RelyOn Nutec
360° Safety

LSP359

NR-13 - Safety Training in Process Units Operation - 40h

Duration	40 Hours
Target group	Professionals in operation of process units.
Prerequisites	- RG and CPF; - Passport (Expatriate); - Secondary School Certificate.
Objective	Qualify industry professionals to perform activities in process units.
Contents	Notions of applied physics. Pressure. Atmospheric pressure. Gauge pressure and absolute pressure. Internal pressure, external pressure and vacuum. Pressure Units. Heat transfer. General notions: what is heat, what is temperature. Modes of heat transfer. Specific heat and sensible heat. Heat transfer at constant temperature. Thermodynamics. Concepts. Saturated steam and superheated steam. Fluid Mechanics. Fundamental Concepts. Pressure in Flow. Types of flow: Laminar and turbulent. Liquids flow: transfer by gravity, pressure difference, siphon. Pressure drop: concept, roughness, accidents. Principles of fluid pumping. Notions of applied chemistry. Density. Solubility. Diffusion of gases and vapors. Characterization of Acid and Base (Alkali) - Definition of pH. Basic principles about Corrosion. Process equipment (workload established according to the complexity of the unit, where applicable). Piping accessories. Electrical accessories and other items. Water heaters. Pumps. Boilers (basic knowledge). Compressors. Condenser. Demineralizer. Spheres. Evaporators. Filters. Gas washer. Reactors. Coolers. Dryers. Silos. Storage tanks. Towers. Heat exchangers. Industrial piping. Steam turbines. Injectors and ejectors. Safety devices. Others. Instrumentation. Unit operation. Process description. Start and shutdown. Emergency procedures. Disposal of chemicals and environmental preservation. Evaluation and control of risks inherent to the process. Prevention of deterioration, explosion and other risk. Legislation and standardization. Regulatory Norm nº 13 (NR-13). Pressure vessel categories. Topics of inspection and maintenance of equipment and records. Total Contact Time: Theory: 40h Technical Reference: NR-13
Exam	Multiple choice exam with minimum passing grade of 60%. Validity: N/A