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COURSE BROCHURE

High Voltage Switching Programmes, Isolation and Earthing Training Course

22 – 26 February 2027
Milan

High Voltage Switching Programmes, Isolation and Earthing Training Course

Ref: 1555_57247 **Date:** 22 – 26 February 2027 **Location:** Milan **Fees:** 7200 GBP

High Voltage Switching Programmes, Isolation and Earthing is a 1-week training course for authorised electrical personnel and substation engineers, built around a verified HV switching programme each participant writes for a real outage. A single switching error can energise a circuit with people working on it or drop supply to a hospital or process plant. Jupiter Prime Training offers this course on High Voltage Switching Programmes, Isolation and Earthing.

Why High Voltage Switching Programmes, Isolation and Earthing Matters Now

Networks now carry more interconnections, embedded generation and remote-controlled switchgear, so a circuit that looks dead on a drawing may still be fed from another point. Asset owners are also extending the life of older oil and air-break switchgear, which demands more careful operation. At the same time, experienced control engineers are retiring, leaving fewer people who know each substation by heart. Sites that switch well keep people safe and outages short; others suffer flashovers, wrong-circuit isolations and lost supply. The course rests on recognised electrical safety rules, permit-to-work practice and arc flash hazard assessment methods described in general terms.

Who Gains Most from High Voltage Switching Programmes, Isolation and Earthing

- Authorised persons who write and carry out HV switching programmes
- Engineers who check programmes against network diagrams
- Control room staff who coordinate remote and local switching
- Competent persons who receive permits and work on isolated plant
- Planners who schedule switchgear maintenance within outages

A substation crew that sends its authorised persons, control room staff and planner together gains most, because every switching instruction then follows the same steps.

High Voltage Switching Programmes, Isolation and Earthing Capabilities

Participants move from a single-line diagram to a checked, numbered sequence that makes a circuit safe to touch.

- Design switching programmes with hold points and confirmation steps — authorised person
- Apply isolation, proving dead and earthing in the correct order — permit issue decision
- Specify points of isolation and earthing for permits to work — competent person
- Assess arc flash hazards and boundaries at switchgear — protective equipment choice
- Test interlocks and earthing switches before outage work — control room
- Build a switchgear maintenance schedule around network outages — planner

Key High Voltage Switching Programmes, Isolation and Earthing Terms

- Switching programme — a written, numbered sequence of switching operations with checks, prepared and verified before execution.
- Point of isolation — the open, locked device that separates equipment from every source of supply.
- Proving dead — testing with an approved voltage indicator, itself checked before and after use, that conductors are de-energised.
- Circuit main earth — an earth applied at the point of isolation to discharge and short conductors before work.
- Permit to work — a document that defines safe limits, isolations and earths for work on HV equipment.
- Arc flash boundary — the distance from exposed live parts within which incident energy could cause a serious burn.

High Voltage Switching Programmes, Isolation and Earthing Day by Day

Day 1: Network Layout and Switching Risk

- Single-Line Diagrams and Substation Layouts — Identifying All Supply Sources
- Ring, Radial and Interconnected Networks — Backfeed Risk Recognition
- Switching Incident Case Reviews — Utility and Industrial Lessons
- Roles of Authorised and Competent Persons — Accountability Boundaries
- Remote and Local Control Hierarchy — Who Operates What

Day 2: Switchgear Types and Operation

- Oil, Vacuum, SF6 and Air-Break Circuit Breakers — Operating Limits
- Disconnectors, Load-Break Switches and Earthing Switches — Correct Use
- Mechanical and Electrical Interlocks — Preventing Wrong Operation
- Ring Main Unit Operation — Distribution Switching Sequences
- Switchgear Condition Signs Before Operation — Operate or Refuse Decision

Day 3: Isolation, Proving Dead and Earthing

- Point of Isolation Selection and Locking — Supply Separation Assurance
- Voltage Indicator Checks and Proving Dead — Confirming De-Energisation
- Circuit Main Earths and Additional Earths — Induced Voltage Control
- Cable Identification and Spiking — Correct Circuit Confirmation
- Restoration Sequence and Earth Removal — Return to Service

Day 4: Permits and Arc Flash Hazards

- Permit to Work and Sanction for Test — Safe Work Limits
- Arc Flash Incident Energy Assessment — Protective Equipment Selection
- Safety Labels and Approach Distances — Exclusion Zone Setting
- Switching Instruction Communication and Repeat-Back — Error Prevention
- Emergency Switching Under Fault Conditions — Supply Restoration Priority

Day 5: Practising the Verified HV Switching Programme

- Programme Drafting from Outage Request — Applying Isolation Rules
- Independent Programme Checking — Utility and Petrochemical Cases
- Simulated Switching Exercise with Hold Points — Applying Interlock Checks
- Switchgear Maintenance Within the Outage — Scope and Sequence
- Verified HV Switching Programme — Completed for One Outage

Applying High Voltage Switching Programmes, Isolation and Earthing After the Course

- Rewrite one existing switching programme with hold points, repeat-back steps and independent checking, and trial it at the next outage.
- Audit the earthing switches and interlocks of one substation and record any device that cannot be locked or proven.

High Voltage Switching Programmes, Isolation and Earthing Questions FAQ

What are high voltage switching programmes, isolation and earthing, and why do they matter now?

They are the written sequences and safety steps that make HV equipment dead and safe before work. They matter now because interconnected networks, ageing switchgear and fewer experienced operators raise the chance of switching errors.

Which roles gain most from high voltage switching programmes, isolation and earthing?

Authorised persons, substation engineers, control room staff and competent persons gain most. Each takes part in preparing, checking, executing or working under a switching programme.

How do high voltage switching programmes, isolation and earthing differ from a breaker testing course?

This course covers how to switch and isolate safely, while a breaker testing course covers diagnosing and overhauling the breaker itself. Here you write programmes, earth circuits and issue permits.

What do you bring back from high voltage switching programmes, isolation and earthing?

You bring back a verified HV switching programme for one outage. It lists isolation points, earths, hold points, permit limits and the restoration sequence.

High Voltage Switching Programmes, Isolation and Earthing: The Way Forward

The verified HV switching programme first informs whether an outage request can proceed safely as planned. Authorised persons execute it, control room staff coordinate it and competent persons work within its permit limits. After its first use, revisit how incident findings and network changes should update the programme template for every substation.