
Electrical Installation Readiness: Inspection, Energisation and Handover Training Course

30 August – 3 September 2027
Tokyo





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Programme Summary

Electrical installation readiness is the subject of this one-week training course for project, commissioning and operations managers at managerial level, ending in an inspection, energisation and handover plan for one electrical installation. New electrical systems are often declared complete while open defects, untested protection and missing records remain. The programme moves from readiness criteria and inspection, through testing and verification, to safe energisation, start-up and handover to operations. Mars Training Centre UK delivers this programme in electrical installation readiness.

The Business Case

The weeks before first energisation decide whether an installation starts reliably or fails in service. Unfinished punch lists, unverified protection settings and unclear authority to energise lead to delay, damaged equipment and injury. Managers who control readiness evidence can release equipment in a planned order and hand over a system that operations can trust.

- Start-Up Delay: Falls as defects and missing records are closed before the energisation date.
- Energisation Incident Exposure: Declines as switching, permits and isolation are planned and rehearsed.
- Handover Quality: Improves as test records and as-built drawings are complete when operations take over.

Principles and Evidence Base

- IEC 61936-1: Its requirements for power installations exceeding 1 kV AC, including checks before commissioning, frame the inspection scope in Sessions 1 and 2.
- IEC 60364: Its principles for verification of low-voltage installations before first use shape the test and record review in Session 2.
- Staged Readiness Gates: Release criteria for each system stage guide the energisation sequence in Session 3.
- Permit-to-Work and Isolation Principles: These control how work and energisation are separated in Sessions 3 and 4.

Intended Participants

- Managers accountable for bringing a new or modified electrical installation into service.
- Commissioning leads who sequence inspection, testing and energisation.
- Operations managers who will accept and run the installation after handover.
- Project managers who must close out electrical works with complete evidence.



The programme serves oil and gas, power utility, industrial manufacturing and infrastructure project organisations.

Learning Outcomes

1. Participants will be able to define readiness criteria for each stage of an electrical installation.
2. Participants will be able to evaluate inspection findings and rank open defects by consequence.
3. Participants will be able to review test results and records against recognised verification principles.
4. Participants will be able to construct an energisation sequence with switching, permits and hold points.
5. Participants will be able to diagnose start-up problems from protection, control and loading evidence.
6. Participants will be able to justify a handover package that operations can accept.

Programme Structure

Day 1: Electrical Installation Readiness and Inspection

What must be true before an electrical installation can be tested and energised?

- Readiness Criteria by System Stage
- Mechanical Completion Walk-Down
- Punch List Categories and Closure Rules
- Inspection Checklist Design
- Installation Requirements From IEC 61936-1

Day 2: Testing and Verification

Which tests prove that equipment and protection are ready, and what do the results show?

- Insulation Resistance and Continuity Test Review
- Protection Relay Setting and Function Test Records
- Verification Principles From IEC 60364
- Transformer and Switchgear Pre-Energisation Tests
- Test Record Acceptance Criteria

Day 3: Energisation Planning and Control

How is first energisation sequenced so that people and equipment stay safe?

- Energisation Sequence and Hold Point Plan
- Switching Programme and Isolation Boundaries
- Permit-to-Work Interface With Live Systems
- Temporary Supply and Back-Feed Risk Review
- Authority to Energise Record



Day 4: Start-Up, Loading and Problem Diagnosis

How is the system brought into service, and how are start-up problems traced?

- No-Load and Step-Loading Observation Plan
- Motor Starting and Control Response Checks
- Protection Mal-Operation Diagnosis
- Power Quality and Voltage Profile Readings
- Start-Up Issue Log and Escalation

Day 5: Applying Installation Readiness to a Project

Is the installation ready to be handed to operations?

- Applying Day 1 Readiness Criteria to the Chosen Installation
- Reviewing Day 2 Test Records for Gaps
- Sequencing Day 3 Energisation Steps
- Testing Day 4 Start-Up Issues Against Handover Terms
- Completing the Inspection, Energisation and Handover Plan

Methodology

The programme is built around case analysis and structured exercises. Participants work with anonymised inspection lists, test sheets and energisation plans from installations in different sectors, challenge each other's readiness judgements and defend their decisions in group review. Discussion centres on the choices managers face when schedule pressure meets incomplete evidence.

- Suggested activity: Ranking open punch list items by consequence for energisation.
- Suggested activity: Reviewing a sample test record set and listing gaps.
- Suggested activity: Presenting an energisation sequence to a simulated readiness review board.

Capstone Output

Each participant completes an inspection, energisation and handover plan for one electrical installation, real or case-based. It holds a readiness criteria matrix, a ranked defect list, a test record review, an energisation sequence with hold points and a handover package outline. It is used to run the readiness review and to agree the handover with operations.



Frequently Asked Questions

Is this electrical installation readiness course suitable for managers who are not electrical engineers?

Yes. It is set at managerial level for those who bring installations into service, and assumes project or operations experience rather than detailed circuit design skills.

Which standards does electrical installation readiness training rest on?

It rests on IEC 61936-1 for high-voltage installations and IEC 60364 for verification of low-voltage installations, together with staged readiness gates and permit-to-work principles.

How is the electrical installation readiness plan used at work?

The plan runs the readiness review, sets the energisation sequence and hold points, and defines the evidence operations needs before accepting the installation.