



Daffodil International University
Department of Electrical & Electronic Engineering
Course Code: EEE 450
Course Title: Power Plant Engineering Lab.

Lab. Experiment 2: Familiarization with PPE (Personal Protective Equipment) for Power plant operators.

Objective: To be familiar with the various apparatus or equipment of personal protection for working condition in the Power Plant.

Theory: Power plants are much safer than they once were; however, plant employees still encounter hazards. Training, along with proper operation and maintenance procedures, are key to reducing accidents and mitigating their effects. The workers, who help to produce, install and maintain the equipment needed to process power plant activities have to face unique work hazards.

National Safety Apparel's solutions for power generation safety apparel can protect workers in many of these industries from hazards that can and have caused serious injuries and fatalities. Power generation safety PPE solutions include protection in the event of arc flashes, flash fires in natural gas-fired power plants as well as electric shock, heat and cold stress from working in extreme weather conditions.

List of various Personal Protective Equipment (PPE) for particular task and hazards are given below:

Tasks, Job Classification or Workstation	Potential Hazard	Type of PPE Required
Power Plant work	Hot surfaces, contact with surfaces (head), noise	Heat resistant gloves, hard hats, hearing protection
Power Plant lab work	Corrosive chemicals, splash	Safety glasses, chemical resistant gloves, apron. When pouring large quantities of chemicals, a face shield and goggles.
General Maintenance Work	Rough surfaced materials, lifting/carrying	Cut/puncture resistant gloves, safety glasses, safety shoes
Machine Tools (drills, grinders and saws)	Flying particles	Safety glasses
Tunnel Work	Contact (head) restricted access areas, heat stress, hot surfaces	Hard hat, light clothing, temperature
Arc Welding or Cutting	Electric shock, metal sparks, molten and hot metal, UV, IR and visible light, falling dropping,	Insulating mats or blankets, insulated/heat and puncture/cut resistant gloves, safety shoes, hard hat, safety glasses, welding shield or helmet

		rolling and sharp objects	with appropriate eye shade.
Oxy-fuel Welding or Cutting		Metal sparks, molten and hot metal, UV, IR and visible light, falling, dropping, rolling and sharp objects	Heat and puncture/cut resistant gloves, safety shoes, hard hat, safety glasses, welding shield or helmet with appropriate eye shade
Low Voltage Electrified Equipment Work		Electric shock, falling	Electrically insulated gloves (rated for voltage of energized equipment), insulated blankets or mats, non-synthetic work clothing, fall protection when working at elevations.
High Voltage Electrified Equipment Work		Electric shock, arc, explosion and burns, falling, confined spaces, vehicles in traffic areas	Hard hat, safety glasses, face shield, insulated gloves (rated for voltage of energized equipment), insulated blankets or mats, nonsynthetic work clothes, safety shoes, fall protection when working at elevations



Fig: Personal Protective Equipment (PPE) for power plant operation.

Question:

1. In your opinion, explain the necessity and importance of PPE for power plant working condition.