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Employee Emergency Action Planning

Introduction

Safety, and health has come a long way and continues to evolve as design and architecture, technology, building materials and purpose to name a few, influence what we build and how we utilize what was constructed.

From small to large or whether it is a small street and road project, a Highrise mixed-use building, datacenter or food processing plant as examples, each has its own specific characteristics that affect the safety and health programs implemented to keep workers and the public safe.

Implementing a proactive and effective project or facility specific safety and health plan is difficult enough; but do you also take into account:

- What if an accident, incident or dangerous weather event occurs?
- Who is notified and how?
- Does it rise to the occasion of a total evacuation of the project site or a specific location?
- How is that determined and by who?
- Do you have evacuation points, are they marked and are the workers trained and know to use them?
- Where do the workers muster if an evacuation is called for?

These are but a few of the questions you must ask when creating an effective and efficient Employee Emergency Action Plan for your project and answers you need to know and incorporate into your plan when adhering to an existing facility's program.

Overview:

A key element of your project specific safety and health plan is the Employee Emergency Action Plan. Many factors play into the simplicity or complexity of the plan needed for a specific location. These can include but not limited to:

- Municipality and local requirements
- State and Federal requirements based on industry
- Size and diversity of the project being constructed
- Project and Local Emergency Response availability
- Limitations to access, egress and routes to and from the project
- Environmental factors such as adverse weather (Hurricanes and Tornados), earthquakes, flooding, and noise
- Limitation to identify an emergency and to respond due to visibility and line of site issues, both inside any structures and out

Depending on what is needed specific to your project location, it is important that you create and implement a plan that takes into account those factors that directly impact the plan and provide for potential alternatives. As your project evolves, so to must the Emergency Action Plan.

The following are minimal requirements for your Employee Emergency Action Plan. Ensure you not only comply with Occupational Safety and Health Administration (OSHA) requirements, but all state, federal or agency specific requirements that may also apply to your project.

Minimum Elements To Be Included In The Plan:[1]

- Emergency escape procedures and emergency escape route assignments
- Procedures to be followed by employees who remain to operate critical plant operations before they evacuate
- Procedures to account for all employees after emergency evacuation has been completed
- Rescue and medical duties for those employees who are to perform them
- The preferred means of reporting fires and other emergencies
- Names or regular job titles of persons or departments who can be contacted for further information or explanation of duties under the plan

Alarm system:[1]

- The employer shall establish an employee alarm system.
  - If the employee alarm system is used for alerting fire brigade members, or for other purposes, a distinctive signal for each purpose shall be used.[1]

In addition, the OSHA Fire Protection Standard[4] states, an alarm system, e.g., telephone system, siren, etc., shall be established by the employer whereby employees on the site and the local fire department can be alerted for an emergency. The alarm code and reporting instructions shall be conspicuously posted at phones and at employee entrances.[4]

Using signaling devices such as air horns, phone/cell phone notifications and word of mouth have their limitations such as wireless signal strength, distance, structural design, confinement, and the ability of the device (cell phone) to be heard. As a result, it may be necessary to use redundant actions to ensure everyone on the site hears the alarm and can react.

Evacuation:[1]

The employer shall establish in the emergency action plan the types of evacuation to be used in emergency circumstances.[1]

Many times, a project involves the renovation or addition to existing facilities, or the project is in close proximity to other properties in which the owner must maintain operations. In these circumstances, the proximity of the project may place non-construction workers and the public within the evacuation zone requiring additional coordination, and planning to ensure all those affected by the evacuation are considered and safely removed from the area.

Examples of these situations include locations such as hospitals, entertainment venues, manufacturing plants, shopping malls etc.

The Evacuation aspect of the plan should ensure all those impacted by the evacuation are not placed into additional harm's way as a result of poorly planned and identified, egress points, evacuation routes and muster areas. For example, blocked or incomplete stairwells, locked or blocked exit doors, routes that force evacuees through or in close proximity to a dangerous area etc.

An easily overlooked area of responsibility to consider is what critical/essential operations or equipment may be operating at the time of the emergency evacuation order and may require workers to temporarily remain behind in order to complete a controlled shut down vs. dropping everything and leaving running equipment or dangerous activities unsafe. Depending on the project or facility where the work is taking place, there may be equipment in operation that cannot be shut down but rather made safe.

The construction site, daily activities and operating equipment will continuously evolve as the project progresses, so an

understanding of what activities are underway and where on a daily basis is essential to effectively addressing this risk. Procedures should be in place that address any conditions or required equipment that cannot be left in place immediately upon the evacuation order.

As the project evolves, so to do access and egress points, designated exits and planned evacuation routes. Depending on the type of emergency taking place on site, conditions can be dramatically different within and around the project and structures. For example, a fire located within an enclosed structure can cause smoke on that floor to limit visibility. Inadequate exit and route markings, and deficient emergency lighting can easily increase tensions, add to the confusion and chaos, potentially preventing workers from being able to evacuate to a safe space without additional injuries. The project plan should address all exit and planned evacuation route markings to ensure they are maintained and appropriate for the location in which they are utilized.

Training:[4]

- Before implementing the emergency action plan, the employer shall designate and train a sufficient number of persons to assist in the safe and orderly emergency evacuation of employees.
- The employer shall review the plan with each employee covered by the plan at the following times:
  - Initially when the plan is developed
  - Whenever the employee's responsibilities or designated actions under the plan change, and
  - Whenever the plan is changed.
- The employer shall review with each employee upon initial assignment those parts of the plan which the employee must know to protect the employee in the event of an emergency. The written plan shall be kept at the workplace and made available for employee review.
- For those employers with 10 or fewer employees the plan may be communicated orally to employees and the employer need not maintain a written plan.

With a multi-lingual workforce, employers must present information to workers in a manner that employees are able to understand. This should be considered when establishing the Emergency Action Plan training, postings and other communications for the site.[5]

Periodic Drills and Practice Runs:

Once the plan is drafted, a next step would be to hold practice evacuation drills and test runs. This involves running the project through the plan's steps and procedures looking for weaknesses, gaps in the plan and other improvement areas such as visibility of exit markings and evacuation routes, alarms and communications, or other concerns needing to be addressed.

These drills can be full-scale where the entire site participates, can be administrative only or partial, where only certain aspects of the plan are tested such as the alarm and communication system, or a specific location of the project. Pre-planning and effective communication will be necessary to prevent confusion on the site and potential injuries if workers are not aware of the practice drill and perceive the drill as a real event.

Drills should be completed at the outset initially to validate and formalize the final plan, followed by periodic drills as deemed necessary by project management to continue to evaluate the plan's effectiveness and completeness. As the project evolves, exit routes, route and exit markings, numbers of contractors and workers, and layout of the project will all change; these routine practice drills help to maintain the plan and its effectiveness should a real event and evacuation occur.

Always remember to pre-plan and provide advance notice of any evacuation drill. Schedule the drill well in advance, provide communication to all project contractors and workers as well as local first responders and adjacent property owners as necessary so all affected parties understand this is a practice drill and not a real evacuation or dangerous event.

Additional considerations to supplement the Employee Emergency Action Plan:

Rescue Planning and Operations:

In addition to the minimal requirement to include rescue and medical duties for those employees who are to perform them, does the site have a backup plan? What if these functions, due to the conditions and severity of the emergency, cannot be completed by those working at the site?

Emergency Rescue planning should be an integral aspect of the project safety program and Emergency Action Plan. Whether it is planning for a fall from height rescue, confined space rescue or other potential rescue scenario determined at the site, the plan should contain contingencies for external Rescue from trained responders. This coordination and planning may include but not be limited to project tours, providing maps laying out potential rescue scenario locations with access and egress points, providing updated project schedules, agreed upon communication protocols and response needs with local responders. This will provide responders the opportunity to train those on the response teams, address any issues or concerns they identify, plan for, and have the appropriate equipment at the ready should they be called for assistance.

On-Site Medical Care and Telemedicine:

An important aspect of your project's Employee Emergency Action Plan is the preparation and planning for the medical care provided to your workers should they become injured on the job.

On-site medical care and telemedicine can help ensure injured workers receive the care necessary to treat their injuries and help ensure this care is administered as quickly as possible. These services help ensure care is provided by qualified medical staff, and the patient is given the attention they need to resolve their concerns. Maintaining a positive experience for the injured worker helps to reduce undue stress as they navigate their treatment. Workers who feel they are being taken care of by their employers will be more open to limited duty options to bring them back to work sooner, will be likely to respond to treatment options and may be less likely to seek legal avenues if they are being well taken care of.

Typically, the employer will identify medical treatment locations near the project and provide this information to the workers in the event of an injury. Many times, the insurance carrier can provide their recommendations for treatment facilities they have had positive experience with and may also have agreed upon treatment cost schedules to help lower overall claims costs.

There are also times when your project is remote, where there are no medical treatment facilities in close proximity to the project or the project determines a need to provide onsite medical care where alternative medical care may be necessary or at least helpful. With the advances in technology today, there are options available where the use of telemedicine and or full-time onsite medical staffing may be the right fit for your project.

With the use of computers or mobile devices, telemedicine offers the convenience of being able to reach qualified medical staff around the clock. This enables medical professionals to speak to onsite first aid providers and to the injured worker directly. They will have the capability through video, to view the injury in real time to make an informed diagnosis for the worker and recommend next steps in the treatment process.

Depending on the need, you may also choose to staff the project with full-time onsite medical personnel who can provide immediate first aid, stabilize worker injuries and facilitate emergency evacuation of a worker should it be necessary. In addition to onsite care, some of these firms can provide other onsite occupational related functions such as administering drug and alcohol screenings if your project requires substance abuse testing, perform respiratory fit testing, EKG screening, provide routine health and wellness information to the workers, assist in identifying potential illnesses such as COVID, the flu, pneumonia, and heat related illnesses. These onsite medical personnel typically work within a designated and customized office location on the site that would be stocked with the supplies and equipment necessary to perform their intended scope of care.[2]

Emergency Response Applications and Wearables:

There are phone applications (Apps) available that can be set up to provide messaging alerts, but cell service and signal strength can pose challenges. In addition, any sound alerts would be subject to the ability of the phone's speakers and volume decibel capability which may be insufficient in some locations.

The use of proximity devices either being tested, adopted, or considered by companies is on the rise. Proximity devices are systems that monitor, and sense other objects fitted with sensors, such as persons or equipment, and provide a notification when they enter a pre-determined area or relative proximity. These sensors trigger the system which relays information depending on the purpose of the system.

These sensors can also be used to create and supplement an emergency action plan for a building under construction by monitoring the number of workers on the site and their locations as well as assist the safety and claims department. Some proximity devices also have sensors that can monitor acceleration and position and provide notification when a worker wearing one is involved in an incident.

Some of the monitoring systems technology available today may have wearable devices that are linked to an emergency response capability which will identify each wearer's specific location within the project as well as alert workers via an audible alarm, from a vibration and visual notification (flashing light). The system's "network" is established on each level and throughout the project so there is little or no signal loss; the alerts are not prevented from activating and functionality is not interrupted.[2]

Automated External Defibrillator or AED:

Although not typically thought about when considering the construction technology market, you cannot forget to include lifesaving devices such as the Automated External Defibrillator or AED.

AEDs are used to revive someone from sudden cardiac arrest. This usually occurs when a disruption in the heart's electrical activity causes a dangerously fast heartbeat (ventricular tachycardia) or a fast and irregular heartbeat (ventricular fibrillation). Either of these irregular heart rhythms keeps the heart from pumping effectively and can cause it to stop. When this happens, the brain and other vital organs don't get the blood and oxygen they need. This requires treatment within minutes to prevent death. The sooner the heart's rhythm is restored, the greater the chance there won't be permanent damage to the brain and other organs.

If an AED is near someone having ventricular fibrillation or ventricular tachycardia, a bystander in a public place, a family member or a co-worker can use it to jolt the heart back to a regular rhythm. Using the AED could possibly save a life.[3]

Closing:

As noted in this guide, a significant amount of planning and preparation may need to go into an Employee Emergency Action Plan. This aspect of the Project Safety and Health Program should not be relegated to the last minute before attempting to put all of the pieces together.

Once a project is awarded, an employer should, as soon as practical begin to identify the specific aspects of the project and surrounding area to include emergency services, muster areas, understanding of safe access and egress points, affected workers and public etc., so plans can be drafted.

Depending on the type and location of the project, coordination between the project as well as facility or building management, and adjacent properties may need to take place to ensure efficient evacuation from the project to designated safe spaces, ensure emergency services can access the site, and all affected parties can be included in appropriate Emergency Action Plans.

References:

1. US Department of Labor – OSHA General Safety and Health Provisions/Employee Emergency Actions Plans; https://www.osha.gov/laws-regs/regulations/standardnumber/1926/1926.35
2. Chubb Construction Risk Engineering – Construction Resource Guide – Emerging Technologies
3. https://www.mayoclinic.org/diseases-conditions/heart-arrhythmia/in-depth/automated-external-defibrillators/art-20043909
4. US Department of Labor – OSHA 1926.150 (e), (e) (1) and (e) (2) Fire Alarm Devices
5. US Department of Labor – OSHA Letter of Interpretation; Letter # 20071001-7893; July 26, 2010

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