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Alyami, Mubarak R. ***Development and Implementation of an Emergency Response Plan at Company XYZ Specifically for Impaired Employees***

Abstract

The primary objective of this study was to investigate the best way to develop and implement an emergency response plan at Company XYZ that effectively incorporated the needs of employees with disabilities. The researcher began with a thorough review of the rules, regulations, and recommendations that apply to emergency response plans. The next key part of the study was evaluating the current emergency programs and policies at the company in order to determine what improvements were needed. The evaluation consisted of interviews with managers, reviews of documents, discussions with the safety manager, observations of recorded drills, and a tour of the facility. All data were analyzed qualitatively and compared to the regulations and recommendations from the literature to identify any deficiencies. The author identified some possible controls and procedural changes to improve and implement an emergency response plan at Company XYZ specifically for impaired employees. Recommendations and conclusions were made on how to have and implement an adequate emergency plan.

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Chapter I: Introduction

Risk is a part of life. For companies, risk can lead to costly consequences such as loss of profit, reputation, or even human life. Employees are particularly vulnerable because they depend on preparation, training, and plans from the management level, which may or may not be committed to safety or may have inadequate measures in place. During recent decades, many companies in the United States have increased their commitment to reducing workplace risk and improving emergency plans as they recognize that creating adequate and effective emergency plans will increase the chances of survival for employees and the public as well as reduce the probability of property loss or business downtime. Today, risk management is an essential goal for many organizations in the United States. However, some populations of employees, such as those with disabilities, may be at greater risk because their unique needs may not always be considered during risk management planning. Journalist David Perry (2017), who covered the plight of people with disabilities during Hurricane Harvey, explains that "Disability acts as a multiplier, intensifying risk from both natural and human forces" (para. 1).

According to the United States' Department of Labor (DOL), a disabled person is defined as someone who "has a physical or mental impairment that substantially limits one or more major life activities" (U.S. Department of Labor [DOL], Office of Disability Employment Policy, n.d., p. 1). A more detailed definition comes from the *United Nations Convention on the Rights of Persons with Disabilities*, which states that "persons with disabilities include those who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others" (United Nations, 2006, p. 4). The definition used can affect the way we measure disability in the world. The World Health Survey states that around fifteen percent of the world population are

identified as having some form of disability, and that number typically averages around 11 percent for highly developed countries (as cited in World Report on Disability, 2011). However, the U.S. Census Bureau (2012) reports that 19 percent of the U.S. population (56.7 million) had disabilities in 2010. People with disabilities are a minority, but still from a significant portion of our population.

While people with disabilities are often thought of as unemployable or undesirable as employees, they can often perform as well as and be more dependable than non-disabled employees (Unger, 2002). The World Report on Disability (World Health Organizations, 2011) explains that "people with disabilities often have appropriate skills, strong loyalty and low rates of absenteeism, and growing numbers of companies find it efficient and profitable to hire people with disabilities" (p. 236). While workers with physical disabilities are found in all types of workplaces, workers with intellectual or developmental disabilities are often employed in vocational rehabilitation programs or sheltered work programs. Although these programs are designed to benefit the lives of individuals with disabilities, they also put them at risk. The National Institute of Occupational Safety and Health (NIOSH) reports that employees in vocational rehabilitation programs have a 60 percent higher rate of workplace injury than general work settings. One reason is the type of work these workers perform is often more hazardous, such as manufacturing, assembly, recycling, and warehouse work. Another reason is that they rarely have health and safety training in their employment, or the training is insufficient and ineffective because "it does not teach workers the skills they need to assess new environments and to problem solve when the situation or task changes, or when something unexpected happens" (Centers of Disease Control and Prevention [CDC]; The National Institute of Occupational Safety and Health [NIOSH], 2016, p. 1).

One vocational rehabilitation company with a large population of employees with disabilities is Company XYZ, a non-profit manufacturing and service company that was started almost 60 years ago. The company's mission is to be a successful enterprise that offers purposeful employment opportunities and career services for individuals with disabilities or disadvantages. The company employs over 300 individuals on a full/ part-time basis, and they range from 18-89 years old. Company XYZ currently has various jobs within the following departments: food preparation, upholstery and sewing, custodial, shipping and receiving, woodworking, packaging and assembly, pizza facility, and print shop. These departments have been added over the years as the company has grown and developed. Likewise, the facility has been expanded and reconfigured to meet the needs of the departments. Each department has distinct risks, and since they are housed within one facility, a problem in one department could quickly affect the entire operation.

While Company XYZ has had a safety manager for many years, the company lacks a comprehensive emergency response plan that takes into account the various risks of the departments and the unique needs of its working population. Another factor adding to the risk is the large volume of people circulating through the company during its open hours Monday through Friday, including employees, visitors, customers, and sponsors. There is potential risk for all these people in the company if there is not an effective emergency plan or inadequate training and implementation of the plan. A proper emergency plan would decrease the likelihood of injuries and protect the company from loss.

Statement of the Problem

Company XYZ is unique in its mission to employ workers with disabilities and disadvantages, and these workers have special needs regarding safety and risk management. The

challenge is to determine the most effective way to develop an emergency plan, conduct training, and ensure compliance with safety policies. While some safety procedures exist, they are outdated and incomplete.

Purpose of the Study

The purpose of the study is to identify how to develop and implement an adequate and effective emergency response plan at Company XYZ that is inclusive and accessible for employees with disabilities. This process consists of four parts: 1) Evaluate the company's current emergency plans, policies, and procedures; 2) Create a comprehensive emergency response plan accounting for employees with disabilities; 3) Implement the plan with appropriate emergency response plan training; and 4) Plan for regular assessment of the plan and training.

Assumptions of the Study

This study makes the following assumptions during the course of this research:

1. Company XYZ will continue to use the current facility and arrangement.
2. Company XYZ will continue to operate the current departments without any substantive changes.

Definition of Terms

The following terms are defined in order to have a shared understanding throughout the research paper:

Emergency response plan. A plan that details the first actions to control a workplace emergency, including coordination of services. It could involve personnel, agencies, or both to respond to an emergency as quickly as possible.

Hazard. Any condition or situation that could cause harm to people, facilities and the environment.

Potential risk. The possibility of death, long term/ short term injury, incident, or property loss that causes harm to an organization.

Risk. The probability that an existing hazard will happen.

Risk analysis. A process that is used to assess risk by using a variety of information such as likelihood, frequency, and severity.

Workplace emergency. An unanticipated situation that occurs in the workplace and causes threats to employees, customers, business or the public; or causes environmental damage.

Limitations of the Study

This study concentrates on Company XYZ's emergency response plan for employees with disabilities. Therefore, information that is specific for Company XYZ may not be applicable or generalizable to other companies. The other limitations of the study to consider are:

1. The interviews and discussions are voluntary, potentially affecting the response rate and the amount of information obtained.
2. In an attempt to be as comprehensive as possible, employees with disabilities are primarily discussed as one group without noting their very distinct needs. This limits, for example, the amount of focus on physical disabilities versus intellectual or developmental disabilities.

Methodology

This chapter has presented the need for an emergency response plan that addresses the needs of employees with disabilities. In the second chapter, an in-depth literature review will provide an overview of the literature related to emergency response plans and will examine why and how to develop an adequate emergency response plan to achieve a high level of safety preparation for all employees. The third chapter will present the data-collection methods used to

obtain information from various sources at Company XYZ, including interviews with current company management, discussions with the safety manager, observations of recorded drills, and a tour of the facility. The fourth chapter will provide the results of the study. In the final chapter, the study will use the results to make conclusions about the current safety planning and training at the company. Ultimately, based on the literature review and the conclusions, the study will provide recommendations to Company XYZ about how to develop and implement an emergency response plan for employees with disabilities.

Chapter II: Literature Review

In order to achieve the goal of developing and implementing an effective emergency response plan for Company XYZ, it is important to look at how and why the concept of emergency response has evolved over time. In examining the history, evolution, and current regulations of emergency response plans, we will see that the inclusion of workers with disabilities is relatively new. Next, we will look at the rules and best practices for developing emergency response plans that include the needs of these workers. Finally, we will investigate the most effective ways to implement and assess emergency response plans in the workplace.

History and Development of Emergency Response Planning

Since the Union Fire Company started by Benjamin Franklin in 1736 until the development of the National Response Framework in 2008, there have been many emergency events, natural disasters, and tragedies that have led to the concept of the emergency response plan of today. A major wake-up call and turning point was the Bhopal, India tragedy where a toxic gas leak from the Union Carbide Corporation led to the deaths of over 3,500 people and injured around 300,000 others (Shrivastava, 1993). Another Union Carbide gas leak in West Virginia the following year led to over 100 injuries. In response to these incidents, the United States decided to improve safety and reduce the possibility of loss. The government passed the Emergency Planning and Community Right-to-Know Act (EPCRA) in 1986 to require local governments to plan for emergencies involving chemical releases and to require informing citizens about chemical threats. In addition, the U.S. Congress instructed the Occupational Safety and Health Association (OSHA) and the Environmental Protection Agency (EPA) to take action. OSHA created the Process Safety Management (PSM) System to manage hazards related to

chemicals while the EPA made the Risk Management Plan (RMP) under the 1990 Clean Air Act Amendments to require plans from companies using hazardous substances. (Gupta, 2004)

Other more recent world events such as Hurricane Sandy, Hurricane Katrina, massive wildfires, September 11 attacks, and the earthquake, subsequent tsunami and nuclear accident in Japan became lessons to improve the concept of the emergency response plan, including emergency management policies, training, response efforts, and preparedness. Most importantly for this paper, these events revealed the lack of inclusion of people with disabilities in disaster and response planning. The Nobody Left Behind: Disaster Preparedness for Persons with Mobility Impairments Research Project states that "A common theme emerging from 9/11 is there are virtually no empirical data on the safe and efficient evacuation of persons with disabilities in disaster planning" (White, Fox, Rooney, & Rowland, 2007, p. 2). Consequently, states, governments, and employers have started to focus more time and effort to prepare for emergency response plans for their workers, businesses, and partners. According to Elizabeth Agnvall (2005) from the Society for Human Resource Management, "After the terrorist attacks of Sept. 11, both employers and the government are paying more attention to emergency preparedness and disaster plans that cover all employees" (p. 1). By 2005, a survey of human resource professionals showed that 60 percent said their organizations have an emergency response plan that includes people with disabilities (Agnvall, 2005).

In response to the growing awareness of the limits of disaster planning, in 2004 President George W. Bush signed *Executive Order 13347: Individuals with Disabilities in Emergency Preparedness* in order to increase the emergency preparation and assistance for people with disabilities, particularly for natural disasters and terrorism. The order also created the Interagency Coordinating Council on Emergency Preparedness and Individuals with Disabilities

(ICC) to coordinate efforts among 25 federal departments (Executive Order No. 13347, 2004). In 2012, the leadership and coordination of the ICC shifted to the Federal Emergency Management Agency (FEMA). FEMA's Office of Disability Integration and Coordination (ODIC), has the mission of including people with disabilities in every facet of emergency planning. FEMA's role is supporting residents and being the first responder in national disaster situations. FEMA works nationally, regionally, and locally to increase its ability to plan for disaster situations, respond to emergencies, recover after disasters, and reduce all risks. In 2010, FEMA Administrator Craig Fugate addressed the National Summit on Disability Policy and noted "the progress the emergency management community has made to integrate the needs of people with disabilities into all planning for disaster preparedness, response and recovery, and about FEMA's work to coordinate with state and local officials to ensure inclusiveness at all levels of emergency management." (FEMA, 2010, para. 1)

Unfortunately, recent events show there is still a wide gap between FEMA's goals and reality despite the progress that has been made. The evacuation and disaster relief for situations like Hurricane Katrina in 2005 and Hurricane Harvey in 2017 revealed that many responders were not trained or prepared for handling the special needs of people with disabilities. Paul Timmons, a co-founder of a non-profit that focuses on disaster relief, pointed out the problems with responders ignoring or not understanding the rights of people with disabilities. Another concern is that people with disabilities are blamed for not being better prepared themselves. (Perry, 2017) Both of these problems could happen in workplace emergency situations as well if there is a lack of planning and training.

Even though FEMA, the ODIC, and the ICC are not primarily focused on disaster planning for individual companies, they do provide many resources and recommendations for

businesses. For example, FEMA states that each building should have an adequate emergency plan in place to protect employees, contractors, visitors, and anyone else who might be affected by an emergency (Ready.gov, n.d. a). Employers such as Company XYZ can learn from the example of prioritizing the inclusion of people with disabilities into emergency planning. Additionally, the company can learn from the problems that FEMA continues to face in disaster planning. For instance, the fore-mentioned observations can help Company XYZ be aware of the training that is needed for community responders who may be needed in emergency situations instead of assuming that emergency responders have been trained in helping people with disabilities.

Regulations for Emergency Response Planning

Company XYZ needs to be aware of the federal laws and organizations involved in setting the regulations and recommendations for emergency response plans that apply to individual companies. They are briefly introduced here and then discussed separately in more detail. The primary regulating organization OSHA requires companies to have an emergency action plan that at a minimum covers reporting fires and other emergencies (29 CFR 1910.38c(1)) and has procedures for various types of evacuation plans with routes (29 CFR 1910.38c(2)) (Occupational Safety and Health Administration, n.d. a). The United States Environmental Protection Agency (EPA, n.d. a) requires employers to establish emergency response plans when their employees could have contact with materials that might harm them or the environment when the substances release. The Americans with Disabilities Act (ADA) of 1990, which is administered by the Equal Employment Opportunity Commission (EEOC), does not require employers to have an emergency response plan for people with disabilities; however, if employers have an emergency response plan, ADA requires employers to include people with

disabilities in the emergency response plan. Also, employers who do not have an emergency response plan for people with limitations must make the place as safe as a reasonable accommodation. (The U.S. Equal Employment Opportunity Commission, n.d.)

Occupational Safety and Health Administration (OSHA). OSHA's view on the best method to face emergencies is to be alert and prepared. According to OSHA, "The best way is to prepare to respond to an emergency before it happens. Few people can think clearly and logically in a crisis, so it is important to do so in advance, when you have time to be thorough" (Occupational Safety and Health Administration, 2001, p. 1). When employers understand that emergencies and disasters could occur to anyone, anytime, and wherever, they will have an emergency response plan to protect themselves, their workers, and their business. Emergencies might occur naturally or be manmade, including the following: floods, tornadoes, fires, toxic gas releases, chemical spills, explosions, and terrorism. OSHA's policy regarding disabled workers is "to strive for working conditions which will safeguard the safety and health of all workers, including those with special needs and limitations" (OSHA, 2004, p. 1).

OSHA's Hazardous Waste Operations and Emergency Response (HAZWOPER) and PSM standards publication include emergency planning and response requirements, emergency action plan, and fire prevention plan requirements. Development and implementation of the workplace emergency preparedness and response requirements are necessary to have an adequate safety and health program. OSHA's 29 CFR 1910.120(p)(8)(ii) states that the written development and implementation of an emergency response plan should include the following items:

- Pre-emergency planning and coordination with outside parties
- Personnel roles, lines of authority, training, and communication

- Emergency recognition and prevention
- Safe distances and refuge
- Site security and control
- Evacuation routes and procedures
- Decontamination procedures
- Medical treatment in emergencies
- Procedures for emergency alerting and response
- Response critiques and follow-up; and
- PPE and emergency equipment. (Occupational Safety and Health Administration, n.d. b)

Environmental Protection Agency (EPA). While OSHA is primarily concerned with employee health and safety within the workplace, the EPA focuses on public health and safety that is affected by environmental hazards, especially air and water pollution. According to the EPA's mission statement, their goal is that "all Americans are protected from significant risks to human health and the environment where they live, learn and work" (United States Environmental Protection Agency, n.d. b, p. 1).

Individual businesses such as Company XYZ must be aware of how EPA regulations apply to them based on chemicals or processes they are using that fall under the scope of the EPA. There is overlap with OSHA's HAZWOPER Standard (29 CFR 1910.120) and they have adopted a similar definition of *emergency response* as a "response effort by employees from outside the immediate release area or by other designated responders (i.e., mutual-aid groups, local fire departments, etc.) to an occurrence which results, or is likely to result, in an uncontrolled release of a hazardous substance." (EPA, n.d. a, p. 1) Therefore, it does not include

situations where employees or maintenance personnel are able to control, contain, or neutralize the chemical release. However, the EPA notes that this exception applies to only very minor incidents, with the majority of situations requiring a response "due to the immediacy of the dispersion of a toxic plume or spread of a fire, the volatilization of a spill, and the threat to people on and off site" (EPA, n.d. a, p. 2).

In short, the EPA is concerned with the response to the potential release of regulated chemicals. Their guidelines state that companies must determine whether chemical releases will be handled by their employees or by public responders. If chemical releases are to be handled by public responders, the company is responsible for coordinating with the responders to ensure they are capable and prepared. This would involve the fire department for a regulated flammable substance or the community emergency response plan for a toxic substance. The company also must have a plan for contacting the appropriate responders in an emergency. These guidelines are similar to OSHA's HAZWOPER Standard 29 CFR 1910.120. (EPA, n.d. a)

If employees will be involved in dealing with chemical releases, the EPA Part 68 requires an emergency response program, which includes an emergency response plan, training in emergency response procedures and equipment, and methods to ensure the program is kept updated. The plan must include the following:

- Procedures for informing the public and emergency response agencies about releases,
- Documentation of proper first aid and emergency medical treatment necessary to treat human exposures, and
- Procedures and measures for emergency response. (EPA, n.d. a, p. 2)

However, the EPA recommends avoiding duplication of planning, and instead focusing on integrating processes and identifying any additional planning that is needed. While the EPA does

not directly state regulations for people with disabilities, they must comply with the law set by the ADA.

Americans with Disabilities Act (ADA). The ADA made it illegal to discriminate against people with disabilities, including in the workplace, by providing "reasonable accommodation." The ADA is applicable to public employers and private employers with fifteen or more employees. (EEOC, n.d.) It has continued to be refined over the years, with the most significant update in 2008 with the ADA Amendments Act. Title II of the ADA requires state and local governments to include the needs of people with disabilities in emergency management planning. For businesses, the United States Department of Labor (DOL) Office of Disability Employment Policy states that "Emergency preparedness plans should include people with disabilities, and in order to do so effectively, organizations need to establish a process to fulfill requests from individuals with disabilities for reasonable accommodations they may need in emergency situations" (DOL, n.d., para. 8).

The DOL explains that "emergency preparedness plans that do not include or adequately consider the needs of people with disabilities could hinder equal access to employment" (DOL, n.d., para. 4). They explain that people with disabilities might feel a need to avoid certain jobs or situations because they are afraid of being in an unsafe place without an adequate emergency plan. From the management side, employers might avoid hiring people with disabilities if they feel worried about their safety. Thus, having an emergency response plan that includes the needs of employees with disabilities helps companies stay in compliance with the ADA.

Developing an Emergency Response Plan for People with Disabilities

A comprehensive and effective emergency response plan is the result of careful planning, implementation, evaluation, and updating. Ready.gov, an official website of the Department of

Homeland Security, provides a list of 10 Steps for Developing the Emergency Response Plan (See Appendix A) and Emergency Response Plan worksheet guide (See Appendix B). The steps are included in the following discussion with a focus on how to include the needs of people with disabilities at every level of planning.

First, companies should establish performance objectives or review their existing objectives. When the performance objectives are consistent with the emergency plan, the emergency response plan will be efficient. Each company should have short-term and long-term goals to develop and maintain a comprehensive safety program, which consists of preventing, reducing, and responding to risk, as well as planning for business continuity. Ready.gov suggests including "objectives for managing risk, investing in resources, establishing capabilities through training and exercising and complying with regulations." (Ready.gov, n.d. b, para. 1) Therefore, another important aspect is checking which regulations apply to emergency planning for the company, including regulations for incorporating the needs of people with disabilities, as discussed in the previous section. Companies must decide if they will follow the minimum requirements or go beyond them. There also needs to be an Emergency Response Team with clear guidelines for each member's role and responsibilities.

Next, companies must complete a risk assessment. According to Ready.gov (n.d. a), creating a plan must begin with conducting a risk assessment that focuses on identifying the possible emergency scenarios. Having ideas about what could happen in the facilities will help to determine the specific planning and resources that might be needed, while keeping in mind the first priority in each scenario is protecting people's lives and the second priority is stabilizing the situation. Another part in the risk assessment stage is learning the needs of people with disabilities so that they are included in the planning, according to the Job Accommodation

Network (JAN). In order to know their needs, JAN (n.d.) recommends asking employees if they have limitations that might interfere with their safety in emergency evacuation/response situations. However, there are confidentiality laws that must be followed. The U.S. Equal Employment Opportunity Commission (EEOC, 2005) outlines three options employers have for obtaining this kind of information:

- After making a job offer, but before employment begins, an employer may ask all individuals whether they need assistance during an emergency.
- An employer may survey all current employees to determine whether they will require assistance in an emergency, as long as the employer makes it clear that self-identification is voluntary and explains the purpose for requesting the information.
- An employer may ask employees with known disabilities if they will require assistance in the event of an emergency. An employer should not assume, however, that everyone with an obvious disability would need assistance. Also, employers could hold fire drills and make practice evacuations to get an idea about needs that might affect employees with disabilities. (p.1)

Based on a review of the risk assessment, companies can develop actions focused on life safety. Ready.gov's (n.d. a) list of "protective actions for life safety" covers building evacuation plans and training, sheltering from severe weather, sheltering for chemical release, and lockdown in case of violence. The protective actions should consider employees, visitors, customers, contractors, and anyone else in the facility. There must be a warning or alarm system that will alert all employees to various types of emergencies (29 CFR 1910.38(d) and 1910.165(b)(1)) and a procedure for sounding each alarm (29 CFR 1910.165(b)(5)) (Occupational Safety and Health Administration, n.d. c& a). OSHA's Emergency Action Plan Checklist (Occupational Safety and

Health Administration, n.d. d) says: “Make sure alarms are distinctive and recognized by all employees as a signal to evacuate the work area or perform other actions identified in your plan. Sequences of horn blows or different types of alarms (bells, horns, etc.) can be used to signal different responses or actions from employees” (p. 1). OSHA (Occupational Safety and Health Administration, n.d. d) requires employers to have an acceptable emergency communications system and make sure the system works properly and matches all needs. “Consider making available an emergency communications system, such as a public address system, for broadcasting emergency information to employees. Ideally alarms will be able to be heard, seen, or otherwise perceived by everyone in the workplace including those that may be blind or deaf” (p. 1). Another suggestion is choosing floor wardens who are responsible for notifying employees of emergencies. Furthermore, companies should have an auxiliary electrical source in case of loss of power (Occupational Safety and Health Administration, n.d. d).

Evacuation. Some emergency situations such as fire, chemical spills, or bomb threats could require evacuation. There must be enough exits available in all parts of the facility. Ready.gov (n.d. a) states that all hazardous areas should have two exits, but more may be required depending on building or fire codes. OSHA gives recommendations to employers about developing and implementing evacuation plans that account for employees with limitations. A key recommendation is designating individuals to act as evacuation wardens who are capable of assisting workers out of danger during emergencies. (Occupational Safety and Health Administration, n.d. d) OSHA estimates that one warden is adequate to guide 20 people to the safest place, keeping in mind that there will need to be the appropriate number of wardens during all working hours. The wardens should be responsible for checking all work areas and bathrooms

before exiting the building, and they should ensure that fire doors are closed when leaving. (Occupational Safety and Health Administration, 2002)

The employer must train the designated assistants in workplace layout and various escape routes in the emergency evacuation procedures (29 CFR 1910.38(e)) (Occupational Safety and Health Administration, n.d. a). Also, the designated assistants should be trained how to use a buddy system, how to avoid dangerous areas during evacuation, and how to help the workers with limitations who may need special assistance. There should be a designated assembly area where everyone will meet that is a safe distance away from the facility. (Occupational Safety and Health Administration, 2002) A member of the emergency response team should be responsible for bringing a list of employees and the visitor log, which should be maintained in the reception area or main office. When everyone has gathered in the assembly area, OSHA 29 CFR 1910.38(c)(4) requires checking the names on the employee and visitor lists to make sure everyone has been evacuated safely (Occupational Safety and Health Administration, n.d. a).

Sheltering. Severe weather is the most likely threat that might require sheltering within the facility. Companies should have a system to monitor extreme weather through local news broadcasts. In the case of a tornado warning, the company must have a system to alert employees and a plan for a safe place to gather. Safe places are typically basements or interior rooms with reinforced construction. Ready.gov (n.d. a) states that the potential shelter area(s) should be checked to ensure that all employees can fit in the space. Also, consider the special needs that people with disabilities might have when moving to the designated space or being comfortable in the space. The plan should specify how to assist them and who is responsible.

Shelter-in-place. A shelter-in-place emergency would be the result of an outside event such as a chemical cloud, explosion, or act of terrorism. This scenario should include a way to

alert everyone who is inside or nearby the facility so that they gather in an interior space away from windows and entrances, and preferably on a second floor or higher if possible. As in the other scenarios, the plan should indicate how extra assistance would be provided to anyone with special needs. Additionally, the plan should outline who is responsible for closing windows, exterior doors, and turning off the ventilation system in the building until the company receives notification that it is safe. (Ready.gov, n.d. a)

Lockdown. An act of violence, such as an active shooter within the building, would require a lockdown response. Employees need to be aware of the need to take immediate shelter if they hear gunfire, see a suspected shooter, or are informed of a lockdown. They should be trained to hide under solid furniture, move to corners away from windows or doors, or even find a room they can lock and barricade if possible. The plan should also indicate various people who would be trained and responsible for broadcasting a lockdown announcement from a safe place and contacting emergency services. (Ready.gov, n.d. a)

Incident stabilization. After protective life actions, incident stabilization is the next priority. Incident stabilization might involve extinguishing or containing a fire, giving medical assistance, rescuing someone, containing a chemical spill, or dealing with a violent act. Much of incident stabilization may come from emergency services, but companies should consider any actions within their capacity that could be done immediately. They should also be aware of any regulations that require the company to take action at once rather than waiting for emergency services. It must be clear who is responsible for each action, especially since some actions like medical assistance require training. Any medical or rescue procedures must be written in the plan (29 CFR 1910.38(c)(5)). The employer must also provide contact information for emergency

services, usually posted near the telephone or on notice boards in obvious areas (29 CFR 1910.165(b)(4)) (Occupational Safety and Health Administration, n.d. c).

The next step is evaluating other specific hazards and threats that were noted in the risk assessment beyond those listed above. For each scenario, the company must determine the resources that would be needed for incident stabilization to identify what is available currently and what is lacking. The resources include the systems, equipment, and people from the company and external sources. The company must identify how public emergency services such as fire departments, police, and medical responders would be involved in any possible scenarios revealed during the risk assessment. (Ready.gov, n.d. a)

Then, the company should communicate with any and all public or contract emergency services that are included in the procedures. The company needs to learn about their response time to the company, their capacity to handle various scenarios, and to provide information about the company's facility and possible hazards. Providing the services with information can help them be prepared to respond efficiently and effectively. The information should include plans that show road access to the facility, parking lots, buildings, entrances, and layout of the facility. Also, it should include where to locate emergency equipment and controls for the facility's utilities. (Ready.gov, n.d. a) At this point, the company should also ask about their capabilities, experience, and training in emergency response involving people with disabilities and share information about the needs of its workers with disabilities. According to the EEOC (2005), the ADA typically requires confidentiality with medical information, but allows exceptions for safety and first aid personnel. The EEOC (2005) explains that employers are permitted:

> to share information about the type of assistance an individual needs in the event of an evacuation with medical professionals, emergency coordinators, floor captains,

> colleagues who have volunteered to act as "buddies," building security officers who need to confirm that everyone has been evacuated, and other non-medical personnel who are responsible for ensuring safe evacuation. These individuals are entitled to the information necessary to fulfill their responsibilities under the employer's emergency evacuation plan. (p. 1)

Next, the company must train all staff members to recognize the various alarms and warning systems and provide training to employees who are part of the emergency response team so that they are prepared for their roles and specific responsibilities. It may be necessary to share information about employees' medical conditions, as noted above. After employees are aware of the procedures, the next step is to practice by using drills or simulations. The drills can give feedback on the plan by identifying deficiencies or gaps and will help all employees become familiar with the plans and alert systems. At a minimum, it is important to conduct drills for all life protection scenarios. Another important aspect is that drills can help employers learn about needs that disabled employees may not even recognize themselves (Agnvall, 2005). The drills should also include participation by the emergency services that would likely be needed in each scenario.

In both the training and drill stages, companies must consider the best methods to ensure the training information and procedures are accessible and comprehensible to the employees with disabilities. This is particularly important for employees with developmental or intellectual disabilities, such as many of Company XYZ's workers. The National Fire Protection Agency (NFPA, n.d.) recommends providing training in a variety and combination of formats (spoken, written, demonstrated, shown in pictures, video, etc.) and having participants actively discuss or role play what they are learning. They also suggest using small groups during training, limiting

the time and focus of each training, covering material slowly, using simple language, and repeating the main message. Participants should prove their understanding of the training through demonstration instead of simply saying they understand.

Implementing and Evaluating the Emergency Response Plan

When the plan is complete and ready for implementation, employers must distribute a written copy of the plan to all employees and keep a copy in the workplace that is available for employees to review (29 CFR 1910.38(b)) (Occupational Safety and Health Administration, n.d. a). They also must review the plan with each employee when the plan is first implemented, when there are changes in job assignments related to the plan, or when there are changes in the plan (29 CFR 1910.38(f)) (Occupational Safety and Health Administration, n.d. a). Employees must be trained in any part of the plan for which they have some responsibility or need information to protect themselves. Also, the company must have all resources in place that are a part of the plan. As mentioned above, this should also include coordinating with local emergency services. In order to accomplish these steps, the company should establish an emergency response training plan that outlines what will be done during each 12-month period. OSHA (2007) recommends planning for the following questions:

- Who will be trained?
- Who will do the training?
- What training activities will be used?
- When and where will each session take place?
- How will the session be evaluated and documented? (p. 6)

The FEMA Emergency Management Guide (see Appendix C) or a similar schedule can be used to keep track of the activities. After each training activity, the company should conduct a

review that involves the employees and any community responders that were involved. The goal is to identify strengths and weaknesses of the plan and then adjust it as needed. These reviews should be a part of the larger yearly assessment. Each year, there should be a complete audit of the plan to identify any changes that need to be made.

Chapter III: Methodology

As noted in the introduction, Company XYZ has been in operation for many years and has taken some steps to ensure safety in the workplace, but it is lacking a complete plan that prioritizes the special needs of its employees with disabilities. Since the purpose of the study is to develop and implement an effective and comprehensive emergency response plan at Company XYZ, it was essential to investigate XYZ's existing emergency procedures and training and complete a risk assessment. In order to gain this information, the researcher made interview questions for company employees (see Appendix D), examined relevant documents from the company, met with the current safety manager, made observations from company videos, and toured the facility to complete in-person observations. This information was compiled and analyzed qualitatively because the goal was to understand the situation by gaining insights from various perspectives and experiences in the company as well as the researcher's observations. The data allowed the researcher to identify strengths and weaknesses in the company's current safety planning and determine where is the high and low risk in order to provide recommendations. This chapter includes a discussion on subject selection, instrumentation, data collection, data analysis, and potential limitations.

Subject Selection and Description

The researcher contacted employees at Company XYZ to ask for volunteers to participate in the study. Ten employees elected to participate, and all of them were either in supervisory or managerial positions. Figure 1 shows the list of participants with their position, employment status, and years of experience. While the departments are not listed, each department had at least one participant. Thus, there was a wide representation of different experiences within the company. The safety manager was also involved in finding and reviewing company documents,

discussing the safety policies in more detail, and evaluating the current situation at XYZ with the researcher.

Participant	Type	Status	Years on the job
A	Safety and supervisor	Full time	Nine months
B	Management	Full time	Three years
C	Supervisor	Full time	Three years
D	HR	Full time	Two years
E	Supervisor	Full time	Three years
F	Supervisor	Full time	One year
G	Supervisor	Full time	Two years
H	Supervisor	Full time	Two years
I	Supervisor	Full time	One year
J	Supervisor	Full time	Two years
K	Supervisor	Full time	Two years

Figure 1. List of interview participants from Company XYZ.

Instrumentation

The researcher created survey questions to identify current safety planning, procedures, training, and recommendations for Company XYZ (see Appendix D). The questions aimed to

compare the current safety environment with what is required or recommended in an effective emergency response plan, as described in Chapter II. The researcher asked primarily open-ended questions to allow participants to elaborate on their knowledge and experience. One question also asked participants to check if various elements of an emergency response plan were: (1) Not in place; (2) Yes, but inadequate or ineffective; or (3) Yes, adequate and effective.

While meeting with Company XYZ's safety manager, the researcher used OSHA's Action Plan Checklist (Appendix E), which consists of a series of questions that help assess what elements of an emergency plan are or are not in place. The checklist has questions in four areas:

- general issues,
- evacuation policy and procedures,
- reporting emergencies and alerting employees in an emergency, and
- employee training and drills.

Thus, the researcher was able to gain additional information about the current safety situation at Company XYZ.

The Risk Assessment Control Form (see Appendix F) was used to record hazards observed by the researcher in each department. Then the Risk Control Matrix (see Appendix G) was used to evaluate the risk of each hazard by judging the consequence from minimal to catastrophic and the likelihood from rare to almost certain. The matrix indicated a low, moderate, significant, or high risk for each. The risk levels were then added to each hazard listed on the Risk Assessment Control Form.

Data-Collection Procedures

Interviews were the first data-collection method used for the study. The ten voluntary participants from Company XYZ were interviewed by phone calls or face-to-face meetings. The

researcher informed the employees of their right to be part of this study or not. They were also told that their personal information and the company's identifying information would be removed from the report. The researcher tried to be flexible when arranging meeting times in order to avoid interfering with their schedules. Since all of the interviews were verbal, the researcher took notes on the responses and compiled the notes into one aggregate document.

The second data collection method that the researcher utilized was reviewing company documents and records related to safety planning. In order to access the documents, the researcher arranged to meet with Company XYZ's safety manager, who was able to locate documents from previous safety plans and drills that have been conducted in the company. The researcher took notes about information that was relevant to understand the emergency planning at the company. While meeting with the safety manager, the researcher collected additional information by using OSHA's Develop and Implement an Emergency Action Plan (EAP) checklist (Appendix E) to identify gaps in the existing plans and procedures. They also used the checklist to discuss recommendations for Company XYZ's development of the emergency response plan.

The third method was observation through reviewing videos that have been recorded by the company system, which allowed the researcher to see the company's safety plan in action. The researcher watched videos recorded by the company security system during evacuation drills, specifically fire drills that were scheduled by the safety department from 2014, 2015, and 2016. The main focus of the observations was to watch how the employees with disabilities acted during the drills, especially in their understanding of the drill and their movements to evacuate. Also, the observation included looking at the actions of other employees and the way the plan

was implemented. The researcher took notes about any difficulties they had or mistakes they made and also noted any hazards in each area.

Observation was also used in the final step of data collection. The researcher visited the company during work hours to complete a walk-through of the facility to observe hazards in each department that may not have been visible in the videos. The researcher took notes about hazards on the Risk Assessment Control Form (see Appendix F), and also about the overall environment for the workers and visitors.

Data Analysis

After completing employee interviews, reviewing company documents, discussing with the safety manager, watching surveillance videos, and touring the company, the researcher used qualitative analysis to identify any data that would be useful for improving the safety environment at Company XYZ when developing an emergency response plan. This included finding deficiencies in existing plans and training, hazards in the facility, and problems faced by workers with disabilities. The researcher was able to reinforce findings by comparing responses from the interviews with information from the company documents, as well as the discussion with the safety manager. The researcher also analyzed the level of risk of each hazard that was observed and recorded on the Risk Assessment Control Form by using the Risk Control Matrix (Appendix G). Finally, this information was used to make recommendations for the company's development of the emergency response plan.

Limitations

This study attempted to gather information from a variety of sources to get a thorough understanding of the situation at Company XYZ. However, there were some factors that potentially limited the research. First, the researcher relied on volunteers to participate in the

interview and there were only ten who volunteered. Ideally, there would be multiple participants from each department. The number may have been low because people are so busy or they may have felt uncomfortable sharing information about the company even though the researcher made it clear that all identifying information would be removed. They also may have felt uninformed about the topic if they have not received training in safety policies. Also, there were no volunteers from the regular workers, only from the supervisory and managerial levels. It would be best to have input from all levels because they might have different experiences and perspectives, but they may have felt unqualified or uninterested in participating. On the other hand, the researcher was able to focus the questions for the managerial level because all volunteers were managers or supervisors.

Chapter IV: Results

The researcher used the data-collection methods in this study to examine the current situation at Company XYZ regarding the development of an emergency response plan for people with disabilities. This section presents the results of interviewing employees, reviewing company documents, discussing safety issues with the safety manager, observing video recordings from fire drills, and touring the various departments in the facility.

Presentation of Collected Data

The following sections will include the information that was collected from each data-collection procedure, with a list of the deficiencies revealed in each.

Employee interviews. The responses from the interview are provided in Figure 2 below as well as in the following paragraphs. The first question asked respondents to estimate the percentage of Company XYZ employees with disabilities, and they indicated that 70 to 75 percent of them have disabilities. The second question asked what elements (program, policies, procedures, trainings, drills, evaluations) are in place as part of an emergency response plan for employees with disabilities. None of the employees knew about the company's plans or policies for an emergency response plan. The safety manager said he had seen some plans, but he was not sure if they were for an emergency response plan. He mentioned that they used to have drills but do not currently. Two other managers said there used to be drills, with the last one in 2016. They said they had done some evacuation training with their employees before the drills. The newer employees had no knowledge of these drills. All other answers indicated that the elements are not in place. The respondents also shared that there is not a team that works to create an emergency response plan for people with disabilities. They also mentioned there was an agency

that came to do safety inspections the previous year, but the agency did not check any safety policies or programs.

<table>
<tr><td>Questions</td><td colspan="4">Answers</td></tr>
<tr><td>1. What is the percentage of impaired employees at XYZ?</td><td colspan="4">• 70- 75%</td></tr>
<tr><td rowspan="7">2. What do you have in place as part of an emergency response plan at Company XYZ for impaired employees?</td><td></td><td>Not in place</td><td>Yes, but inadequate or ineffective</td><td>Yes, adequate and effective</td></tr>
<tr><td>Program</td><td>9</td><td></td><td></td></tr>
<tr><td>Policies</td><td></td><td>1</td><td></td></tr>
<tr><td>Procedures</td><td></td><td>1</td><td></td></tr>
<tr><td>Trainings</td><td>10</td><td></td><td></td></tr>
<tr><td>Drills</td><td></td><td>3</td><td></td></tr>
<tr><td>Evaluations</td><td>10</td><td></td><td></td></tr>
<tr><td>3. How do you evacuate the impaired employees from the building when there is an emergency?</td><td colspan="4">• All said use the exit doors.
• Nobody knows where to assemble after evacuation.</td></tr>
<tr><td>4. How do you train your impaired employees about evacuation procedures?</td><td colspan="4">• All said they do not know how to train people with disabilities.
• They are not qualified to provide that training.
• They do not know how to communicate with people who cannot speak and hear.
• They do not know how many employees use wheelchairs.</td></tr>
<tr><td>5. How often do you have a fire drill?</td><td colspan="4">• Seven have not done any fire drills.
• Three said the last one was in 2016.</td></tr>
<tr><td>6. As a manager, what could happen in the company to the employees with disabilities if there was an emergency such as a fire?</td><td colspan="4">• Volunteers might die or be injured if they did not get out of the facility.</td></tr>
<tr><td>7. Regarding emergency response plans for disabled/impaired workers, what recommendations do you have to improve existing management policies?</td><td colspan="4">• The company should plan and develop guidelines for people with disabilities.
• Active fire drills.
• Providing trainings.
• Be alert.
• Prioritize the emergency response plan.</td></tr>
</table>

Figure 2. List of interview participants' answers from Company XYZ.

The third question asked how to evacuate employees with disabilities, and the respondents answered that they should use the exit doors. They did not know where to assemble after evacuation. Next, they were asked about how they train people with disabilities for evacuation situations. They said they do not know how to train people with disabilities, and they are not qualified to provide that training. The researcher asked the volunteers if any of them know how to communicate with people who cannot speak and hear, and the answer was no from all of them. They also did not know how many employees use wheelchairs. Even the safety manager had not been trained to work with people with disabilities. He was hired recently and also works as a manager of other departments.

Question five asked about how often the company has fire drills. Seven of ten have not done any fire drills while three said the last one was in 2016, which confirmed the information from question two. The sixth question asked managers to imagine what could happen to employees with disabilities if there were an emergency such as a fire. All respondents agreed that they might die or be injured if they did not get out of the facility. A few managers mentioned that the fire department, police, and other agencies had been there when there were emergencies; however, Company XYZ does not actively develop or maintain relationships with emergency response services.

The final question asked for their recommendations to improve existing policies regarding an emergency response plan for employees with disabilities. All respondents said that they should plan and develop guidelines for people with disabilities. Further comments included: do fire drills, provide trainings, be alert, and prioritize the emergency response plan.

In sum, the employee interviews revealed the following deficiencies:

- No training for emergency procedures

- No emergency drills currently
- No emergency response team
- No training for managers responsible for training people with disabilities
- No relationship building with local emergency response services

Company documents. The researcher found that there was no central location for safety records. Instead, each department had separate documents. It took hours to find some of the documents because they were spread out in various departments. While reviewing the documents, the researcher learned that the company has an old emergency response plan which was made in the 1990's. The emergency response plan was made without including the needs of people with disabilities. Also, there were not any documents that showed any meetings or schedule for making a new emergency response plan or updating the old plan. The safety manager could not find any documents that identify hazards, estimate the risk probability, or assess the potential impact on people. Also, there were not any documents showing that they have trainings for employees or evaluations of what the company already has in place. Although some managers had mentioned training for drills, there were no written records of the training. There was an evacuation map, but some of routes do not exist anymore because the map was never updated to match the current layout of the facility.

The researcher also looked for documents that would show Company XYZ's compliance with codes and regulations. Some policies exist but are outdated, while others do not exist or could not be found. For example, there was no evidence of policies or programs for hazardous waste, bloodborne pathogens, or injury and illness.

In sum, the researcher determined the following deficiencies from the company documents:

- Outdated emergency response plan with no inclusion of employees with disabilities
- No schedule for updating emergency plans
- Outdated evacuation map
- No risk assessment
- No records of training or drills
- Missing or outdated policies

Safety manager discussion. The researcher found that the current safety manager was hired recently, and he has had only a basic safety training, OSHA 10. As mentioned earlier, he explained that he has responsibilities in several departments, so he does not have time to focus much on reviewing safety policies or procedures or making changes to improve the safety environment at the company. He also shared that he has some challenges interacting with employees with disabilities because he does not have experience or training.

The safety manager indicated that the company leaders are concerned about improving the safety culture and environment, and they are looking to hire additional employees who can specialize in safety issues. Also, the company has the desire to develop an emergency response plan, but they are not sure how to achieve this. He expressed concern about the amount of time and effort that will be needed to create an effective and updated plan.

The following is a list of deficiencies that were learned through the discussion:

- Lack of time and personnel devoted to emergency response planning
- Lack of training for interacting with employees with disabilities about safety

Video observations. The fire drill began with an alarm, but there did not seem to be a way to alert employees with a hearing impairment. The researcher observed that there were employees in the videos who did not seem to be taking the drills seriously. In one video, there

were several people in the bathroom at the time of the drill, but no one checked to make sure everyone evacuated. There was also a worker who was moving very slowly, but no one assisted this person. There was crowding near some exits, while other exits were not utilized.

The researcher learned there had been five employees who were designated to observe weaknesses during the drill; however, the researcher saw that these five employees were giving guidance to other employees instead of only observing. The researcher tried to find the records of these observations but was only able to obtain some of them because they were located in different departments. Of the records that were found, none of the observers had noted any problems, but they also had never received any training before doing the observations.

The researcher also found that the previous safety manager had been monitoring how long it took everyone to evacuate. Of the three years that were observed, each evacuation took longer than the previous year. There were no records that commented on the evacuation times or plans to improve.

To summarize, the videos showed the following deficiencies:

- Lack of clear responsibilities and training for employees regarding fire drills
- No indication of assessing drills to improve for the future

Facility tour. The complete results of the facility tour observations were recorded on the Risk Assessment Form (see Appendix F). The researcher found hazards in all departments, and the hazards included ergonomic, airborne materials, chemical, fire, electrical, mechanical, housekeeping, biological, improper storage, organization, and others. Other general observations included that the facility was located in an old building that was not designed for this company. There were maps posted in the facility to show the exits, but one of the exits did not exist anymore. The departments were connected, and visitors and employees could move throughout

the facility. It was possible for employees from one department to move into another department for which they were not trained. Some of the workers had visible physical disabilities, while others did not. Machinery such as forklifts used the same paths as people. There were fire extinguishers and first aid kits throughout the departments.

Finally, the researcher noted the following deficiencies:

- Numerous hazards throughout the facility and various departments
- Incorrect evacuation map was posted

Summary

This chapter presented all results from the interviews, documents, discussions, and observations that were useful to understand the current safety situation at Company XYZ. The researcher gained a better understanding of what will be necessary to develop and implement an emergency response plan for employees with disabilities based on the deficiencies that were identified. The next chapter will provide the discussions, conclusions, and recommendations which will help the company to control their risk with a comprehensive and effective emergency response plan.

Chapter V: Discussion, Conclusion and Recommendations

The previous chapter presented the key findings of Company XYZ's current safety situation. The purpose of this chapter is to discuss the findings by comparing the current situation with the requirements and recommendations of developing and implementing an emergency response plan as outlined in Chapter II. By identifying the gaps and deficiencies, the researcher can make clear conclusions and recommendations about the steps Company XYZ should take to mitigate their risks and help the company to protect lives in emergencies.

Discussion

Based on the research findings, Company XYZ is not complying with the regulations for having an adequate emergency response plan in general or especially for people with disabilities, despite having a large percentage of workers with disabilities. OSHA's regulations require this company to have an updated emergency response plan, and the ADA requires the company to include people with disabilities in the plan. It is possible that the old plan was following the required regulations when it was first developed; however, it is not in compliance with the regulations that exist nowadays. There is no evidence that the company is aware of what is required, which is an essential part of the beginning stage of developing a plan.

While the safety manager reported that the top management at the company has indicated an interest in emergency response planning, there are currently no clear goals or timeline to execute the plan. There is no team or person who is in charge of developing and implementing an emergency response plan. Although there is a safety manager, he does not have enough experience and has too many other responsibilities. A well-developed plan will only happen with clear goals, a committed team, a leader with knowledge of the regulations, and time dedicated to the process.

One of the most significant research findings was the lack of inclusion of people with disabilities in current safety plans. While the company's mission is to provide training and employment for people with disabilities, their safety in the workplace should also be a priority. The company should explore the needs of employees with disabilities, including physical and cognitive. Their needs should be considered at every stage of the planning. While there can be issues with confidentiality, the company can follow the EEOC's guidelines to share employees' information only as needed to protect them.

Another part of the process is the risk assessment, which includes understanding possible emergency scenarios and developing protective actions for life safety. Besides the past fire drills, it seems the company has not considered or planned for other protective actions such as sheltering or lock down. The company needs distinctive alarms, ways to alert employees with hearing impairments, and plans to assist employees with disabilities. For evacuations, the company seems to be lacking updated maps, designated exits for each area, and clear responsibilities for checking that everyone has evacuated. There was a planned assembly area, but the interview participants were unaware of it. It was also unclear what steps the company would take for incident stabilization in the various scenarios, despite the presence of fire extinguishers and first aid supplies. There was no information about who would take responsibility or who was trained to use the equipment.

Similarly, the company needs to look at the hazards that are present in the facility and various departments, such as those identified by the researcher on the Risk Assessment Form (see Appendix F). The company can reduce or eliminate some hazards and be prepared for the possible emergency scenarios in their planning. At the same time, they should be building and maintaining relationships with the local fire department, police, and other agencies that would be

responding in emergency situations. The company should provide these organizations with updated information about the facility and resources that may be needed in each scenario. They are a valuable and necessary aspect of emergency plans and should become a part of practice drills.

Training is another missing element in the safety environment at Company XYZ. The managers cannot provide training for the other workers because they have not received this information themselves. The managers and supervisors involved in the interviews did not know where they should go when there is an emergency evacuation, so it is unlikely other employees know. In addition, the managers and supervisors need skills in how to train employees with disabilities about safety plans because they said they were unqualified to provide training.

By law, the emergency response plan must be accessible to employees, and everyone must review the plan to become familiar with it. Clearly, this is not the current practice at Company XYZ since most of the managers and supervisors were unaware of the existing plan. Part of the problem is that no department has all the safety and emergency information and policies. Without a central location and a clear division of responsibilities, no one is taking care of this task.

Finally, Company XYZ is lacking a planned review to evaluate the plan and its implementation. There was some evidence of trying to evaluate the fire drills, but the people involved seemed to be untrained and there was no sign of attempts to improve from one year to the next. During the interviews, some participants asked what evaluation is for and how to have it, which is a good sign that they want to make change. If the company had followed a review process for the original safety plan, it could have been updated over time and possibly be an effective plan today.

Conclusions

Based on the findings, Company XYZ's existing safety policies are outdated, inaccurate, and not compliant with current rules and regulations. The company is lacking most of the required and recommended elements of an emergency response plan. As a result, the employees and visitors to the company are at risk. The results of the study can help the company to understand the risks and take action to control many significant safety hazards by developing and implementing an adequate and effective emergency response plan that prioritizes the inclusion of the needs of employees with disabilities.

Recommendations

All the items that have been presented and discussed throughout this paper will guide Company XYZ to develop and implement an adequate and effective emergency response plan for people with disabilities. The following recommendations have been established for Company XYZ:

1. Company XYZ's leadership must commit to developing an emergency response plan by creating goals, a timeline, and a budget.
2. Company XYZ must form an Emergency Response Team and designate a team leader who is well-informed of the management's goals, budget, plans, needs, and expectations. Management must give authorization to the leader and the team regarding the development of the plan. The team must have sufficient training, time, and resources to complete the process of developing and implementing the plan.
3. The team must review codes and regulations from OSHA, the EPA, the DOL, and so on to ensure the plan will be in compliance with relevant laws. The team can also find useful planning tools and advice from many of these organizations.

4. The team must complete a needs assessment that includes:
    - reviewing current plans, policies, and procedures
    - assessing hazards in the facility (including risk assessment and analysis)
    - communicating with employees with disabilities about their needs
    - identifying current resources and projected resource needs
    - identifying needs from external agencies
5. The team must plan protective actions for life safety by updating the evacuation plan and developing plans for sheltering and lock down. They must decide on alarms and broadcast systems, assembly areas, responsibilities for assisting employees with disabilities, etc. Given the high percentage of employees with disabilities, they should designate and train people to serve as evacuation wardens and use a buddy system.
6. The team must identify who will be involved in incident stabilization such as providing first aid or extinguishing a fire, and training must be provided for them. The company must ensure that all safety equipment is checked regularly.
7. Company XYZ should communicate and build relationships with external emergency resources such as local fire, police, and HazMat departments. The company should learn about their capabilities and training in working with people with disabilities because future training might be needed.
8. Company XYZ needs to develop a training program that meets the needs of employees with disabilities, both physical and cognitive. The training must include recognizing the alarms, steps to take protective actions, and drills to practice the training. There also needs to be training for the managers or developmental disabilities or others who will be conducting the training because they will have to

adapt the methods to meet various needs. The company should consider using or adapting the materials in the Staying Safe at Work curriculum, which was developed by NIOSH and the Labor Occupational Health Program at the University of California, Berkeley, to focus on training employees with intellectual or developmental disabilities.

9. When all of the steps above have been accomplished, the team must write the complete emergency response plan that includes all procedures and responsible parties. All employees must receive a copy of the plan and review it with a trainer. The plan should be accessible and understandable for all employees, so it may need to be provided in a variety of formats.
10. The team needs to create a schedule for ongoing training and practice drills, as well as a way to document and evaluate the effectiveness of each. The company should include external emergency services to participate in the drills and evaluation.
11. The team needs to develop a schedule and method for yearly review of the complete plan, with updates and adjustments made after each review. Any changes must be reviewed with the employees.
12. Company XYZ's leadership should continually support the plan and show that in the employee newsletters, bulletin boards, or other forms of communication. They also should promote better communication in all levels of the company so that employees can contribute their suggestions, needs, and concerns about safety in the company.

Areas of Further Research

As noted in the limitations, going into depth about the distinct needs of different types of disabilities was beyond the scope of this study. While completing this study, the researcher found

that the majority of available information is focused on employees with physical disabilities. Providing accommodations and training for these people seems to be more straightforward because there are many resources and equipment for people with physical disabilities or limitations. Therefore, there is a need to focus more on safety training and accommodation for employees with intellectual and developmental disabilities, not just for emergency response plans, but also for everyday safety in the workplace.

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Appendix A: 10 Steps for Developing the Emergency Response Plan

10 Steps for Developing the Emergency Response Plan

1. Review performance objectives for the program.
2. Review hazard or threat scenarios identified during the risk assessment.
3. Assess the availability and capabilities of resources for incident stabilization including people, systems and equipment available within your business and from external sources.
4. Talk with public emergency services (e.g., fire, police and emergency medical services) to determine their response time to your facility, knowledge of your facility and its hazards and their capabilities to stabilize an emergency at your facility.
5. Determine if there are any regulations pertaining to emergency planning at your facility; address applicable regulations in the plan.
6. Develop protective actions for life safety (evacuation, shelter, shelter-in-place, lockdown).
7. Develop hazard and threat-specific emergency procedures using guidance from the resource links on this page. Write your emergency response plan using this template
8. Coordinate emergency planning with public emergency services to stabilize incidents involving the hazards at your facility.
9. Train personnel so they can fulfill their roles and responsibilities.
10. Facilitate exercises to practice your plan.

Appendix B: Emergency Response Plan Worksheet

Company Name

Address

Telephone

Contact Name Title

Last Revision Date

Policy and Organizational Statements

Identify the goals and objectives for the emergency response plan.

Define what your emergency response team is expected to do during an emergency (e.g., evacuate employees and visitors, provide first aid, etc.)

Identify any regulations covered by your plan (e.g., OSHA, fire code, etc.)

Evacuation Plan

Evacuation may be required if there is a fire in the building or other hazard. The evacuation team will direct the evacuation of the building and account for all employees outside at a safe location.

Employees will be warned to evacuate the building using the following system:	
Employees should assemble at the following location for accounting by the evacuation team:	

(Post a map showing the location(s) in a conspicuous location for all employees to see.)

Person who will bring the employee roster and visitor log to the evacuation assembly area to account for all evacuees. The evacuation team leader will be informed if anyone is missing or injured.	
Evacuation Team	Name / Location
Evacuation Team Leader	
Floor Wardens (one for each floor)	
Searchers (one per floor)	
Stairwell and Elevator Monitors	
Aides for Persons with Disabilities	
Assembly Area Monitors (account for evacuees at the assembly area and inform incident commander if anyone is missing or injured)	

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Severe Weather/Tornado Sheltering Plan

If a tornado warning is issued, broadcast a warning throughout all buildings instructing everyone to move to shelter.

Shelter-In-Place Team Assignments	Name / Location
Team Leader	
Person to monitor weather sources for updated emergency instructions and broadcast warning if issued by weather services	

Persons to direct personnel outside to enter the building	
Persons to direct employees to designated tornado shelter(s)	

Tornado Warning System & Tornado Shelter Locations

Location of tornado warning system controls	
Location of tornado shelters	

Shelter-In-Place Plan

If warned to "shelter-in-place" from an outside airborne hazard, a warning should be broadcast and all employees should move to shelter.

Shelter-In-Place Team Assignments	Name / Location
Team Leader	
Direct personnel outside to enter the building; then close exterior doors	
Shutdown ventilation system and close air intakes	
Move employees to interior spaces above the first floor (if possible)	
Person to monitor news sources for updated emergency instructions	
Assembly Area Monitors (to account for evacuees at the assembly area)	

Shelter-In-Place Shutdown of Ventilation System

Location of controls to shutdown ventilation system:	
Location of air handling units, fan rooms, or air intakes:	

Lockdown Plan

Persons trained to use the warning system to warn persons to "lockdown "

Name	Location

Instructions for Broadcasting Warnings

Where to Access the Warning System
(e.g., telephone, public address system, etc.)

Instructions for using the system

Medical Emergency Plan

If a medical emergency is reported, dial 9-1-1 and request an ambulance. Provide the following information:

- Number and location of victim(s)
- Nature of injury or illness
- Hazards involved
- Nearest entrance (emergency access point)

Alert trained employees (members of the medical response team) to respond to the victim's location and bring a first aid kit or AED.

Personnel Trained to Administer First Aid, CPR, or use Automated External Defibrillator (AED)

Name	Location / Telephone

Locations of First Aid Kits and Automated External Defibrillator(s)

Locations of First Aid Kits and "Universal Precautions" kit (used to prevent exposure to body fluids)	
Locations of Automated External Defibrillator(s) (AEDs)	

Procedures

- Only trained responders should provide first aid assistance.
- Do not move the victim unless the victim's location is unsafe.
- Control access to the scene.
- Take "universal precautions" to prevent contact with body fluids and exposure to bloodborne pathogens.
- Meet the ambulance at the nearest entrance or emergency access point; direct them to victim(s).

Fire Emergency Plan

If a fire is reported, pull the fire alarm, (if available and not already activated) to warn occupants to evacuate. Then Dial 911 to alert Fire Department. Provide the following information:

- Business name and street address
- Nature of fire
- Fire location (building and floor or)
- Type of fire alarm (detector, pull station, sprinkler waterflow)
- Location of fire alarm (building and floor)
- Name of person reporting fire
- Telephone number for return call

Evacuation team to direct evacuation of employees and visitors.

Procedures

- Evacuate building occupants along evacuation routes to primary assembly areas outside.
- Redirect building occupants to stairs and exits away from the fire.
- Prohibit use of elevators.
- Evacuation team to account for all employees and visitors at the assembly area.
- Meet Fire Department Incident Commander (IC). Inform the IC if everyone has been accounted for and if there are any injuries. Provide an update on the nature of the emergency and actions taken. Provide building floor plans, keys and other assistance as requested.
- Assign personnel to verify that fire protection systems are operating normally and to operate building utility and protection systems as directed by the fire department.

Property Conservation

Identify preparations before a forecast event such as severe weather.

Identify how you will assess damage; salvage undamaged goods; and cleanup the building following an incident.

Identify the contractors, equipment, and materials that would be needed. Update the resource table at the end of this plan.

Annexes Hazard or Threat-specific Instructions:

Review the following list of hazards and identify those

hazards that are foreseeable.

Review the links to information provided within the Ready Business website to develop specific

emergency procedures.

Natural hazards (geological, meteorological, and biological)

Geological hazards

- Earthquake
- Tsunami
- Volcano
- Landslide, mudslide, subsidence

Meteorological Hazards

- Flood, flash flood, tidal surge
- Water control structure/dam/levee failure
- Drought
- Snow, ice, hail, sleet, arctic freeze
- Windstorm, tropical cyclone, hurricane, tornado, dust storm
- Extreme temperatures (heat, cold)
- Lightning strikes (Wildland fire following)

Biological hazards

- Foodborne Illnesses
- Pandemic/Infectious/communicable disease (Avian flu, H1N1, etc.)

Technology caused event

• Utility interruption or failure (telecommunications, electrical power, water, gas, steam, HVAC, pollution control system, sewerage system, other critical infrastructure)

Accidental

- Hazardous material spill or release
- Nuclear Power Plant Incident (if located in proximity to a Nuclear power plan)
- Explosion/Fire
- Transportation accident
- Building/structure collapse
- Entrapment and or rescue (machinery, confined space, high angle, water)
- Transportation Incidents (Motor Vehicle, Railroad, Watercraft, Aircraft, Pipeline)

Intentional

- Robbery
- Lost Person, Child Abduction, Kidnap, Extortion, Hostage Incident, Workplace violence
- Demonstrations, Civil disturbance
- Bomb threat, Suspicious package
- Terrorism

Human-caused events (accidental and intentional)

Emergency Response Teams

Identify the members of emergency response teams not identified elsewhere.

- Facilities or building management staff familiar with building utility and protection systems and those who may assist with property conservation activities.
- Security
- Others trained to use fire extinguishers, clean up small spills of hazardous materials.

Team	Member Name	Location	Work Telephone	Home/Cell Telephone

Public Emergency Services & Contractors

Emergency Service	Name	Emergency Telephone	Business Telephone
Fire Department			
Emergency Medical Services			
Police Department			
Emergency Management Agency			
Hospital			
Public Health Department			
State Environmental Authority			
National Response Center (EPA)			
Electrician			
Plumber			
Fire Protection Contractor			
Elevator Service			
Hazardous Materials Cleanup			
Cleanup / Disaster Restoration			

	System	Location/Control Panel or Access Point
Warning System	Fire Alarm	
	Public Address	
	Other (describe)	
Notification System	Electronic	
	Telephone call tree	
Communications Capabilities	Telephone	
	Two-way radio	

Warning, Notification & Communications Systems

The following systems are used to warn employees to take protective action (e.g., evacuate, move to tornado shelter, shelter-in-place, or lockdown) and provide them with information. The Communications capabilities enable members of our emergency team to communicate with each other and others.

Fire Protection Systems

Document the fire protection systems including the types of systems, location, area, or hazard protected, and instructions.

System Type	Location	Access Point / Instructions
Sprinkler System	Control Valve	
	Control Valve	
	Control Valve	

Fire Pump		
Special Extinguishing Systems	Computer Room	
	Kitchen	
	Manufacturing Area	

Revision History

Revision No.	Date	Description of Changes	Authorization

Plan Distribution & Access

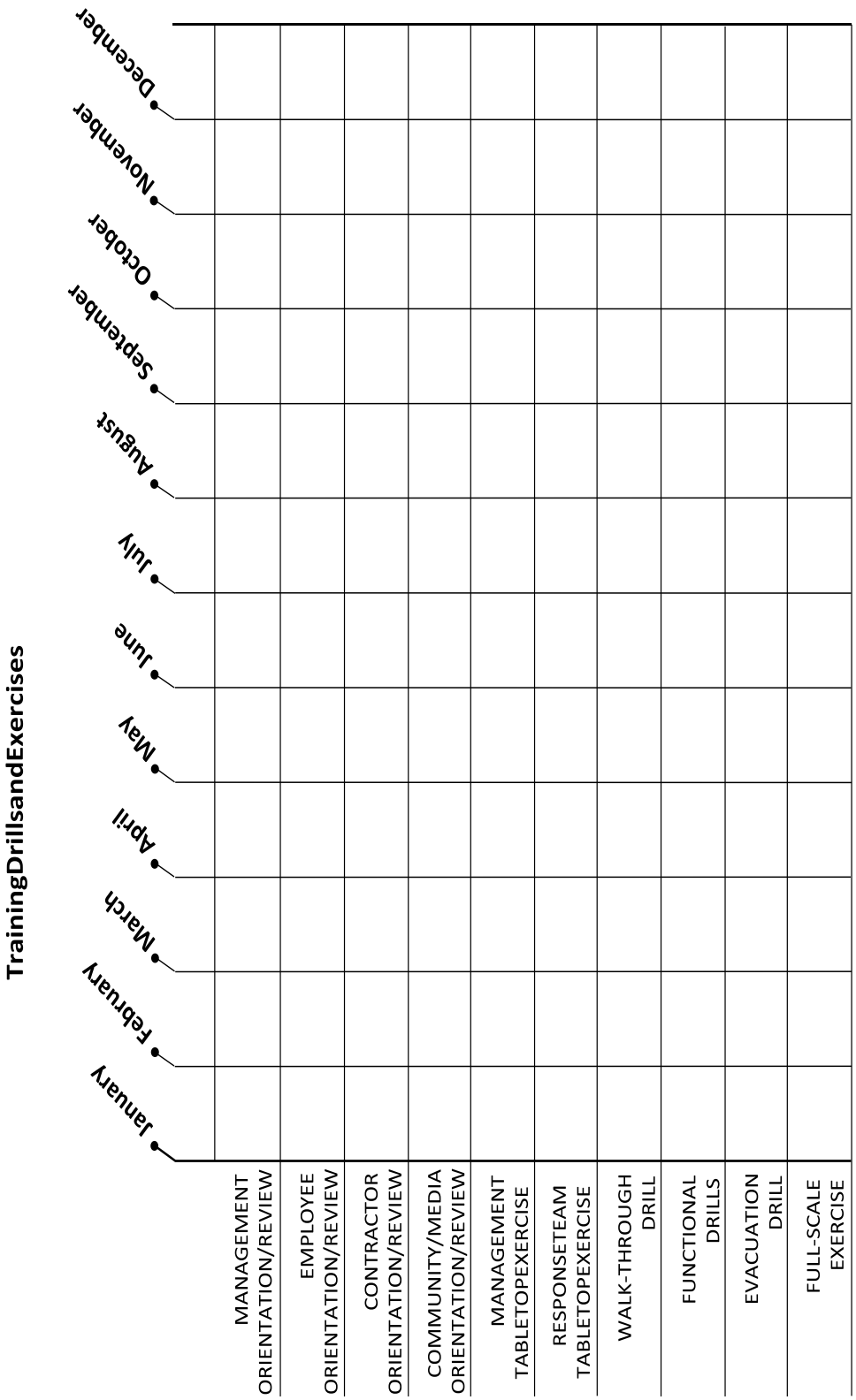
The Plan will be distributed to members of the emergency response team and department heads. A master copy of the document should be maintained by the emergency response team leader. The plan will be available for review by all employees.

Provide print copies of this plan within the room designated as the emergency operations center (EOC). Multiple copies should be stored within the facility EOC to ensure that team members can quickly review roles, responsibilities, tasks, and reference information when the team is activated.

An electronic copy of this Plan should be stored on a secure and accessible website that would allow team member access if company servers are down.

Electronic copies should also be stored on a secured USB flash drive for printing on demand.

Appendix C: The FEMA Emergency Management Guide



Appendix D: Interview Questions

1. What is the percentage of impaired employees at XYZ?
   _____%

2. What do you have in place as part of an emergency response plan at Company XYZ for impaired employees?

	Not in place	Yes, but inadequate or ineffective	Yes, adequate and effective
Program			
Policies			
Procedures			
Trainings			
Drills			
Evaluations			

3. How do you evacuate the impaired employees from the building when there is an emergency?
   _____

4. How do you train your impaired employees about evacuation procedures?
   _____

5. How often do you have a fire drill?
   _____

6. As a manager, what could happen in the company to the employees with disabilities **if** there was an emergency such as a fire?
   _____

7. Regarding emergency response plans for disabled/impaired workers, what recommendations do you have to improve existing management policies?
   _____

Appendix E: OSHA's Develop and Implement an Emergency Action Plan (EAP) checklist

Emergency Action Plan | Emergency Standards | Expert Systems | Additional Assistance

Develop and Implement an Emergency Action Plan (EAP) » Emergency Action Plan Checklist

Print Checklist | Clear Form

GENERAL ISSUES

1. Does the plan consider all potential natural or man-made emergencies that could disrupt your workplace?	☐	Common sources of emergencies identified in emergency action plans include - fires, explosions, floods, hurricanes, tornadoes, toxic material releases, radiological and biological accidents, civil disturbances and workplace violence.
2. Does the plan consider all potential internal sources of emergencies that could disrupt your workplace?	☐	Conduct a hazard assessment of the workplace to identify any physical or chemical hazards that may exist and could cause an emergency.
3. Does the plan consider the impact of these internal and external emergencies on the workplace's operations and is the response tailored to the workplace?	☐	Brainstorm worst case scenarios asking yourself what you would do and what would be the likely impact on your operation and device appropriate responses.

4. Does the plan contain a list of key personnel with contact information as well as contact information for local emergency responders, agencies and contractors?	☐	Keep your list of key contacts current and make provisions for an emergency communications system such as a cellular phone, a portable radio unit, or other means so that contact with local law enforcement, the fire department, and others can be swift.
5. Does the plan contain the names, titles, departments, and telephone numbers of individuals to contact for additional information or an explanation of duties and responsibilities under the plan?	☐	List names and contact information for individuals responsible for implementation of the plan.
6. Does the plan address how rescue operations will be performed?	☐	Unless you are a large employer handling hazardous materials and processes or have employees regularly working in hazardous situations, you will probably choose to rely on local public resources, such as the fire department, who are trained, equipped, and certified to conduct rescues. Make sure any external department or agency identified in your plan is prepared to respond as outlined in your plan. Untrained individuals may endanger themselves and those they are trying to rescue.
7. Does the plan address how medical assistance will be provided?	☐	Most small employers do not have a formal internal medical program and make arrangements with medical clinics or facilities close by to handle emergency cases and provide medical and first-aid services to their employees. If an infirmary, clinic, or hospital is not close to your workplace, ensure that onsite person(s) have adequate training in first aid. The American Red Cross, some insurance providers, local safety councils, fire departments, or other resources may be able to provide this training. Treatment of a serious injury should begin within 3 to 4 minutes of the accident. Consult with a physician to order appropriate first-aid supplies for emergencies. Establish a relationship with a local ambulance service so transportation is readily available for emergencies.
8. Does the plan identify how or where personal information on employees can be obtained in an emergency?	☐	In the event of an emergency, it could be important to have ready access to important personal information about your employees. This includes their home telephone numbers, the names and telephone numbers of their next of kin, and medical information.

EVACUATION POLICY AND PROCEDURES

1. Does the plan identify the conditions under which an evacuation would be necessary?	☐	The plan should identify the different types of situations that will require an evacuation of the workplace. This might include a fire, earthquake, or chemical spill. The extent of evacuation may be different for different types of hazards.
2. Does the plan identify a clear chain of command and designate a person authorized to order an evacuation or shutdown of operations?	☐	It is common practice to select a responsible individual to lead and coordinate your emergency plan and evacuation. It is critical that employees know who the coordinator is and understand that this person has the authority to make decisions during emergencies. The coordinator should be responsible for assessing the situation to determine whether an emergency exists requiring activation of the emergency procedures, overseeing emergency procedures, notifying and coordinating with outside emergency services, and directing shutdown of utilities or plant operations if necessary.
3. Does the plan address the types of actions expected of different employees for the various types of potential emergencies?	☐	The plan may specify different actions for employees depending on the emergency. For example, employers may want to have employees assemble in one area of the workplace if it is threatened by a tornado or earthquake but evacuate to an exterior location during a fire.
4. Does the plan designate who, if anyone, will stay to shut down critical operations during an evacuation?	☐	You may want to include in your plan locations where utilities (such as electrical and gas utilities) can be shut down for all or part of the facility. All individuals remaining behind to shut down critical systems or utilities must be capable of recognizing when to abandon the operation or task and evacuate themselves.
5. Does the plan outline specific evacuation routes and exits and are these posted in the workplace where they are easily accessible to all employees?	☐	Most employers create maps from floor diagrams with arrows that designate the exit route assignments. These maps should include locations of exits, assembly points and equipment (such as fire extinguishers, first aid kits, spill kits) that may be needed in an emergency. Exit routes should be clearly marked and well lit, wide enough to accommodate the number of evacuating personnel, unobstructed and clear of debris at all times, and unlikely to expose evacuating personnel to additional hazards.

6. Does the plan address procedures for assisting people during evacuations, particularly those with disabilities or who do not speak English?	☐	Many employers designate individuals as evacuation wardens to help move employees from danger to safe areas during an emergency. Generally, one warden for every 20 employees should be adequate, and the appropriate number of wardens should be available at all times during working hours. Wardens may be responsible for checking offices and bathrooms before being the last person to exit an area as well as ensuring that fire doors are closed when exiting. Employees designated to assist in emergency evacuation procedures should be trained in the complete workplace layout and various alternative escape routes. Employees designated to assist in emergencies should be made aware of employees with special needs (who may require extra assistance during an evacuation), how to use the buddy system, and any hazardous areas to avoid during an emergency evacuation.
7. Does the plan identify one or more assembly areas (as necessary for different types of emergencies) where employees will gather and a method for accounting for all employees?	☐	Accounting for all employees following an evacuation is critical. Confusion in the assembly areas can lead to delays in rescuing anyone trapped in the building, or unnecessary and dangerous search-and-rescue operations. To ensure the fastest, most accurate accounting of your employees, consider taking a head count after the evacuation. The names and last known locations of anyone not accounted for should be passed on to the official in charge.
8. Does the plan address how visitors will be assisted in evacuation and accounted for?	☐	Some employers have all visitors and contractors sign in when entering the workplace. The hosts and/or area wardens, if established, are often tasked with assisting these individuals evacuate safely.

REPORTING EMERGENCIES AND ALERTING EMPLOYEES IN AN EMERGENCY

1. Does the plan identify a preferred method for reporting fires and other emergencies?	☐	Dialing 911 is a common method for reporting emergencies if external responders are utilized. Internal numbers may be used. Internal numbers are sometimes connected to intercom systems so that coded announcements may be made. In some cases employees are requested to activate manual pull stations or other alarm systems.

2. Does the plan describe the method to be used to alert employees, including disabled workers, to evacuate or take other action?	☐	Make sure alarms are distinctive and recognized by all employees as a signal to evacuate the work area or perform other actions identified in your plan. Sequences of horn blows or different types of alarms (bells, horns, etc.) can be used to signal different responses or actions from employees. Consider making available an emergency communications system, such as a public address system, for broadcasting emergency information to employees. Ideally alarms will be able to be heard, seen, or otherwise perceived by everyone in the workplace including those that may be blind or deaf. Otherwise floor wardens or others must be tasked with ensuring all employees are notified. You might want to consider providing an auxiliary power supply in the event of an electrical failure.

EMPLOYEE TRAINING AND DRILLS

1. Does the plan identify how and when employees will be trained so that they understand the types of emergencies that may occur, their responsibilities and actions as outlined in the plan?	☐	Training should be offered employees when you develop your initial plan and when new employees are hired. Employees should be retrained when your plan changes due to a change in the layout or design of the facility, when new equipment, hazardous materials, or processes are introduced that affect evacuation routes, or when new types of hazards are introduced that require special actions. General training for your employees should address the following: ▪ Individual roles and responsibilities. ▪ Threats, hazards, and protective actions. ▪ Notification, warning, and communications procedures. ▪ Emergency response procedures. ▪ Evacuation, shelter, and accountability procedures. ▪ Location and use of common emergency equipment. ▪ Emergency shutdown procedures. You may also need to provide additional training to your employees (i.e. first-aid procedures, portable fire extinguisher use, etc.) depending on the responsibilities allocated employees in your plan.
2. Does the plan address how and when retraining will be conducted?	☐	If training is not reinforced it will be forgotten. Consider retaining employees annually.

3. Does the plan address if and how often drills will be conducted?	☐	Once you have reviewed your emergency action plan with your employees and everyone has had the proper training, it is a good idea to hold practice drills as often as necessary to keep employees prepared. Include outside resources such as fire and police departments when possible. After each drill, gather management and employees to evaluate the effectiveness of the drill. Identify the strengths and weaknesses of your plan and work to improve it.

Print Checklist | Clear Form

Appendix F: The Risk Assessment Control Form

Company	XYZ	Risk Assessment Completed By	Researcher

Department: Food preparation **Hazards**	**Current Risk Rating**	**Controls**
Chemical hazards: Toxins, corrosives, flammables, and reactive	High Risk	Employees must have training before they come into contact with toxins, corrosives, flammables, and reactive materials
Electrical hazards: shock and fire	High Risk	The company should use grounded outlets.
Non-employees: people who should not be in the place	Significant Risk	Designated employees who have to work in the kitchen
Airborne hazardous materials: Vapors, dust, etc.	Significant Risk	Install proper ventilation.
Slips, trips, and falls	Significant Risk	Change the kitchen floor or install proper kitchen rugs, and provide training for the employees
Improper storage	Significant Risk	Provide training, unneeded items must be removed, and making a list of the items that should be in the kitchen.
Leaving High Heat Unattended	Moderate Risk	Employees should be trained to not leave the oven on and company should install a safety device to protect their employees
Physical hazards: Heating devices, noise, fly objects, fire, and cut.	High Risk	Employees must receive training and wear the proper PPE.

Department: Upholstery and Sewing **Hazards**	**Current Risk Rating**	**Controls**
Ergonomic factors: Standing, repetitive motion	High Risk	Company should provide the proper chairs and desks and increase the repetitive motion
Airborne hazardous materials: Vapors, dust, etc.	High Risk	Install proper ventilation.
Improper storage	Moderate Risk	Provide training, unneeded items must be removed, reorganized the department.
Electrical hazards: shock and fire	High Risk	There is more than one solution for the issue here and the active solution is to provide an overhead chase or drop to divert the cords off the floor
Mechanical hazards: Moving machinery	Significant Risk	The company must separate the walkway from the forklift path by using guards, and they must repaint the floor and maintain that annually.
Housekeeping	Moderate Risk	Each employee has to clean and organize his or her work area. Then each employee should use a self-checklist to inspect the area and report to his or her supervisor.
Chemical hazards: Toxins, corrosives, flammables, and reactive	High Risk	All chemicals should have safety data sheets in the facility and containers have to be properly labelled.

Department: Custodial **Hazards**	**Current Risk Rating**	**Controls**
Airborne hazardous materials: Vapors, dust, etc.	High Risk	Employees must receive training and wear the proper PPE
Improper storage& Housekeeping	Moderate Risk	Each employee must clean, store her/ his tools properly, and organize his or her work area. Then each employee should use a self-checklist to inspect the area and report to his or her supervisor.
Electrical hazards: shock and fire	High Risk	The company should use grounded outlets.
Physical hazards: Heating devices, noise, fly objects, fire, slips, trips, and falls.	Significant Risk	Employees must receive training and wear the proper PPE.
Chemical hazards: Toxins, corrosives, flammables, and reactive	High Risk	All chemicals should have safety data sheets in the facility, containers have to be properly labelled, and storage properly.

Department: Shipping and Receiving **Hazards**	**Current Risk Rating**	**Controls**
Airborne hazardous materials: Vapors, dust, etc.	High Risk	Install proper ventilation and use air monitor.
Electrical hazards: shock and fire	High Risk	The company should use grounded outlets.
Mechanical hazards: Moving machinery	Significant Risk	The company must separate the walkway from the forklift path by using guards, and they must repaint the floor and maintain that annually.
Physical hazards: Heating devices, noise, fly objects, fire, and slips, trips, and falls.	Significant Risk	Employees must receive training and wear the proper PPE.

Department: Woodworking Hazards	Current Risk Rating	Controls
Airborne hazardous materials: Vapors, dust, etc.	High Risk	Install proper ventilation, wear proper PPE, and use air monitor
Improper storage& Housekeeping	High Risk	Each employee must clean, store her/ his tools properly, and organize his or her work area. Then each employee should use a self-checklist to inspect the area and report to his or her supervisor.
Electrical hazards: shock and fire	High Risk	The company should use grounded outlets.
Mechanical hazards: Moving machinery	Significant Risk	The company must separate the walkway from the forklift path by using guards, and they must repaint the floor and maintain that annually.
Physical hazards: Heating devices, noise, fly objects, fire, slips, trips, and falls.	Moderate Risk	Employees must receive training and wear the proper PPE.
Chemical hazards: Toxins, corrosives, flammables, and reactive	High Risk	All chemicals should have safety data sheets in the facility, containers have to be properly labelled, and storage properly.

Department: Pizza facility **Hazards**	**Current Risk Rating**	**Controls**
Improper storage& Housekeeping	Moderate Risk	Each employee must clean, store her/ his tools properly, and organize his or her work area. Then each employee should use a self-checklist to inspect the area and report to his or her supervisor.
Electrical hazards: shock and fire	High Risk	There is more than one solution for the issue here and the active solution is to provide an overhead chase or drop to divert the cords off the floor. The company should use grounded outlets.
Physical hazards: Heating devices, noise, fly objects, fire, slips, trips, and falls.	Moderate Risk	Employees must receive training and wear the proper PPE.
Chemical hazards: Toxins, corrosives, flammables, and reactive	High Risk	All chemicals should have safety data sheets in the facility, containers have to be properly labelled, and storage properly.

Department: Packaging and Assembly Hazards	Current Risk Rating	Controls
Ergonomic factors: Standing, repetitive motion	Significant Risk	Company should provide the proper chairs and desks and increase the repetitive motion
Airborne hazardous materials: Vapors, dust, etc.	Moderate Risk	Install proper ventilation, wear proper PPE, and use air monitor
Improper storage& Housekeeping	High Risk	Each employee must clean, store her/ his tools properly, and organize his or her work area. Then each employee should use a self-checklist to inspect the area and report to his or her supervisor.
Electrical hazards: shock and fire	High Risk	There is more than one solution for the issue here and the active solution is to provide an overhead chase or drop to divert the cords off the floor. The company should use grounded outlets.
Mechanical hazards: Moving machinery	High Risk	The company must separate the walkway from the forklift path by using guards, and they must repaint the floor and maintain that annually.
Biological hazards: Microbes and animals	Moderate Risk	The company should check every place for insects or other pests and train employees for pesticide and pest control. Another option is that the company can hire a pest control company to control the problem.
Chemical hazards: Toxins, corrosives, flammables, and reactive	Significant Risk	All chemicals should have safety data sheets in the facility, containers have to be properly labelled, and storage properly.

Department: Print Shop Hazards	Current Risk Rating	Controls
Ergonomic factors: Standing, repetitive motion	High Risk	Company should provide the proper chairs and desks and increase the repetitive motion
Airborne hazardous materials: Vapors, dust, etc.	High Risk	Install proper ventilation, wear proper PPE, and use air monitor
Improper storage& Housekeeping	Significant Risk	Each employee must clean, store her/ his tools properly, and organize his or her work area. Then each employee should use a self-checklist to inspect the area and report to his or her supervisor.
Electrical hazards: shock and fire	High Risk	The company should provide an overhead chase or drop to divert the cords off the floor. The company should use grounded outlets and proper cables.
Environment hazards: waste chemical and contaminations.	Significant Risk	Employees should be trained to deal with chemicals waste disposal. There needs to be recycling containers and training for employees how to designate between recyclable materials and other waste materials.
Radiation hazards: Nonionizing radiation and ionizing	Moderate Risk	Employees must receive training and wear the proper PPE.
Physical hazards: Heating devices, noise, fly objects, fire, slips, trips, and falls.	Moderate Risk	Employees must receive training and wear the proper PPE.
Chemical hazards: Toxins, corrosives, flammables, and reactive	High Risk	All chemicals should have safety data sheets in the facility, containers have to be properly labelled, and storage properly.

Appendix G: Risk Control Matrix

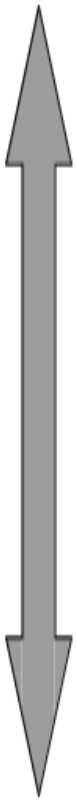
RISK ASSESSMENT RATING – Use this table to determine a risk rating

1) What is the worst possible CONSEQUENCE of this hazard?
2) What is the LIKELIHOOD of this occurring?

RISK RATING	LIKELIHOOD				
CONSEQUENCE	**Rare** The event will **only occur in exceptional** circumstanc	**Unlikely** The event is **not likely to** occur in a year	**Possibly** The event **may occur** within a year	**Likely** The event is **likely to occur** within a year	**Almost Certain** The event is **almost certain to occur** within a year
Catastrophic (Accidental death / serious injury)	Significant Risk	Significant Risk	High Risk	High Risk	High Risk
Major (Serious injury)	Low Risk	Moderate Risk	Significant Risk	High Risk	High Risk
Moderate (Lost time due to workplace injury)	Low Risk	Low Risk	Moderate Risk	Significant Risk	High Risk
Minor (Minor workplace injury – no lost time)	Low Risk	Low Risk	Low Risk	Moderate Risk	Significant Risk
Minimal (No injury)	Low Risk	Low Risk	Low Risk	Low Risk	Moderate Risk

HIERARCHY OF CONTROLS

Start at the top and work down



Elimination
E.g. Discontinue use of product, equipment, cease work process

Substitution
E.g. Replace with a similar item that does the same job but with a lower hazard level

Isolation
E.g. Put a barrier between the person and the hazard

Engineering controls
E.g. Change the process, equipment or tools so the risk is reduced

Administration controls
E.g. Guidelines, procedures, rosters, training etc. to minimize the risk

Personal protective equipment
E.g. Equipment worn to provide a temporary barrier