



THE EXPERTS IN SUBSTATION SAFETY

057 866 2162 📞

Contact Us ✉

Electric Substation Personal Protective Equipment (PPE)

Posted on May 3, 2021

Substation safety awareness has been gaining prominence, have a read through this in-depth look into several aspects of substation safety, primarily focusing on personal protective equipment (PPE) essentials, risks, danger-tackling tips and training requirements.

Personal protective equipment is an integral part of substation safety requirements. It serves to provide adequate protection against hazards of different severity levels that personnel are likely to be exposed during their routine jobs at the substation. It is the responsibility of the employer to accurately assess the various risks in the work environment, determine their severity and accordingly choose PPEs that offer the best protection. The choice of PPEs must be based on the findings of the most recent arc flash analysis and risk assessment exercise to provide effective cover.

PPES REQUIRED TO ENTER A SUBSTATION

PPE is a key part of **safety precautions in substations**.

Most utilities and industrial firms spell out PPE requirements, usage and maintenance instructions as a part of their safety protocol. Employers must make sure the PPEs available on site include:

- Hard hats (with full/partial brims as necessary)
- Safety glasses with side shields
- Face shields** and masks
- Suitable footwear (safety/steel-toed boots, rated dielectric footwear)
- Insulating gloves** (rated, used along with leather/cloth linings for shock protection)
- Insulated tools
- Electrical/insulation blankets
- Live-line tools/hot sticks

Batteries and other chemicals that find use in substations pose a chemical hazard in the environment, which may require the use of respirators and other chemically resistant PPEs, clothing, gloves and footwear to safeguard personnel.

Specialized equipment designed for use in confined/cramped spaces, barricades, scaffolding, gas/smoke detectors must also be available on demand.



TACKLING VISIBLE AND HIDDEN DANGERS

Potential electrical hazards at a substation are not to be taken lightly. While all danger areas and high-voltage equipment/installations are usually enclosed, shielded from access or prominently labelled, there are several other imminent hazards throughout the place that need to be tackled on a daily basis.

Not all live transmission lines, equipment or components within the substation are insulated as in conventional wiring. Accidental contact or even breaching the recommended minimum access distance can prove quite dangerous in certain areas. Even insulated components/parts are likely to be energised during an arc-flash, posing a serious safety threat to those in contact with the component or in the path of the arc, and not adequately protected.

Residual energy in certain parts of de-energised equipment is another latent threat that catches people off guard. Actuators and springs in the breakers may not be fully discharged even after power supply to the equipment has been shut off, making the use of recommended PPEs mandatory to avoid undue surprises.

It is important for personnel to keep in mind the PPEs do not totally mitigate the impact of hazards and are not replacements for safety protocols and procedures. De-energising equipment (risky in few cases), maintaining prescribed clearances and remote operations wherever possible are bound to ensure safe working conditions. Donning an arc-flash rated suit will at best reduce impact of the incident and, hence, the overall severity of injuries – only if adequate precautions are taken and safety procedures followed.

TRAINING ON USE AND MAINTENANCE OF PPEs

Apart from providing the right arc-rated PPEs for the job, employers must also ensure that all employees who have access to the substation, especially restricted, high-risk areas within are trained on:

- The safety and emergency procedures
- Likely hazards on specific tasks and how to use PPEs in a proper manner for personal safety
- Inspection of PPEs for any damages that may compromise the level of protection
- Maintenance and care of PPEs. Read our guide on **how to wash PPE** for more information.

PRO-ACTIVE PERSONAL PROTECTION

Substation workers must strictly adhere to safety regulations and use the right PPEs that offer best protection against risks involved in a specific task. This is to safeguard themselves from imminent hazards to which they are likely to be exposed.

Complacency can prove fatal. Even the most experienced and qualified personnel on site may not be able to anticipate an arc-flash. It is never safe to enter the work area without adequate precautions. Customary inspections are mandatory to ensure de-energisation and grounding. It is mandatory to maintain the recommended clearance from live units, wear the necessary protective garments and gear, and follow instructions meticulously when inside the substation. Workers must take time to carefully inspect the PPEs before use, report damages if any, and get the units replaced/ repaired/ tested for safety.

PPEs, along with comprehensive safety regulations, go a long way in protecting substation personnel in their daily work routine. Ensuring a safe work environment, in practice, is a mutual responsibility of both the employer and employee.

For further information, contact us on **057 866 2162** or **email us** here. We would be happy to answer any questions you might have.



© Copyright 2022 | [Terms & Conditions](#) | [Privacy Policy](#) | [Data Protection Policy](#) | [Cookie Policy](#)