

# PPE Can Be MVP In Workplace Safety

*Personal protective equipment can help keep your workers out of harm's way.  
However, this type of equipment is typically overlooked.*

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**O**utstanding safety performance on wind projects begins long before a development is commissioned. It is the product of extensive, coordinated pre-planning that addresses the well-being of workers, customers, landowners and the public.

A sound safety approach has many key components. Hazards exist in every workplace in many different forms: sharp edges, falling objects, flying sparks, chemicals, noise and a myriad of other potentially dangerous situations. The Occupational Safety and Health Administration (OSHA) requires that employers protect their employees from workplace hazards that can cause injury.

Controlling a hazard at its source is the best way to protect employees. Depending on the hazard or workplace conditions, OSHA recommends the use of engineering or work practice controls to manage or eliminate hazards to the greatest extent possible. For example, building a barrier between potential hazards and employees is an engineering control; changing the way in which employees perform their work is a work practice control.

When engineering, work practice, and administrative controls are not feasible or do not provide sufficient protection, employers must provide personal protective equipment (PPE)

to their employees and make sure that it is used. PPE is worn to minimize exposure to a variety of hazards. Examples of PPE include gloves, foot and eye protection, protective hearing devices – such as earplugs – hard hats, respirators and full body suits.

However, PPE usage is too often considered the last thing to do in the scheme of hazard control. But it can provide valuable added protection to the employee even when the hazard is being controlled by other means. In some situations, the only available protection will be the use of PPE, and it is often required in case of emergency. Regardless of the situation, PPE should be considered a vital aspect of the overall safety plan.

## **Fall protection**

Falls represent one of the major risks in wind work. Working at high heights is an inevitable component of wind farm construction. Any time a worker is at a height of six feet or more (in the construction industry) or four feet or more (in the general industry), the worker must be protected.

Erecting a tower involves the use of the ladder system installed in the individual sections of the tower. Some towers have a vertical fall protection system in place. In towers that do not have such a system, workers can use the ladder system, along with a full

body harness and lanyard, as a means of fall protection.

Work on the nacelle often involves the installation of electrical control units, which requires cabling to be installed through the length of the tower. So, at a minimum, a full body harness and lanyard will be required.

Once a worker needs to go outside or atop the nacelle to access the hub or blades, the risks significantly increase, and he or she has to use an anchorage – either permanent or temporary – such as a self-contained vacuum anchor. Blade cleaning, an essential part of ongoing maintenance routines, can be an extremely difficult job and requires specialty access equipment and rope access techniques.

Fall protection equipment for the wind industry is evolving into job-specific designs with global applications. Wind energy is one of the fastest-growing industries in the world. This means that wind power is becoming one of the largest sources of new electricity generation. As the market grows, so does the need for fall protection equipment for workers.

More workers on the job site means that fall protection manufacturers must keep up with the unique challenges that this industry demands. Harnesses, lanyards, climbing systems and rescue systems must be designed to meet global requirements for fall

protection equipment used during tower construction, maintenance and rescue situations.

Wind turbine manufacturers often send wind teams around the world to buy and maintain several sets of fall protection equipment to meet several different countries' safety standards. However, this is expensive, time-consuming and inefficient. The new trend in fall protection equipment is globalization. Globalized items allow workers to travel anywhere in the world without having to swap sets of fall protection equipment, which reduces both costs and transportation issues.

It is imperative that workers have versatile, high-quality equipment that meets international safety standards wherever possible. In addition to developing new fall protection products that meet all of these main standards, manufacturers are retooling existing harnesses and lanyards to be globally certified.

### **Tower rescue**

Working at such great heights requires extra preparation in case of a fall. If an accident were to occur near the top of a tower, rescue from the ground can be nearly impossible using conventional rescue tactics. Wind farms are normally located in rural areas where traditional emergency crews may be unable to respond in a timely fashion. Also, the emergency services crew may lack the appropriate equipment, which is why site-specific equipment and trained personnel must be available at all times.

When it comes to tower rescue, keep it simple. This ensures that emergency response is precise and focused. If your organization does not have the necessary experience to develop an in-house tower rescue program, there are many companies that specialize in training workforces specifically on tower rescue.

However, do research prior to hiring any training company, and define what is needed beforehand. When drilling the emergency response team

on tower rescue, potential scenarios associated with the project site should be discussed. Identify the most effective approaches to deal with those scenarios and then explain how to configure emergency equipment in a simple fashion.

When evacuation is necessary, self-rescue, personal evacuation and casualty evacuation equipment should be available to get workers down safely. The turbine should also be equipped with self-rescue and casualty evacuation equipment for multiple users inside the nacelle in the event of an emergency.

It is also critical to keep in mind that during a rescue situation, time is always of the essence. That is precisely why a rescue plan and training also need to be in place – especially in the event of a fire or a total mechanical failure. The rescue plan should always be developed before beginning work on any tower. In addition, the plan should outline all possible scenarios and hazards that could occur during installation and maintenance. All rescue and evacuation equipment should be easy to use and quick to deploy.

In addition to having a thorough rescue plan, workers must be completely familiar with the tactics and trained on how to execute the actions of the plan. The ideal training program consists of hands-on participation and classroom time. All training must incorporate how to identify hazards, create fall protection programs and choose the proper equipment in the event of a rescue situation.

Major topics that should be covered in training include the following:

- Fall protection and rescue system assessments;
- Applicable industry standards related to fall protection and rescue;
- Fall hazard elimination and control methods;
- Fall hazard surveys and procedures;
- Development and implementation of fall protection and rescue plans and programs; and
- Proper selection, inspection, use and maintenance of fall pro-

tection and rescue equipment and procedures.

Local emergency management personnel are increasingly becoming educated about wind tower rescue. Those rescue teams are being outfitted with safety gear to conduct rescues from wind farm turbines if there is a fire or if a person passes out (from heat exhaustion, for example) or suffers cardiac arrest.

### **Public safety**

The safety of landowners and curious residents of areas where wind project construction takes place should be a major priority. However, the planning and implementation of good safety practices is not a way to keep the public at arm's length. To the contrary, it contributes to the promotion of a safe environment. One example of such a practice is making sure that extra PPE is available for all visitors to the site.

Another practice involves directing landowners to project personnel knowledgeable about safe observation distances. Additionally, educating crews about tools, such as safety briefing sheets and the job hazard analysis, has positive implications for all visitors to the site, whether they are employees, customer representatives, landowners or inquisitive members of the general public.

Risk is inherent in multiple aspects of a wind farm project and potentially impacts workers, customers, landowners and the public. Outstanding safety performance, therefore, does not just happen. It reflects a cultural and operational commitment on the part of those responsible for planning and executing the work to provide the skilled personnel, training and equipment necessary to protect all of those involved. **SYIP**

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