JUPITER PRIME
Consulting • Training • Advisory
جوبيتر برايم للاستشارات والتدريب

COURSE BROCHURE

Distribution Network Equipment Selection and Condition Training Course

23 – 27 May 2027
Online

Distribution Network Equipment Selection and Condition Training Course

Ref: 2625_99849 **Date:** 23 – 27 May 2027 **Location:** Online **Fees:** 2900 GBP

Distribution Network Equipment Selection and Condition is a 1-week training course for electrical engineers and technicians who specify and maintain network plant, ending with an equipment selection and condition record for their own network. Ageing assets, rising load from electrified heating and transport, and growing embedded generation now push distribution plant harder than its original ratings assumed. Jupiter Prime Training delivers this course.

Why Distribution Network Equipment Selection and Condition Matters Now

Three forces shape distribution plant decisions today. Electric vehicles and heat pumps add load at the network edge, embedded generation reverses feeder power flow, and customers expect fewer interruptions while capital budgets stay tight and scrutinised. An organisation that rates and assesses equipment well defers replacement safely and targets spend where failure risk is highest; one that does not faces overloaded transformers, cable faults and avoidable outages. The course rests on manufacturer rating data, health indexing and risk-based asset replacement practice.

Who Gains Most from Distribution Network Equipment Selection and Condition

- Engineers who prepare specifications and technical evaluations for transformers, cables and pole plant
- Technicians who carry out routine inspection, oil sampling and diagnostic testing
- Planners who size new connections and reinforcement against thermal and fault ratings
- Asset engineers who maintain condition data and propose replacement or refurbishment
- Commissioning staff who accept new plant into service

A distribution depot or network region gains most when its design, maintenance and asset engineers attend together and share one rating method.

Distribution Network Equipment Selection and Condition Capabilities

Participants work from nameplates, test results and loading records to judge plant fitness for duty and remaining service life.

- Specify distribution transformer kilovolt-ampere rating, impedance and tap range for a given load profile — the procurement engineer
- Calculate cable current rating with derating factors — the network planner
- Select reclosers and sectionalisers for an overhead feeder — the reliability engineer
- Assess transformer condition from dissolved gas, moisture and insulation test results — the maintenance supervisor
- Build a health index score for a population of ring main units and cables — the asset manager
- Communicate a repair, refurbish or replace recommendation with its failure risk — the capital approval panel

Key Distribution Network Equipment Selection and Condition Terms

- Ring main unit — sealed switching unit connecting a transformer into an underground ring.
- Auto-recloser — overhead line device that trips on a fault and recloses automatically, clearing transient faults.
- Sectionaliser — device that counts upstream recloser operations and opens during a dead interval to isolate a permanently faulted line section.
- Dissolved gas analysis — test measuring gases in transformer oil to reveal internal faults.
- Health index — single score combining age, tests and duty to rank equipment by condition.
- Cyclic rating — permitted loading of a cable or transformer under a daily load curve within temperature limits.

Distribution Network Equipment Selection and Condition Day by Day

Day 1: The Distribution Network and Its Plant

- Overhead and Underground Network Topologies — Where Each Equipment Type Sits
- Voltage Levels and Earthing Arrangements — Insulation and Rating Implications
- Load Growth and Reverse Power Flow — Changing Duty on Existing Plant
- Asset Population Profiles — Age, Type and Failure History Overview
- Failure Modes of Distribution Equipment — Consequence for Customers and Safety

Day 2: Distribution Transformers and Cables

- Transformer Kilovolt-Ampere Rating and Impedance — Sizing Against Load Profile
- Tap Changers and Vector Groups — Voltage Regulation and Paralleling Choices
- Transformer Loss Evaluation — Lifetime Cost in Tender Comparison
- Cable Insulation Types and Construction — Selection for Duty and Environment
- Cable Current Rating and Derating Factors — Route and Installation Decisions

Day 3: Overhead Line Devices and Ring Main Units

- Auto-Recloser Ratings and Operating Sequences — Transient Fault Clearance Strategy
- Sectionaliser Counts and Coordination — Isolating Permanent Line Faults
- Ring Main Unit Configurations — Switching Flexibility for Underground Rings
- Fault Level and Short-Time Ratings — Checking Plant Withstand at Each Site
- Switchgear Insulating Media Options — Sealed Unit Selection and Handling

Day 4: Condition Assessment and Diagnostics

- Dissolved Gas and Oil Quality Testing — Transformer Internal Fault Diagnosis
- Insulation Resistance and Tan Delta Testing — Cable and Winding Ageing
- Partial Discharge and Thermal Imaging Surveys — Early Defect Detection
- Visual Inspection Checklists for Pole and Ground Plant — Field Condition Grading
- Health Index and Criticality Scoring — Ranking Plant for Intervention

Day 5: Practising the Equipment Selection and Condition Record

- Selection Case for a New Transformer and Cable Connection — Applying Rating Methods
- Recloser and Sectionaliser Scheme for a Rural Feeder — Applying Coordination
- Condition Scoring of a Sample Asset Population — Applying Diagnostic Results
- Repair, Refurbish or Replace Options — Risk and Lifetime Cost Comparison
- Completing the Equipment Selection and Condition Record — Network Action List

Applying Distribution Network Equipment Selection and Condition After the Course

- Score the ten oldest transformers in one area by health index and propose an intervention order
- Re-check cable cyclic ratings on two feeders with new connections and record any derating shortfall

Distribution Network Equipment Selection and Condition Questions FAQ

What is distribution network equipment selection and condition, and why does it matter now?

It is the practice of rating, choosing and assessing transformers, cables, ring main units and line devices on distribution networks. It matters now because new load stresses ageing plant and scores steer limited capital.

Which roles gain most from distribution network equipment selection and condition training?

Distribution design engineers, maintenance technicians, network planners and asset engineers gain most. You benefit if you write specifications, test plant or propose replacements.

How does distribution network equipment selection and condition differ from an industrial plant distribution course?

It focuses on utility network plant outdoors and underground rather than factory switchboards and motor circuits.

What will you bring back from distribution network equipment selection and condition training?

You bring back a completed record that rates selected plant for its duty and scores the condition of a sample population. It becomes your team's template for grading and intervention planning.

Distribution Network Equipment Selection and Condition: The Way Forward

The completed equipment selection and condition record first informs which transformers, cables and line devices to replace or reinforce in the next capital cycle. Asset engineers, planners and maintenance supervisors use it to agree priorities on one shared evidence base. After first use, revisit health index weightings against actual failures.