Introduction to Industrial Electricity

5 days **ELECBAS-EN-P**

Overview

LEVEL

Awareness

PURPOSE

This course provides an overview on industrial electricity; how it is generated and distributed in petrochemical plants.

LEARNING OBJECTIVES

Upon completion of the course, participants will be able to:
learn the fundamentals of electricity,
identify equipment used for the grid,
discover electric motors and generators,
apply electrical safety rules.

WAYS AND MEANS

Numerous drawings and datasheets used in the industrial plants.
Daily quiz to reactivate the key points.
Practical exercises and case studies.

LEARNING ASSESSMENT

Knowledge assessment quiz.

PREREQUISITES

Provide evidence of a professional experience of at least 1 month, related to the concerned field.

Agenda

FUNDAMENTALS IN INDUSTRIAL ELECTRICITY — 1 d

Characteristics of electrical power supply for industrial plants.
Principles of electrical distribution:
Main technical characteristics of the electrical distribution and the grid. One line electric distribution diagram.
Application: overall online diagram.

SUBSTATION EQUIPMENT & SWITCHGEAR — 2 d

Purposes and use of these types of equipment.
Transformers: overall technology and troubleshooting.
Circuit breakers: technology and switchboard.
Operation and maintenance of main electrical equipment.
Electricity control system. Failures monitoring and corrective actions.
Electrical protections.

ELECTRICAL HAZARDS — 1 d

Electrical shocks. Direct and indirect contacts.
Collective and personal protective equipment. Hazardous areas. Basics in safety.
Prevention against electrical shocks, Lock-Out Tag-Out procedure (LOTO).

INTRODUCTION TO MOTORS

0.5 d

Different type of motors. Operation and technology. Working principle of induction and synchronous motors.
LV & HV motors. Troubleshooting.

DESCRIPTION OF STEAM TURBINES GENERATORS

0.5 d

Electrical power generating set. Technology. Coupling.
Main technical characteristics of these types of equipment.