

# Helen Electricity Network Ltd.

## Safety guide

Safety and co-operation guidelines for working on the electricity network



Updated August 9th 2021

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## 1. Target group and use of the electricity network safety guide

**This guide and its instructions concern everyone working in the facilities or electricity network of Helen Electricity Network.**

This guide contains the key instructions and regulations for the safety of electricity network operations. When working in the facilities or electricity network of Helen Electricity Network, it is important to comply with legislation, regulations and directions issued by the authorities and standards, and to follow the instructions in this guide. The contractors must also observe their own instructions on working and work procedures.

The purpose of this guide is to provide concise, comprehensive, and practical advice on the principles of safe work and co-operation on Helen Electricity Network's electricity network.

Before starting work, employees must carefully read this guide and the instructions issued by Helen Electricity Network referred to in Chapter 7.

The latest versions of this guide and other safety instructions of Helen Electricity are available from persons in charge of the task, from the client and on the website of Helen Electricity Network at [www.helensahkoverkko.fi/turvaohjeet](http://www.helensahkoverkko.fi/turvaohjeet).

If unsure, always ask for more detailed instructions: your employer and the client have a duty to help you!

Our common goal is to prevent all personal injuries and to ensure a safe and appropriate working environment for all.

Achieving this aim depends on the competence, due care and caution applied by all those working on the electricity network, as well as mastering and respecting the common procedures.

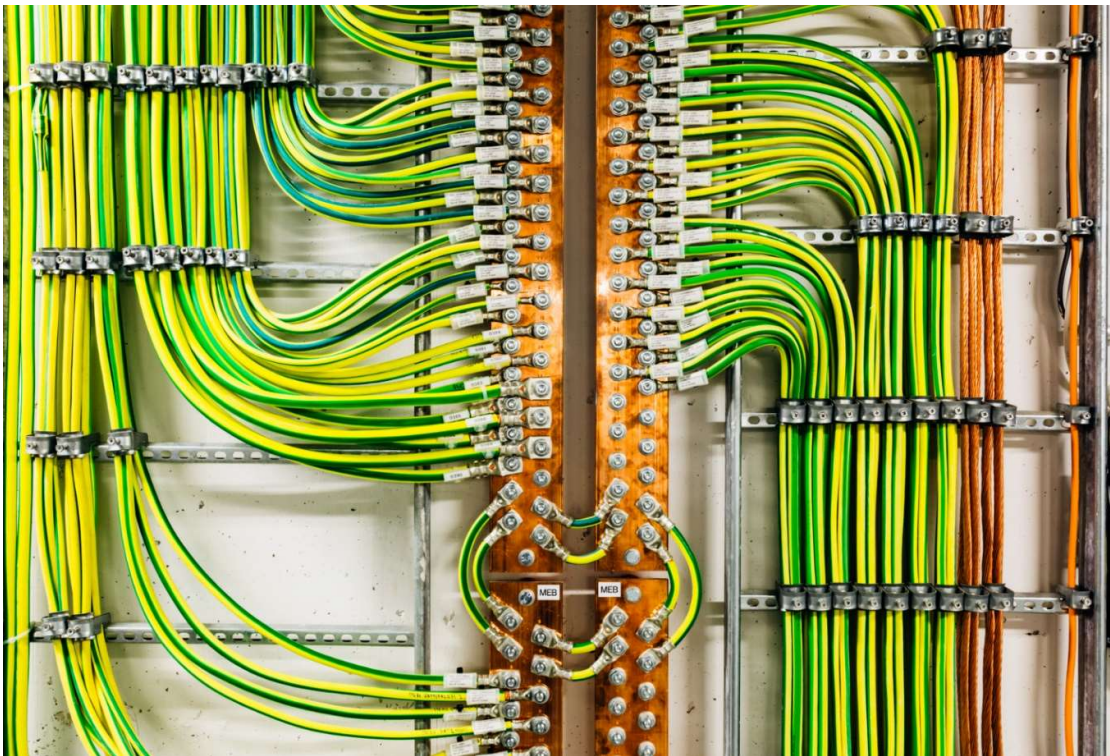
**Have a safe working day!**





## Seven good guidelines:

- Carefully read this electricity network safety guide and the other safety instructions mentioned in it.
- Take a positive attitude towards safety issues.
- Act as a good example to others.
- Instruct others in safety issues
- If unsure, ask for advice and help.
- Take safety issues into account as a natural part of all work.
- Remember that electricity is not visible!



## **2. Contact information of persons in charge of the electricity network**

Helen Electricity Network is the distribution system operator (DSO) and therefore responsible for electricity network operations in almost the entire Helsinki region. Helen Electricity Network has a task-specific contact person (later the client) for each job.

The client is an employee of Helen Electricity Network acting as the project contractor, project manager, occupational safety coordinator, or similar.

A list of the contact information of Helen Electricity Network's persons in charge is available from the client.

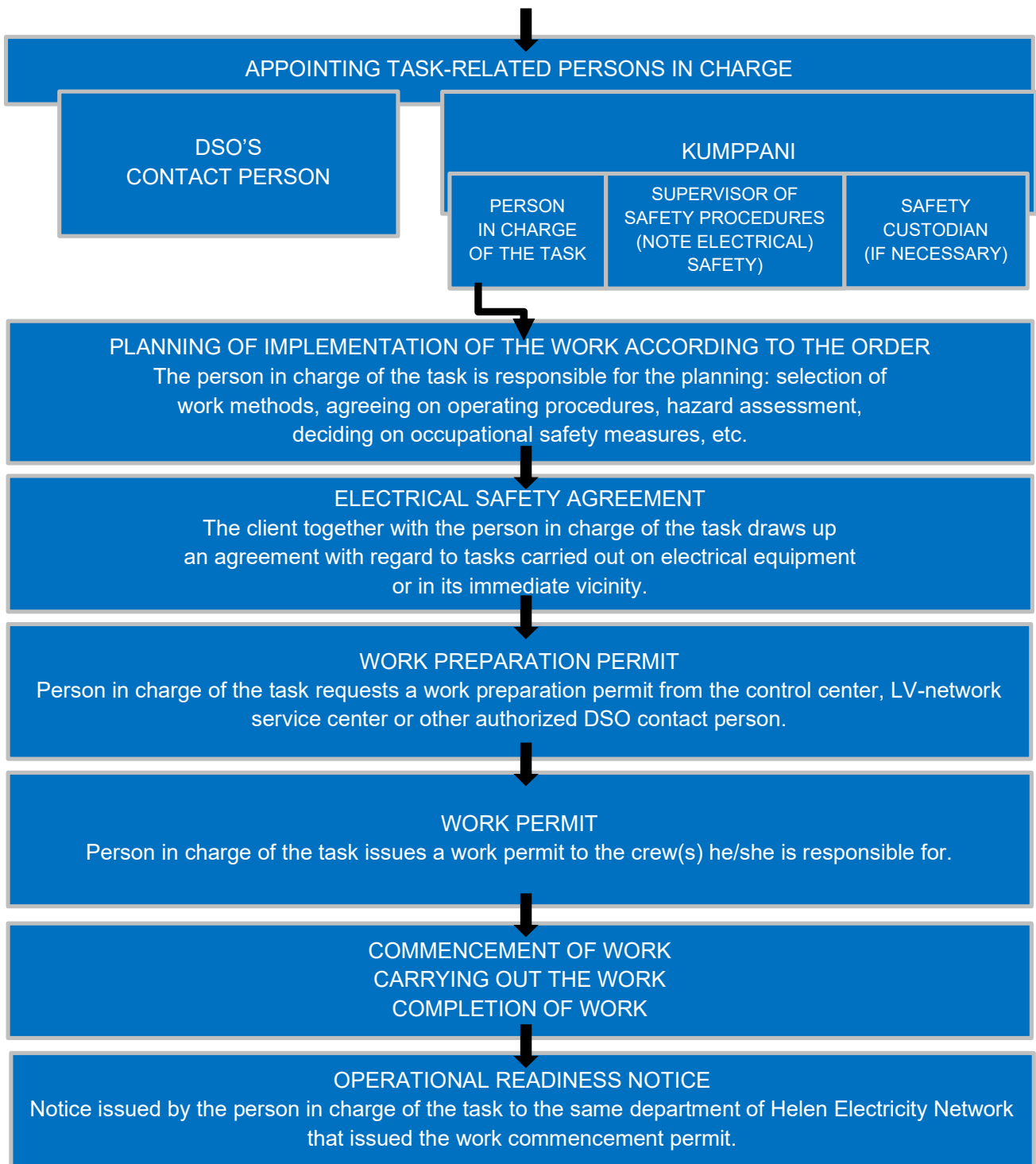
Contact details can also be requested from the telephone switchboard of Helen Electricity Network at +358 9 617 8090.

### **Helen Electricity Network, operation center:**

- telephone +358 9 419 5724
- e-mail [kayttokeskus@helen.fi](mailto:kayttokeskus@helen.fi)

## 2.1. Working on the electricity network

### 2.2. Summary of working on the electricity network



## Task-related persons in charge

For each task, the contractor must ensure that the following competent persons in accordance with standard SFS 6002 have been appointed and that they have assumed responsibility for their tasks.

### 2.2.1. Person in charge of the task

Person in charge of the task for each job, the contractor must appoint a person in charge of the task concerned. This person is directly responsible for the task and ensures the safety of the entire job.

In the planning stage of the job, the person in charge of the task together with the client shall establish which occupational safety measures must be organized for the job in question on the basis of hazard assessment.

The person in charge of the task must ensure that all employees in the work teams under their supervision are competent, that they have had appropriate training and experience for each job, and that they have received appropriate instructions for working on the electricity network.

Furthermore, the person in charge of the task shall ensure that the persons carrying out the job are given accurate and detailed instructions prior to starting the work and on completion of the job.

In identical repeated tasks, the person in charge of the task may be appointed with a standing rule.



### **2.2.2. Supervisor of safety procedures**

The person in charge of the task shall appoint a supervisor of safety procedures for individual work areas. The supervisor of safety procedures may be, for example, a work group organizer or other employee representative who is always present on site and is a professional capable of independent work.

The supervisor of safety procedures shall personally supervise the safety of the work being carried out. They may also carry out the entire task themselves.

In tasks with a risk of electric shock or arc, a person with sufficient qualifications shall be appointed as the supervisor of electrical safety for the duration of the task.

In identical repeated tasks, the supervisor of safety procedures may also be appointed with a standing rule.

If the supervisor leaves the site, a substitute must be appointed.

### **2.2.3. Safety custodian**

With respect to work stages carried out in electrical equipment, either close to energized electrical parts or when using mobile/transportable construction machines within the reach of energized electrical parts, the person in charge of the task shall, at their discretion or if required by the client or the supervisor of electrical safety procedures, appoint a separate person, who has received adequate instructions for the task, as a safety custodian.

The safety custodian supervises the electrical safety of the specified work stage. They must be present at the work site and be able to supervise the safety of the work in practical terms. They do not take part in the actual work but supervise that the other employees do not 10

themselves or, for example, by means of tools/equipment, get closer to the working distances for energized electrical parts than stipulated in standard SFS 6002.

The safety custodian shall also be employed in connection with lifting jobs, blasting and other hazardous tasks to ensure the safety of work performance for both employees and bystanders.



#### **2.2.4. Instructions before starting the task**

Before starting the work, the contractor shall appoint the persons in charge, draw up an electrical safety agreement with the client, request a work commencement permit from the client and issue a work permit to the work teams.

#### **2.2.5. Appointing the persons in charge**

The persons in charge referred to in section 3.2 of this guide shall be appointed and they shall assume responsibility for their tasks.

#### **2.2.6. Drawing up an electrical safety agreement**

The person in charge of the task shall draw up a written electrical safety agreement with the client with respect to work carried out on electrical equipment or in its close proximity. An electrical safety agreement is also drawn up when working in facilities of Helen Electricity Network or in areas administered by the company, e.g. in rights-of-way.

The electrical safety agreement shall be drawn up either for a specific task or as a permanent contract between Helen Electricity Network and the persons or work teams appointed by the service.

The person in charge of the task and the client shall check with respect to each task whether a task-specific electrical safety agreement is required, whether there is a permanent agreement in effect for the task in question, or whether the task nevertheless requires drafting of a separate agreement due to its special nature. The person in charge of the task is responsible for drawing up the electrical safety agreement. The agreement is signed by the person in charge of the task and the client.

An electrical safety agreement form can be obtained from the client, the operation center or on the Helen Electricity Network website. The details of the electrical safety agreement must be delivered to the operation center for information.

### **2.2.7. Requesting of work preparation permit**

110 kV cables, overhead lines and primary substations:

- Operation Center

Secondary substations, 10-20 kV cables and overhead lines:

- Operation Center or DSO's contact person

0,4 kV cabinets, cables and overhead lines:

- Low voltage service center

Unless the work is done to electrical equipment or in their immediate vicinity, work preparation permit must be received from the following instances:

- Operation Center
- Low voltage service center
- DSO's contact person

The granting of a work preparation permit can be agreed on in further detail in the service contracts between Helen ElectricityNetwork and the service providers.

**When requesting the work preparation permit,  
the following must be reported:**

- Contact details of the person in charge of the task
- The task
- The object of work
- The work period, for instance, the day of commencement and completion of the work
- The number of persons present in the work area
- Impacts of the work on the electrical equipment and network
- Special matters related to the work and working conditions, as well as other aspects to be taken into account.

### **2.2.8. Issuing a work permit**

When a work commencement permit has been obtained from the operation center or other relevant party, and all matters related to work safety have been taken into account and carried out, the person in charge of the task shall issue a work permit to all work teams under his supervision.

After receiving the work permit, the work teams may start their actual work.

Every employee is responsible for safety in their own tasks. The impacts of the tasks on the safety of other people must also be taken into account.

### 2.3. Instructions after completion of work

When the job in the work area has been completed and the object of work can be connected and is available for operation, the person in charge of the task shall issue an operational readiness notice to the Helen Electricity Network department that issued the work preparation permit.

After the operational readiness notice has been issued the electrical equipment that has been worked on must be regarded as an energized part of the electricity network.





### **3. Operational procedures**

#### **3.1. Principles of operation**

In operation, Helen Electricity Network's S-series directives and the instructions provided by the operational management of Helen Electricity Network shall be complied with.

Switching actions can be carried out under the authority of the operational management and only by persons with a valid switching permit issued by Helen Electricity Network. Creation of switching schedules under the authority of the operational management can only be done persons who fulfill the necessary educational and competence requirements.

When switching actions are carried out through remote control, the switching gear premises must be vacated. The operation center must ensure this where possible.

When switching actions are carried out through local control, only persons carrying out the switching actions may be present in the switching gear premises.

In the event of a malfunction, which may result in danger to life or property, and which requires urgent repair, the operation center must be contacted immediately, tel. +358 9 419 5724, and an interruption should be requested, i.e. disconnecting and earthing the energized connection of the hazardous part of the electricity network.

### 3.2. Operational interruptions

If the work carried out on electrical equipment or in its immediate proximity requires interruption, act as follows:

1. The need for interruption must be clarified with the operational planning or operation center of Helen Electricity Network, and the interruption proceedings must be arranged with them. The time limits in section 2 must be observed.
2. An interruption order is made on the online form: [www.helen.fi/keskeytystilaus](http://www.helen.fi/keskeytystilaus)

The order must be made with respect to substations and the high voltage network (110 kV overhead lines and cables):

- At least twelve (12) working days before the intended time of interruption in the network sections linked to Fingrid Oyj's grid, the network of Vantaa Energy Electricity Networks, and the railway electricity network of the Finnish Transport Agency.
- Elsewhere, ten (10) working days before the intended time of interruption.
- In the medium-voltage network (20 kV and 10 kV secondary substations) the order must be made at least seven (7) working days before the intended time of interruption.
- In the low-voltage network, the person in charge of the task shall agree with the client on the interruption arrangements required for the task in the planning or ordering stage of the task.
  - Low voltage service center ensures that the interruption is feasible and conveys the interruption order to switching planning.

3. Regarding high and medium voltage network, operations planning, or operation center ensures that the interruption can be implemented and conveys the interruption order to switching planning. Operations planning may compose the switching schedule if necessary.
4. When the switching schedule is ready it is simulated and inspected by control center or low voltage service center.
5. An operational interruption is carried out under the direction of the operation center or low voltage service center in accordance with the switching schedule.
6. When the operational interruption has been arranged, work on the electricity network is carried out according to the guidelines laid out in this document.
7. After the work is completed, guidelines laid out in this document shall be complied with.

After the work is completed, supply shall be restored to the part of the network in which the work was carried out. The person in charge of the task shall ensure together with the operation center or the client that the restoration switching is also carried out in accordance with the switching schedule.

## **4. Safety instructions**

### **4.1. Safety regulations and directives**

1. Study carefully the safety guidelines of Helen Electricity Network.
2. Safety-related legislation, regulations by the authorities, as well as the instructions and standards must be observed in all tasks and work procedures.

3. The standard SFS 6002 Safety at Electrical Work must be complied with in all work carried out on electrical equipment.
4. With respect to other than electrical work, general occupational safety regulations must be observed, taking into account the requirements of standard SFS 6002 on working in the close proximity of electrical equipment.
5. In all work, the contractor must appropriately perform the inspections and audits related to its own tasks in accordance with legislation, regulations and instructions by the authorities, as well as the applicable standards. The person in charge of the task shall deliver the appropriate documents of the inspections to the client.



## 4.2. Personnel requirements

1. In all work carried out on electrical equipment, the contractor must have an electrical work manager as required by legislation.
2. For each task, the contractor must appoint the persons specified in section 3.2.
3. Everyone working on the electricity network must have the competence, training (also general electrical safety training) and work experience respective to each task. Appropriate training for working on the network concerned must also be provided for these persons. The person in charge of the task is responsible for this with respect to the work teams under their responsibility.
4. The contractors are responsible for the subcontractors they employ in all respects in the same way as for their own employees.

## 4.3. Guidance

1. The client is responsible for providing instruction to the contractor's person in charge of the task in the special features of the work area. The necessary information related to the task and workplace, i.e., the nature and object of the work, working conditions and environment, is given in the instruction.
2. After receiving appropriate instruction, the contractor's person in charge of the task is responsible for the instruction of workers in work teams under their responsibility.
3. If you feel that you have not received adequate instruction, do not start work! Bring this to the immediate attention of the client.

Employees are entitled and even obliged not to carry out tasks that they find hazardous due to the conditions of the work area or for similar reasons, or because they do not have the required

professional skills, training, work experience or instruction for the work.

#### **4.4. General worksite and labor arrangements**

1. The person in charge of the task shall ensure that the protective equipment of the employees under his or her charge are appropriate for each task.
2. The work must be organised in such a way that it will not cause a risk to those working on the site or to outsiders. If the risk of accident or sickness cannot be avoided or restricted to a sufficient degree with technical protection measures or through work organisation, the person in charge of the task must acquire the appropriate personal protective equipment for the use of the employees. In addition, the person in charge of the task must take steps to stop access to the worksite by outsiders and to prevent the spread of harmful substances and their impacts.
3. The work area shall be defined and marked clearly. The person in charge of the task shall take care of the planning and implementation of the worksite protection and marking procedures to ensure the occupational safety of those working on the site and the safety of outsiders.
4. The instructions and restrictions on the work and rest areas by the authorities, landowners and representatives of Helen Electricity Network must be complied with.

#### **4.5. General safety instructions**

1. Those carrying out tasks that are subject to a licence or require special qualifications (electrical work, blasting, voltage work, hot work, gas handling, work taking place in public road areas, etc.)



must be in the possession of the relevant permits and qualifications.

2. Before starting work, always ensure the safety of your work area and equipment.

If unsure, the person in charge of the task must request the operation center to send an expert of Helen Electricity Network to ascertain the matter.

The equipment must be safely disconnected from the electricity network in compliance with standard SFS 6002.

3. Do not touch the equipment if you are not certain of its safety. Also, avoid being within its range of action. The equipment may be operated automatically or remotely.
4. When carrying out and planning the work, the requirements of the environment and the climate and weather conditions must be taken into account. For example, in thunderstorms or with an impending electrical storm, working on or near electrical equipment exposed to lightning strikes is prohibited.
5. When carrying out in hot work carried out in facilities administered by Helen Electricity, in addition to the hot work card, a written (for premises with a risk of fire or explosion) or verbal (for premises with no risk of fire) permission must be obtained from the client or the representative of the premises.

The person in charge of the task must make sure of necessary reduction of fire load, related protection and preliminary firefighting readiness, as well as subsequent fire watch on site.

Particular attention should be paid on the disconnection and restoration of fire alarm and fire-fighting systems. These must be

carried out according to case-specific instructions obtained from the client.

Note that the gases used in automatic fire-fighting equipment may pose a threat to life after the extinguishing system is triggered.

Before working in premises with a fire-extinguishing system, you must study the safety data sheet of the gas in question and the instructions for operating the equipment.

6. SF6 gas and especially its degradation compounds used in the switchgear of substations and distribution substations are hazardous.

Before working in premises with equipment containing SF6 gas, you must study the safety data sheet of the gas in question and the instructions for operating the equipment.

7. If lifting work takes place in the proximity of overhead lines or outdoor switchyards, the work must not be started before an expert of Helen Electricity Network has carried out a safety audit and drawn up an electrical safety agreement with the person in charge of the task.
8. Portable scaffolding and the railings of temporary gaps must have a valid scaffolding card, displaying the name and telephone number of the person in charge of the task.
9. Entering tanks, conduits etc. is prohibited without the permission of the person in charge of the task and working inside them is not permitted without constant supervision.
10. It is not permitted to enter the site or work there under the influence of alcohol or other intoxicants. It is also prohibited to bring or consume alcohol or other intoxicants on site.

11. Smoking is prohibited in all indoor areas of Helen Electricity Network and in inflammable places.
12. If someone's conduct does not meet the requirements of safe work, you must intervene in an appropriate manner. A good working atmosphere is an essential part of a safe working environment.

#### 4.6. Industrial safety instructions

1. Access rights to Helen Electricity Network's sites are personal and granted at the company's discretion according to need. They are either valid until further notice or granted for each job separately. Personal access passes, keys and access permits must not be passed on to third parties without the permission of their issuer. Applications for access rights are submitted through the HSV contact person or by sending the application to HSV-kulkuoikeudet@helen.fi. The application is usually drawn up by the person's line manager, enclosing signed copies of safety guidelines training and local instruction, if necessary.
2. The name of the employer must be clearly displayed on the identity card, which is kept on view. You must be able to prove your identity on request.
3. Unauthorized persons must keep out of Helen Electricity Network's premises. The movement and presence of outside persons in Helen Electricity Network's premises and sites, as well as bringing them to these facilities or providing them with access to them, is prohibited without the client's permission.
4. After passing through doors and gates, it must be ensured that the locks have re-engaged. External doors and the doors of premises with electrical equipment must not be propped open without constant supervision.
5. The contractor's employees and other people moving around the site must not pass on information related to the production process, finances or other confidential matters to third parties.



#### **4.6.1. Going to/from primary substations**

When going to a primary substation managed by Helen Electricity Network, one must log in by showing their ID-card to the reader outside the entrance door. Each person going into the primary substation is required to log in like this. In the case that some people are escorted into the primary substation without a suitable ID-card information regarding these people must be communicated to the control center. When leaving the primary substation, each person logs out of the facility by showing their ID-card to the reader inside and next to the entrance door.

When going to a primary substation withing working hours (7-16), registering to the control center (via phone) is not required, unless:

- Work carried within the primary substation causes events or alarms to the control center.
- If there is no certainty that work carried within the primary substation causes events or alarms to the control center.

When going to a primary substation outside working hours (7-16) or if the work carried within the primary substation causes events or alarms to the control center, registering to the control center (via phone) is mandatory before entering and leaving the facility.

This enables the control center to have awareness that the security systems in the primary substation are disabled accordingly.

When in a primary substation, if a security alarm occurs, one must contact the control center to resolve the situation.

#### **4.6.2. Going to/from secondary substations**

When going to a secondary substation within working hours (7-16), registering to the control center (via phone) is not required, unless:

- Switching actions are about to be performed.
- Work carried within the primary substation causes events or alarms to the control center.
- If there is no certainty that work carried within the primary substation causes events or alarms to the control center.

When going to a secondary substation outside working hours (7-16) or in the contexts mentioned, registering to the control center (via phone) is mandatory before entering and leaving the facility.

S-instructions describe in more detail the procedures one must take when going to a secondary substation with automation equipment.



## 5. Instructions in case of hazardous situations and accidents

### 5.1. Instructions in case of hazardous situations

Everyone is obliged to intervene in hazardous situations they have detected and to ensure their own safety and the safety of anyone their work may have an impact on.

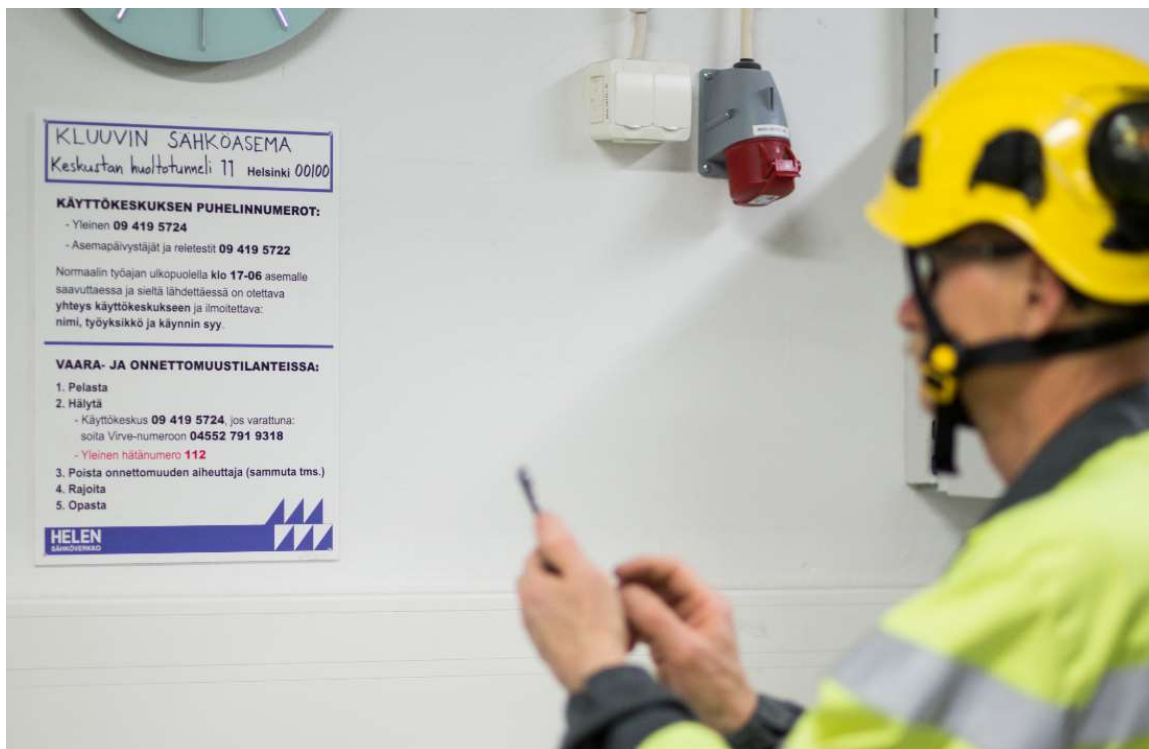
If a defect, fault etc. may cause danger to life, health or property, the person who detected it must take immediate steps to eliminate the hazardous situation!

Hazardous defects or faults detected on the electricity network must be reported to the client or the operation center. Also report the matter to the person in charge of the task.



## 5.2. Instructions in case of an accident

- **Rescue**
- **Warn**
- **Alert**
  - **Emergency number 112**
  - **Operation center + 358 9 419 5724**
- **Extinguish**
- **Restrict**
- **Guide**



## 6. Safety instructions of Helen Electricity Network

The safety instructions at Helen Electricity Network consist of:

- Helen Electricity Network electricity network safety guide (this guide)
- Helen Electricity Network safety instructions (T series)
- Helen Electricity Network operational instructions (S series)
- Helen Electricity Network environmental guidelines

All of the above instructions are available from the person in charge of the task, from the client and on the Helen Electricity Network website [www.helensahkoverkko.fi/turvaohjeet](http://www.helensahkoverkko.fi/turvaohjeet).

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