Medium voltage installations

NF C 13-100 and 13-200 standards

Ref. T3

Duration: 4 days

Objectives

- Understand MV equipment definition and installation constraints and rules.
- Define and size MV electrical distribution installations (cable calculation, choice of switchgear) according to current rules and standards.

Intended audience

Personnel who design, install, operate or service electrical installations.

Path

Prerequisites

Know MV technology and products or have taken one of the following courses:

OLFHT p. C18
T2 p. C26

Next courses to be taken

T4 p. C28

Level

Mastery

Breakdown

- 70% classes
- 30% hands-on

Content

Medium voltage:

- standards (NF C 13-100 and 13-200) and voltage ranges,
- MV equipment (switch-disconnector-circuit breaker),
- breaking techniques: SF6 and vacuum.

Definition of switchgear and feeders:

- determination of MV substations,
- voltage and current requirements,
- load survey,
- choice of cables and calculation of cross-sections,
- practical calculations of short-circuit current.

Distribution modes:

- determination of sensors (voltage and current),
- public and industrial distribution networks,
- choice of earthing system in MV,
- presentation of Malten system,
- know current-based, logical and time-based discrimination.

Phase-to-earth faults:

- calculation of zero-sequence current in MV.

MV-specific equipment:

- transformers: types, cooling, coupling,
- MV motors: control, starting, protection,
- MV capacitor banks: components, coupling,
- harmonics.