MV & LV Electrical Reticulation Systems

Design, Installation, Refurbishment, Testing & Commissioning

FORMAT	DATES	CPD POINTS	FROM
Online or In Person	23 – 24 November 2026	2 CPD Points	R 7 999 per delegate

Overview

Today, the demand for technical skills and expertise in Medium Voltage/Low Voltage (MV/LV) electrical reticulation is increasing. It is the responsibility of companies, industries and municipalities to improve and educate their workforce to flow with the technological trend in MV/LV reticulation. Selections of appropriate MV/LV reticulation philosophy, equipment, cable sizing, fault level calculations, earthing design, protection schemes, etc. are crucial matters that determine any electrical reticulation's life span. Nowadays, several methods of MV/LV reticulation have been developed, for instance, philosophies like SWER, phase-to-phase systems, single-phase and dual-phase systems have evolved as the most cost-effective systems. However, MV/LV electrical reticulation methods are not always the same in a different environment; therefore, in-depth knowledge of reticulation methods is required by a designer to design a system that will provide maximum return on investment considering capital cost as well as operations and maintenance costs.

This intensive two-day workshop based on appropriate SANS and IEEE standards aims to expound reticulation practices by thoroughly explaining with detailed discussion and real-life practical examples of design, installation, refurbishment, and commissioning of MV/LV electrical reticulation.

Choose How You Attend

OPTION 1 · ONLINE

R 7 999 per delegate

Live online training, 23 – 24 November 2026. Join from your office or home.

OPTION 2 · IN PERSON

R 8 999 per delegate

Venue: Birchwood Hotel OR Tambo, 23 – 24 November 2026.

Tick your preferred option on the registration form (page 3).

Who Should Attend

- Electrical Engineers
- Power System Engineers
- Electrical Technicians
- EPC Contractors
- Utility Personnel
- Plant Engineers
- Electrical Inspectors
- Commissioning Engineers

Benefits

- ✓ Understand MV and LV reticulation system architecture and components
- ✓ Design efficient and compliant electrical distribution networks
- ✓ Select suitable cables, switchgear, transformers, protection devices, and accessories
- ✓ Apply best practices for installation and refurbishment of electrical systems
- ✓ Conduct inspection, testing, and commissioning of MV/LV systems
- ✓ Diagnose faults and troubleshoot common operational issues
- ✓ Ensure compliance with national and international electrical standards
- ✓ Improve reliability, efficiency, and safety of electrical networks

Two-Day Programme: Design, Installation, Testing and Maintenance

Modules 1 to 10

1 Fundamentals of MV & LV Electrical Reticulation

- Introduction to electrical reticulation systems
- MV vs LV network structures
- Distribution philosophies and configurations
- Radial, ring main, and interconnected systems
- Power flow principles

2 MV/LV System Design Principles

- Load assessment and demand calculations
- Voltage drop calculations
- Short-circuit analysis
- Fault level determination
- Cable sizing and route planning
- Transformer sizing and selection
- Network protection coordination

3 Electrical Equipment Selection

- MV switchgear and LV switchboards
- Circuit breakers and isolators
- Ring Main Units (RMUs)
- Transformers and substations
- Protection relays
- Busbars and distribution panels
- Earthing and lightning protection systems

4 Cable Systems & Installation Techniques

- Cable types and applications
- Cable laying methods
- Trenching and duct systems
- Jointing and termination methods
- Cable tray and ladder installations
- Underground and overhead reticulation systems

5 Installation of MV/LV Reticulation Systems

- Site preparation and planning
- Installation sequencing
- Safety procedures during installation
- Equipment alignment and mounting
- Substation installation practices
- Installation QA/QC requirements

6 Refurbishment & Upgrading of Electrical Systems

- Condition assessment of aging infrastructure
- Retrofit strategies for obsolete equipment
- Replacement planning
- Modernization of switchgear and substations
- Energy-efficient upgrade opportunities
- Life extension methodologies

7 Testing & Commissioning of Electrical Systems

- Pre-commissioning inspections
- Insulation resistance testing
- Continuity and polarity testing
- Transformer testing
- Relay protection testing
- Functional commissioning procedures
- Energization protocols

8 Protection, Safety & Compliance

- Electrical protection schemes
- Arc flash risk mitigation
- Lockout/Tagout procedures
- Earthing safety requirements
- IEC, IEEE, NEC, and local compliance standards
- Permit-to-work systems

9 Fault Diagnosis & Troubleshooting

- Common MV/LV faults and causes
- Cable fault detection methods
- Transformer fault diagnosis
- Switchgear malfunction analysis
- Thermal imaging applications
- Root cause analysis techniques

10 Maintenance & Asset Reliability Management

- Preventive and predictive maintenance strategies
- Maintenance scheduling
- Condition monitoring systems
- Asset lifecycle planning
- Reliability-centered maintenance (RCM)
- Spare parts management

Registration Form

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Online: R 7 999
In person: R 8 999
per delegate

BOOKING CONTACT (APPROVING OFFICIAL)

FULL NAME (MR / MRS / MS)

POSITION

COMPANY NAME

VAT NUMBER

TELEPHONE

EMAIL

ADDRESS

SIGNATURE

DATE

ATTENDANCE OPTION (TICK ONE)

☐ **Online** — Live online training — **R 7 999**

☐ **In Person** — Birchwood Hotel OR Tambo — **R 8 999**

FINANCE AND PAYMENT

PERSON RESPONSIBLE FOR FINANCE

DIRECT TEL NO.

DATE OF PAYMENT

PURCHASE ORDER / REFERENCE NO.

ACCOUNT HOLDER	BANK	BRANCH	ACCOUNT NO.
Independent Training Management (Pty) Ltd	FNB South Africa	Randburg (251650)	62685879276

DELEGATES ATTENDING THIS WORKSHOP

#	FULL NAME	POSITION	EMAIL	OPTION
1				
2				
3				
4				
5				

TERMS AND CONDITIONS

1. **Fees** are current at time of print; Independent Training reserves the right to change them.
2. **Additional delegate rates** apply for bookings made at the same time, on the same course.
3. **Confirmation**: on receipt of this form and payment/PO, you will receive email confirmation with venue details, map and start times.
4. **Attendance**: no learner may attend without proof of payment or an order number.
5. **Substitution**: delegate substitutes may be made at any time at no penalty, provided we are notified in writing.
6. **Payment** is due 5 working days before the course by cheque or EFT, quoting the invoice reference and organisation name. Cancellations must be emailed to Independent Training; please notify us immediately of any reschedule or cancellation.

CANCELLATION CHARGES

11 to 30 days before course	10%
6 to 10 days before course	20%
4 to 6 days before course	30%
1 to 3 days before course	50%