

TP9. SAFETY AND HEALTH REGULATIONS OF CONSTRUCTION AND INDUSTRIAL OPERATIONS

Duration: 05 Day

Overview:

This course is designed to provide a comprehensive knowledge on electrical, mechanical, chemical, thermal and general safety at workplace, based on OSHA Standards and beyond, with the view of having zero casualties at a given work environment in the long run.

Please note that this course does not cover applications of explosives for demolishing operations and under water operations (scuba diving)

Who should attend?

Engineers, administrative officers, site managers and any other person involved with industrial / workplace safety in all manufacturing, processing, transport and distribution, monitoring, commercial and service providing sectors.

At Course Completion:

At the end of the successful completion of this event the participants will be able to restructure the institutional safety policies to be in compliance with International Standards, regulate the institutional operations to maximize the safety, plan and implement optimized safety schemes, conduct risk assessment to evaluate the safety threats of a given environment and propose remedial actions

Outline:

Lesson-1: Safety and health standards, Inspections and right of entry, Rules of practice for administrative adjudications, General safety and health provisions, Recording and reporting of injuries, Employee emergency action plans, Acceptable certifications, Record keeping, Hazard communication, Safety training and education

Lesson-2: Sanitation, Personal protective equipment, Means of egress, Retention of DOT markings, placards and labels, Accident prevention signs and tags, Signalling and barricades, Safe usage/maintenance of stairways, corridors and ladders etc., First aid and medical attention

Lesson-3: Occupational noise exposure, Ionizing and nonionizing radiation, Gases, vapours, fumes, dusts, and mists, Illumination, Ventilation, Temperature control, Visual impacts

Lesson-4: Criteria for personal protective equipment, Head protection, Occupational foot protection, Hearing protection, Eye and face protection, Respiratory protection, Safety belts, lifelines, and lanyards, Safety nets, Working over or near water

Lesson-5: Flammable and combustible liquids, Liquefied petroleum gas (LP-Gas), Temporary heating devices, Fixed extinguishing systems, general, Fixed extinguishing systems, gaseous agent, Potential fire igniting factors, Handling of readily-combustible materials, Fire detection systems, Employee alarm systems, Fire Drill

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Lesson-6: Types of material stored and transported, General requirements for storage, Rigging equipment for material handling, Filling, pumping and storage of petrochemicals, Types of waste materials, handling and disposal of solid waste, techniques of disposal of liquid waste, Regulations of atmospheric emissions

Lesson-7: Manual hand tools, Power operated hand tools, Abrasive wheels and tools, Woodworking tools, Jack-lever and ratchet, Screw and hydraulic, Air Receivers, Mechanical power-transmission apparatus, safety concerns of power extensions, After-operation clearing, safe keeping of tools

Lesson-8: Gas welding and cutting, Arc welding and cutting, Heat sinks and coolants, Prevention of triggering fires and explosions, Special concerns of ventilation and protection in welding, Eye and skin protection, Alternative bonding systems (exothermic welding)

Lesson-9: General requirements, Wiring design, methods, components, and equipment for general use, Safety and protection devices of electrical networks, Specific purpose equipment and installations, Hazardous (classified) and ready-access locations, troubleshooting of energized systems, Lockout and tagging of circuits

Lesson-10: Equipment and devices required for maintenance, Battery locations and battery charging, Environmental deterioration, aging and expiry of material and equipment, security concerns, frequency of repetition of inspection

Lesson-11: Aerial lifts, Material hoists, personnel hoists and elevators, Base-mounted drum hoists, Overhead hoists, Conveyors, Tower crane, Floating cranes/derricks and land cranes and derricks on barges, Overhead and gantry cranes, Dedicated pile drivers, Side-boom cranes, Equipment modifications, Severability, Ground conditions, Assembly/Disassembly procedures, Free fall and controlled load lowering, Wire rope inspection, selection and installation criteria, Operator and signalman qualification and certification, Authority to stop operation

Lesson-12: Duty to have fall protection, Criteria and practices, Training requirements, types of scaffolds and erection concerns, Signals general requirements, radio, telephone or other electronic transmission of signals, voice signals and hand signal chart

Lesson-13: Motor vehicles, Material handling equipment, Pile driving equipment, building demolishing equipment, Site clearing, Criteria for design and construction for spray booths

Lesson-14: Soil classification, sloping and benching, soil stratification and land stability, piling, timber shoring for trenches, aluminium hydraulic shoring for trenches, alternatives to timber shoring, specific excavation requirements, protective systems, devices and techniques, types of underground constructions and caissons, Cofferdams, ventilation and special concerns of emergency egress

Lesson-15: Understanding of materials, Equipment and tools, Safety wear, cast-in-place and precast concrete, lift-slab construction operations

Lesson-16: Site-specific erection plan for steel structures, Construction sequence, Hoisting and rigging, Structural assembly, Column anchorage, Beams and columns, Open web steel joists, Systems-engineered metal buildings, Falling object protection,

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Lesson-17: Pre-operation preparation, Clearance of Stairs, Chutes and passageways, Placement of ladders and lifting systems, Removal of materials through floor openings, Removal of walls, masonry sections, and chimneys, Manual removal of floors, Removal of walls, floors, and material with equipment, Removal of steel construction, Mechanical demolition, temporary Storage.

Lesson-18: Tools and protective equipment, Mechanical equipment, Material handling, Grounding for protection of employees, Overhead lines, Underground lines, Construction in energized substations, Lineman's body belts, safety straps, and lanyards, Work area control

Lesson-19: International regulations, Asbestos, Coal tar pitch volatiles, Carcinogens (4-Nitrobiphenyl, etc.), alpha-Naphthylamine, Methyl chloromethyl ether, Dichlorobenzidine (and its salts), bis-Chloromethyl ether, beta-Naphthylamine, Benzidine, 4-Aminodiphenyl, Ethyleneimine, beta-Propiolactone, Acetylaminofluorene, Dimethylaminoazobenzene, N-Nitrosodimethylamine, Vinyl chloride, Inorganic arsenic, Cadmium, Benzene, Coke oven emissions, 1,2-dibromo-3-chloropropane, Acrylonitrile, Ethylene oxide, Process safety management of highly hazardous chemicals, Hazardous waste operations and emergency response

Lesson-20: Psychological fatigueless of safety engineers, Complacence, Safety breaching due to internal conflicts, personal rivalries, lack of job satisfaction, cultural and religious practices/rituals etc., inter departmental relations and external exposure to safety engineers