Occupational health and safety

High-Voltage Authorisation (H1, H2, HC) and Live Working (TST)

Three to five days to prepare electricians who carry out, direct or lock out operations on high-voltage installations, and those who prepare live working. The requirements of NF C 18-510, lockout, work in the vicinity and the organisation of live work (TST) are covered on your workstations and your switchgear cells. The course issues a named attestation; the authorisation remains issued by the employer.

Duration : 3–5 days

Objectives

1. Explain the dangers of high voltage: electric arc, flashover, induced voltages, voltage feedback
2. Identify the operations, the electrical environment zones and the HV authorisation symbols: H0, H1, H2 and HC, with or without vicinity
3. Apply HV lockout procedures, through to earthing and short-circuiting
4. Prepare and direct work with power off and work in the vicinity as work supervisor
5. Explain the methods, tools and conditions for carrying out live working
6. Provide the employer with an assessment by symbol for drawing up authorisation documents

Programme

Day 1 — morning

• High-voltage electrical accidents: mechanisms, effects on the body, arc burns

• Structures concerned: substations, switchgear cells, transformers, lines, underground cables

• Framework of NF C 18-510: principles of authorisation, employer responsibilities

• Actors: operations manager, lockout officer, work supervisor, operative

Day 1 — afternoon

• Electrical environment zones in high voltage: notions and method of determination

• Symbols H0, H0V, H1, H1V, H2, H2V and HC: what each one allows

• Written documents: lockout certificate, work authorisation, end-of-work notice

• Exercise: assigning the right symbol to operations of your site

Day 2 — morning

• HV lockout: isolation, locking off, identification, verification of absence of voltage, earthing and short-circuiting

• Lockout in one or two steps

• Personal and collective protective equipment, tools and HV voltage detectors

• Checking equipment before use

Day 2 — afternoon

• Lockout exercises on a cell or an installation of your site, with power off

• Role of the lockout officer: preparation, execution, handover to the work supervisor

• Unlocking and re-energising

• Analysis of lockout incidents

Day 3 — morning

• Work with power off: preparation by the work supervisor, marking off, allocation of tasks
• Work in the vicinity: protective measures, supervision, insulating screens and mats
• Role of the operative: following instructions, reporting back
• What to do in case of an accident or fire of electrical origin in HV

Day 3 — afternoon

• Practical scenario: preparing and running an HV job of your site as work supervisor
• Individual practical assessment by symbol
• Theoretical test on HV requirements
• Summary of the H0 to HC symbols to propose to the employer

Day 4 — morning

• Live working: definition, value, limits and preconditions
• Methods of working at a distance, in contact and at potential: principles and fields of use
• Organising a TST job: roles, weather conditions, suitable operating regime
• Insulating tools, hot sticks, protective equipment and their checking

Day 4 — afternoon

• Working procedures and technical sheets: reading and preparing an intervention
• Risk analysis before the intervention, conditions for starting and stopping
• Exercises on a mock-up or on an installation with power off
• Lessons learned from incidents in live working

Day 5 — morning

• Practical exercises according to the methods and tools chosen for your teams
• Role of the observer and communication on the job
• Conditions for stopping work: weather, tool failure, loss of visibility
• Checking and maintaining tools after the intervention

Day 5 — afternoon (workshop)

• Complete practical scenario of an intervention prepared by the team
• Individual practical assessment
• Final theoretical test
• Summary, named attestations and opinion to the employer for the authorisation documents

Teaching methods

• Practical part run with an equipped partner trainer, listed and rated on Inspirra
• Exercises on the cells, substations and diagrams of your site, always with power off
• Study of the lockout documents and procedures in use in your company
• Role-based scenarios: operative, work supervisor, lockout officer
• Theoretical and practical tests by symbol

Assessment and documents

Theoretical test and practical assessment for each target symbol, plus a day+1 learner feedback survey. Each participant receives a named attestation stating the symbols assessed, to be attached to the authorisation document issued by the employer, and a numbered training certificate verifiable online; training report given to the company.

Bilingual materials for every participant; each classroom course comes with its digital twin on OmniLearn.

Good to know

The duration ranges from 3 to 5 days depending on the target symbols and the addition of the live-working part; the programme shown is the 5-day version. Non-electricians and low-voltage electricians fall under “Electrical Authorisation NF C 18-510 (A1:2020)”.

Practical information

Duration	3–5 days
Audience	Electricians and technicians working on high-voltage installations: operatives, work supervisors, lockout officers
Prerequisites	Electrician skills and knowledge of the site's HV installations; medical fitness
Group size	Groups of 6 to 12 participants, in-company
Format	In-company, face to face on your site
Language	French, Darija or English; bilingual materials
Funding	OFPPT special training contracts (TFP), GIAC, Maroc PME: we prepare the applications with you, at no extra cost.
Programme customisation	Programme adapted to your procedures, your equipment and your audience

Frequently asked questions

Does the course issue the authorisation?
No. The authorisation is issued by the employer, who takes account of the employee's medical fitness, experience and training. We provide a named attestation for each symbol assessed, with an opinion, to help draw up the document.

Do we have to attend all five days?
No. The first three days cover the H0 to HC symbols for work with power off and work in the vicinity. The next two days are for teams that need to prepare or carry out live working.

Does live working require more than an H authorisation?
Yes. It requires its own methods, tools and organisation, and a specific authorisation issued by the employer. The content of the TST part is settled with you before the session, according to your teams' methods and equipment.

What prerequisites for participants?
Training and experience as an electrician, knowledge of the installations concerned and medical fitness. A review of existing skills at the start of the session allows the exercises to be adapted to the group's level.

Does this training need to be refreshed?
Yes. The interval set in the catalogue for electrical authorisation is three years; the employer may bring the refresher forward in case of a change of job, installation or working method.