



Power System Configuration & Earthing

Course Overview

Power System Configuration and Earthing are key topics in the planning, design, specification, protection engineering and operational management of any electrical power systems.

This course aims to provide electrical professionals with a clear understanding of the requirements for optimum plant item configuration, earthing of the power system neutral, safety grounding of plant items, insulation coordination and lightning and surge protection of plant items in power systems.

The course focus is on high voltage substation layout and covers design options in terms of the number of bus bars, relative positioning of plant items, safe working, accessibility, maintainability and extendibility. Consideration is also given to sound grounding and earthing practices and design criteria for adequate and safe discharge of lightning and switching surges to the earth mat.

Topics

Arrestors:

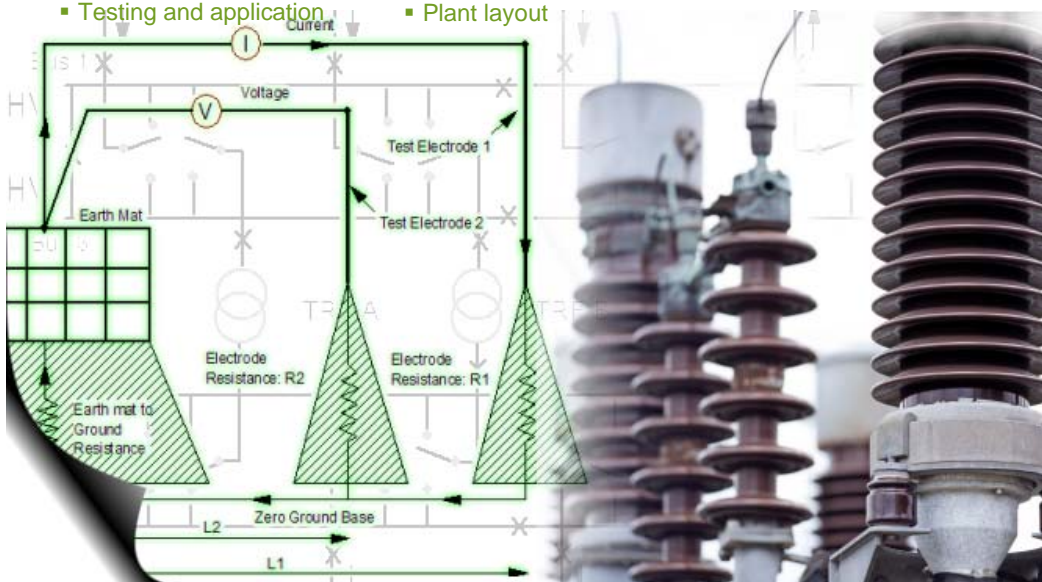
- External insulation
- Internal components
- Failure modes
- Insulation coordination
- System overvoltages
- Switching surges and reflections
- Voltage and energy ratings
- Positioning
- Testing and application

Substations:

- Voltage levels
- Sizes
- Power transfer
- Flexibility
- Dependability and reliability
- Maintainability
- Safety
- Earthing / earth mat
- Step and touch potential
- Plant layout

Earthing:

- Reasons for Earthing
- Earthing options
- General Earthing practices
- Criteria for sound Earthing practices
- Star and Delta Earthing
- NER rating



Course dates

TBA

Course duration

2 days – 08:30 to 16:00 daily

Course fees

R4 400 (incl. VAT)
per delegate

Course venue

NETGroup Academy
28 Regency Rd
Route 21 Corporate Park
Cnr Boeing & Nelmapius Rd
Irene, Centurion

What's included

- Domain expert facilitators
- Training Guide
- Quality Training Venue
- Lunch and Refreshments
- Ample Parking

Registration deadline

2 weeks prior to the
scheduled course

Contact details

Tel: 012 345 6005 /
0861 NET GRP

Fax: 012 345 6633

email: academy@netgroup.co.za

Private Bag X14
Elardus Park
0047

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www.netgroup.co.za

NETGroup Academy



Who should attend
Engineers, Technologists and Academics working in:

- the power generation industry;
- industrial production plants;
- the electrical power consulting industry;
- power system fields involving planning, design, specification, construction, testing, commissioning, operation and maintenance of rotating power plant.

Accreditation

This course is being accredited for 2 CPD points.

NETGroup Academy is registered with the ISETT SETA and Consulting Engineers South Africa as an accredited training service provider.



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Outcomes

When you have completed this course, you will:

- understand and be able to describe the fundamental requirements, principles and dynamics of power system load and fault studies.
- be able to do system load and fault calculations of voltage and currents
- be able to calculate protection relay setting parameters
- be able to specify and judge load and fault current capabilities of system components
- be able to support the planning, specification, technical evaluation, operating and maintenance processes of power systems and components.

About the Venue

The NETGroup Academy's training facility offers two multiple purpose instruction rooms each comfortably accommodating up to 20 students in multiple desk layouts. Depending on the seating configuration, the rooms may accommodate lecture-style instruction or encourage interaction in the form of roundtable discussions and teleconferences.

Teas and lunches are arranged with the on site cafeteria and ample parking is available for students.



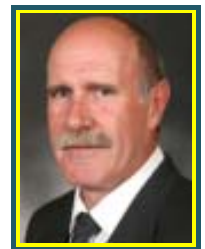
As a training facility for adult professionals, the NETGroup Academy offers a flexible and technologically-advanced learning environment that is safe, healthy, comfortable, aesthetically-pleasing, and accessible. Business stations and wireless access points with **complimentary Internet access** are available to allow students to carry out some business functions or to quickly connect with their organizations if need be during or between their training sessions.

Your Course Facilitators

Olaf von Abo

M.Dip. Electrical H.C.

Chief Design Eng.
NETGroup SA



Olaf has some 22 years practical experience in the Protection of High and Medium Voltage Transmission and Distribution networks.

Execution of projects for various utilities and large industrial companies in network and plant commissioning, audits, design, specification, power system analysis, protection coordination studies and project management has earned him wide regard as industry expert.

Hennie Harmse

Pr. Eng. B.Sc. (Elec.).
MSAIEE



Hennie holds in excess of 30 years experience in Power System Protection, Control and Measurement and the Management of Transmission and Distribution Systems. He has been actively involved in Power System training since 1994.