GCC Electrical
Testing Laboratory
المفتبر الفليجي لفحص المعدات الكهربائية

Distribution substation and verification of the earthing system

Background To familiarize with operation and maintenance of the MV and LV distribution substation.

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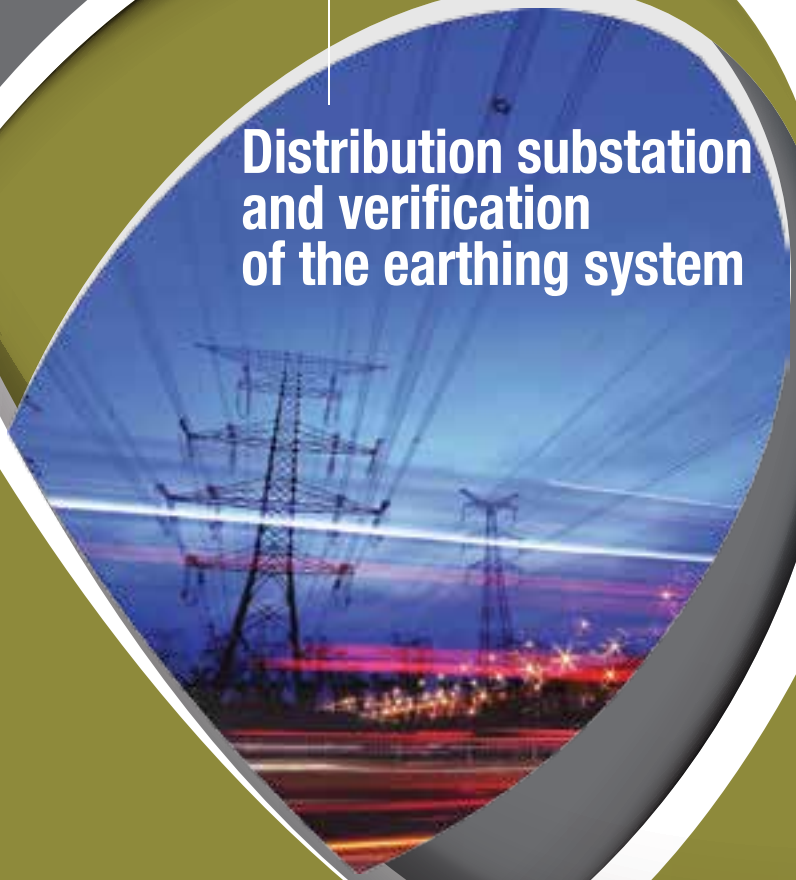
Education
Course Code: **M09**

Distribution substation and verification of the earthing system



JULY
22 - 26
2018

GCC Electrical Testing Laboratory

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Objectives

To familiarize with the calculation of the short circuit currents and the protection relays.

Addressed to:

Engineers Operating in the Maintenance of Industrial or Electrical Distribution Networks

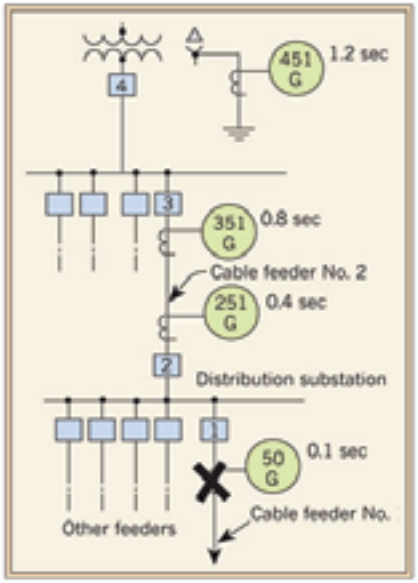
Duration:

3 Full Days

Location/Venue:

GCCIA HQ, Dammam

Course Fees:



PROGRAM

Distribution substation and verification of the earthing system

The Course program contains the following training outline:

DAY 1

Electrical networks

a. Basic layout of the electrical substation. Design rules according standards EN 61936-1
b. Basic specification of the civil structures
c. Functional characteristics of the main components
   - MV-LV transformers
   - MV Switchboards
   - LV switchboards
   - Voltage and current transformers
   - Substation automation
   - protections

DAY 2

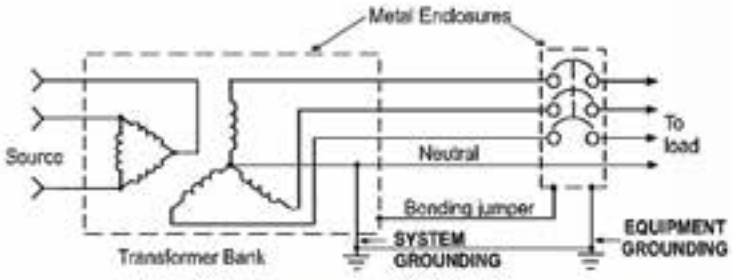
Earthing system and substation operations

a. Earthing system
   - Basic requirements according standard EN 50522
   - Basic design of the earthing systems
   - Basic erection of the earthing systems
b. Substation operation and maintenance
   - Single line diagrams
   - Protection devices operations
   - Typical commands and operations
   - Typical maintenance procedures

DAY 3

Verification of the earthing system

a. Safety requirements
b. Earth potential rise
c. Step voltage and touch voltage
d. Soil electrical resistivity
e. Method of measurement



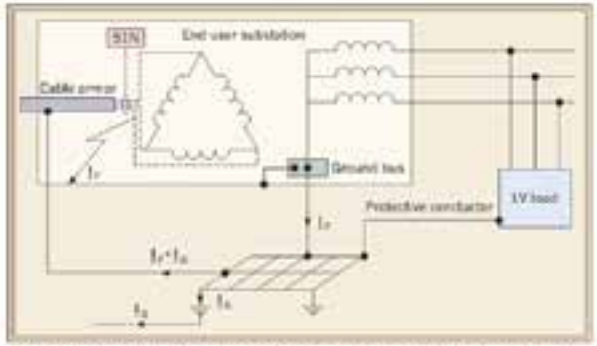


Fig.1. Circulation of current through the end-user's grounding grid due to a ground fault on the primary side of the substation.