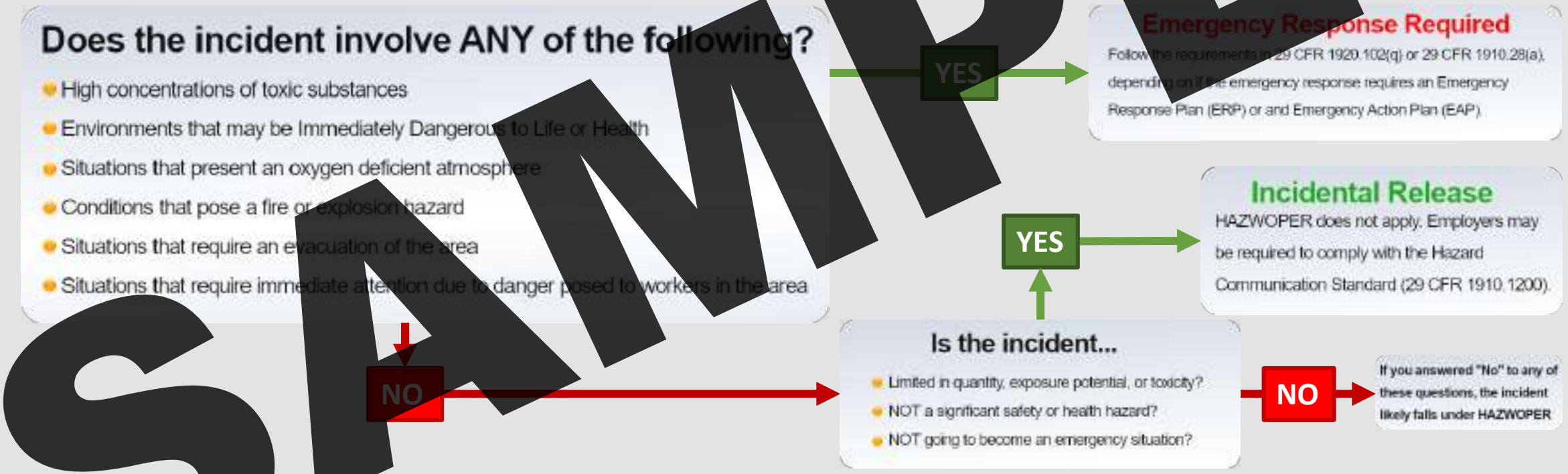


HAZWOPER applies to situations where there is an uncontrolled release of a hazardous substance, or when an uncontrolled release is likely. That being said, there are five types of operations that fall within the scope of the HAZWOPER standard. We have listed them below, and will cover them in more detail later:

- Cleanup
- Corrective actions
- Operations at Treatment, Storage, and Disposal Facilities (TSD)
- Operations not at TSD facilities
- Emergency response operations

When HAZWOPER Doesn't Apply

As mentioned earlier, the HAZWOPER standard doesn't apply when the quantity of hazardous material is limited and doesn't pose a significant threat to the health and safety of workers in the area. These situations are referred to as "incidental releases." They are limited not only in quantity and exposure potential, but toxicity, as well. Additionally, they don't have the potential to become emergencies within a short amount of time.



Conflicting or Overlapping Standards

It should be noted that if the HAZWOPER standard overlaps or conflicts with any other OSHA standards, the standard that offers the most protection to employees must be followed. If action onsite is considered an Emergency Response, then employers must comply with HAZWOPER and all other applicable General Industry and Construction Industry standards. We'll discuss Emergency Response situations in more detail later in the training.

Employer Responsibilities