

Instructions

Instructions for the high-voltage Work Controller

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1 Governing policy and legislation

These Instructions for the high-voltage Work Controller are subordinate to [policy sikkerhet](#) (Safety Policy). They are a supplement to, and superseded by [FSE 2006](#) (Safety regulations related to the maintenance and operation of electrical installations) which is pursuant to the "[Lov om tilsyn med elektriske anlegg og elektrisk utstyr](#)" (Act relating to the Inspection of Electrical Installations and Electrical Equipment).

2 Purpose and validity

The purpose of these Instructions is to ensure a high level of electrical safety during work on or in the vicinity of Statnett electrical installations and during their operation, by requiring adequate planning of all activities and the implementation of necessary safety practices to avoid any risk to life, health, or property.

This set of instructions applies to all high-voltage installations where Statnett has operational responsibility. They are also valid for installations under construction and demolition, conducted under Statnett's responsibility where this has been agreed upon or described in writing.

3 Intended audience

All Statnett and external employees who are authorised Work Controllers in Statnett.

4 Definitions

Operation Controller: Person appointed to have responsibility for ensuring that all necessary switching operations in high-voltage installations are conducted safely.

Work Controller: Person appointed to have responsibility for the electrical safety at the worksite.

Safety Observer: Person instructed and appointed by Work Controller to supervise the work when Work Controller has to leave the work site. The Safety Observer may/shall halt the work when necessary but is not allowed to restart the work or implement/remove safety measures.

Installation Manager: Person appointed by the owner/manager to carry out and be responsible for the ongoing management and maintenance of electrical installations.

Worksite: Positions where personnel and equipment are inside the live working zone, or where there is a risk of entering the live working zone. The outer limit of live working zone is determined by the system voltage, cf. FSE § 5, table 1.

High-voltage (HV): Normally exceeding 1 kV AC or 1,5 kV DC

5 Work Controller

- 5.1 Before being appointed, the Work Controller must plan the work according to instructions/procedures and assess the need for a Safe Job Analysis (SJA).
- 5.2 Concerning work **on, or in the vicinity of, earthed and short-circuited installations**, before being appointed to a job, the Work Controller must gain confirmation from the Operation Controller, that necessary de-energising, as well as labelling, re-energising prevention, inspection – MSI (Norwegian abbreviation), and terminal earthing, has been carried out.
- 5.3 The Work Controller shall personally receive and document the appointment for each specific work task **on or in the vicinity of earthed and short-circuited installation** from Operation Controller.
 - 5.3.1 Before being appointed to a job, the Work Controller must inform the Operation Controller about the number of portable earthing devices they plan to use.
 - 5.3.2 After being appointed, the Work Controller must inform the Operation Controller if the number of portable earthing devices used differs from what was planned.
- 5.4 The Work Controller shall personally receive appointment from **the Local Area Manager**, or person with such authorization stated on the safety card ("UL"), for each specific work task **in the vicinity of energised installations**. Appointment must follow section 4.6 in [Electrical safety procedural works](#): Appointing Work Controller for work on disconnected or in the vicinity of high-voltage installations, and appointing Work Controller for work on or in the vicinity of low-voltage installations. Before work can begin, the Work Controller must send notification in accordance with section 3.3 in [Electrical safety procedural works](#): Use of SMS notification by personnel in high-voltage installations.
- 5.5 The Work Controller shall personally receive appointment from **the Local Area Manager**, or person with such authorization stated on the safety card ("UL"), for each specific work task **for installations under construction or demolition**.
 - 5.5.1 Internal Work Controller must use section 4.6 in [Electrical safety procedural works](#): Appointing Work Controller for work on disconnected or in the vicinity of high-voltage installations, and appointing Work Controller for work on or in the vicinity of low-voltage installations.
 - 5.5.2 External Work Controller must use section 5.1 in [Electrical safety procedural works](#): Construction, demolition and removal of disconnected high-voltage transmission lines and substations.
- 5.6 The Work Controller is responsible for electrical safety associated with all work **on, or in the vicinity of, high-voltage installations**, and must ensure that work is conducted in a safe manner in accordance with the applicable regulations and instructions/procedures.
- 5.7 The Work Controller must personally explain his function to the rest of the team and give them necessary instructions about pending work. The Work Controller must wear a safety vest or armband with the text "Leder for sikkerhet". The Work Controller must be able to communicate directly with the team, without use of an interpreter or intermediary.
- 5.8 When working **on, or in the vicinity of, earthed and short-circuited installations (including installations under construction/demolition)**:

- 5.8.1 The Work Controller must personally check that the installation at the worksite is not energised in accordance with section 4.4 in [Electrical safety procedural works](#): Voltage testing, and carry out necessary earthing and short-circuiting. Earthing and short-circuiting must be visible from the worksite¹, or be located in a position where an equivalent degree of visibility is assessed to be achieved, based on a risk analysis². The Work Controller must personally check that all equipment used for voltage testing and earthing bears a valid sticker and check that the equipment is in satisfactory condition in accordance with the user manual. Equipment must also be wiped dry if it is damp.
- 5.8.2 Concerning work on **transmission lines**³, it is mandatory to use 2 sets of earthing equipment. Their location must be chosen to eliminate any possibility of induced voltages and the risks this could cause to personnel, even if one of the earthing devices should fail. If it is possible to eliminate⁴ any risk to personnel from induced voltages, and/or if a fixed earthing switch or manual earthing- and short-circuiting rod is used for earthing at the site of the work, only one earthing is required.
- 5.8.3 During voltage testing and setting up/removing temporary earthing⁵, at least **two persons must be present**. At least one of these must hold Work Controller authorisation. Voltage testing must be carried out on site using voltage testing equipment. For the second person, an **independent access permit** (ref. [Instructions for training/access/safety cards to Statnett's electrical installations](#)) to the installation is required and the person must have a relevant trade certificate or relevant approval for the task by the Directorate for Civil Protection. Earthing equipment must be available at the site where voltage testing is being carried out. Earthing must be carried out directly after voltage testing.
- 5.8.4 The second person must contribute to and assist the Work Controller in carrying out voltage tests and setting up/removing temporary earth or other earthing device, as planned. The second persons name must be documented by the Work Controller in the duty journal/scribbling pad (transmission lines).
- 5.9 The Work Controller must determine the correct safety distance and set up necessary protection and barriers at the site of the work.
- 5.10 The Work Controller must instruct the rest of the work team in person and give them permission in person to start the job.
- 5.11 The Work Controller must oversee the work or appoint and instruct a Safety Observer⁶ to this task. Please refer to the applicable enclosure to these Instructions. The Safety Observer must wear a safety vest or armband with the text "Overvåker". The Safety Observer has limited authority and may not alter implemented safety measures. The

¹ Visible from the worksite: It must be possible to observe the earthing visually. Status of the earthing can be communicated to the workteam by telephone or radio communication.

² An equalisation connection between work equipment and installation components can be used, in addition to the necessary earthing on-site to avoid electrostatic discharge through personnel in the event of strong induction.

³ This includes work on lines under construction.

⁴ Proof that there is no danger of induced voltages and associated risks must be documented with reference to procedures or by means of a risk analysis. If there is no risk of danger to personnel from induced voltages at the worksite, or if a distance from induced installation parts of more than four hundred millimetres can be maintained to both people and equipment, this must be documented. External parties must send information in the form of documentation to their employer at Statnett.

⁵ Parallel connection of earthing equipment must be clarified with the supplier of the earthing equipment to obtain information about procedures and to establish the critical level in relation to short-circuit current.

⁶ If the work that is going to be overseen is of electroprofessional character, the Safety Observer must have a relevant trade certificate or relevant approval for the task by the Directorate for Civil Protection.

Safety Observer can halt work if there is any uncertainty, but the work cannot start up again until the Work Controller has checked the safety measures and given permission in person for work to restart.

In practice, this means the Work Controller must give permission in person to start the work in progress at the beginning of each day, having first checked the safety measures.

- 5.12 The Work Controller must inform the person that appointed him if, for any reason, he cannot continue in the role of Work Controller, and a new Work Controller must be appointed. The former Work Controller must inform the new Work Controller of all safety measures that have been set up.
- 5.13 The Work Controller is responsible for stopping all work if there is any risk of lightning.
- 5.14 The Work Controller must ensure that all work stops if a drop in pressure is predicted in secured SF6- and DCB switches. Work can continue when the Work Controller has received confirmation that conditions have improved sufficiently.
- 5.15 The Work Controller must inform the rest of the team that the installation must be treated as energised when work has ceased. The Work Controller must reverse/dismantle all safety measures and check that it is safe to re-energise the installation.
- 5.16 Concerning work **on, or in the vicinity of, earthed and short-circuited installations**, the Work Controller must notify the Operation Controller in person that the installation is ready to be re-energised. This must be documented and shall be done without undue delay after the work has been completed.
- 5.16.1 The Work Controller must also notify the Operation Controller of the number of portable earthing devices that have been removed.
- 5.17 Concerning work **in the vicinity of an energised installation**, the Work Controller must report the work terminated in accordance with section 4.6 in [Electrical safety procedural works](#): Appointing Work Controller for work on disconnected or in the vicinity of high-voltage installations, and appointing Work Controller for work on or in the vicinity of low-voltage installations. In addition, the Work Controller must send notification of this in accordance with section 3.3 in [Electrical safety procedural works](#): Use of SMS notification by personnel in high-voltage installations.
- 5.18 Concerning work task **for installations under construction or demolition**, internal Work Controller must report the work terminated in accordance with section 4.6 in [Electrical safety procedural works](#): Appointing Work Controller for work on disconnected or in the vicinity of high-voltage installations, and appointing Work Controller for work on or in the vicinity of low-voltage installations.

6 Abstinance from intoxicants

Persons appointed to be Work Controller must agree to refrain from consuming alcohol or other intoxicants during the 8 hours prior to starting work.

7 Confirmation of compliance

The responsibility for checking compliance with instructions lies with the document holder and approving body.

The position of the Installation Manager includes authority to draw up and approve work procedures, guidelines and instructions in areas covered by electrical safety in accordance with [policy sikkerhet](#) (Safety Policy – Norwegian document only).

8 Enclosures and references

Enclosure:

- Appendix to instructions

References:

- [Policy sikkerhet](#) (Safety Policy – Norwegian document only) (SDOK-856-6)
- [Instructions for the Operation Controller](#) (SDOK-515-54)
- [Instructions for earthing when replacing joints and/or cutting of conductors on transmission lines](#) (SDOK-515-58)
- [Instructions for the high-voltage Work Controller in case of Live Work](#) (SDOK-515-59)
- [Instruks for åpning av celledører i platekapslede høyspenningsanlegg](#) (Instruction for opening a celldoor in a sheet enclosed high-voltage installation – only in Norwegian) (SDOK-515-17)
- [Instructions for the Work Controller and clearing teams when clearing wooded areas near high-voltage lines](#) (SDOK-515-57)
- [Instruction for connecting and disconnecting earth electrode installations](#) (SDOK-515-61)
- [Instruction for training/access/safety cards to Statnett's electrical installations](#) (SDOK-515-60)
- [Instruks for planlegging av arbeid i elektriske anlegg](#) (Instruction for planning of work in electrical installations – only in Norwegian) (SDOK-515-36)
- [Electrical safety procedural works](#) (SDOK-515-73)
- [Procedure for Safe Job Analysis \(SJA\)](#) (SDOK-587-48)
- [Safety regulations related to the maintenance and operation of electrical installations](#) (FSE 2006) (www.dsb.no)
- [Lov om tilsyn med elektriske anlegg og elektrisk utstyr](#) (Act relating to the Inspection of Electrical Installations and Electrical Equipment – only in Norwegian) (www.lovdatab.no)

9 Version log

Valid as of	Revision classification (New/Updated/Vocabulary/None)	Description of important changes
01.01.2024	Updated	Changed name of roles: Safety Supervisor – Work Controller Switching Supervisor – Operation Controller Operations Manager – Installation Manager 5.11: Added that the permission for starting work applies to work in progress.

APPENDIX TO INSTRUCTIONS – APPOINTMENT OF SAFETY OBSERVER

Number or date/time on work permit:

Short description of work operation:
.....
.....
.....
.....

I hereby declare that I have received instruction from the Work Controller (name/block capitals):

.....
with respect to the safety measures implemented, and that I have been made aware of the risks associated with working in the vicinity of a high-voltage installation. I agree to comply with the instructions that I have received.

Place: **Date:**

Name (block capitals):

Signed: _____

This declaration must be filed locally.

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Revision	Approved	Approved by	Description
6.0	Show changes 02.01.2024	Arnfinn Granheim	See the version log
5.0	Show changes 02.01.2024	Arnfinn Granheim	See the version log
4.0	Show changes 30.12.2022	Arnfinn Granheim	See the version log
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2.0	Show changes 29.12.2021	Arnfinn Granheim	See the version log
1.0	Show changes 08.12.2021	Arnfinn Granheim	Migrated from IFS#1198675