


Requirement	The Statkraft Way	
Open	<b>Safety Supervisor LV and Safety Supervisor LV Nominators</b>	

## Content

<b>1</b>	<b>PURPOSE</b> .....	<b>1</b>
<b>2</b>	<b>SCOPE</b> .....	<b>1</b>
<b>3</b>	<b>RESPONSIBILITIES</b> .....	<b>1</b>
<b>4</b>	<b>DESCRIPTION OF THE PROCEDURE</b> .....	<b>2</b>
	4.1 Validity .....	2
	4.2 Work planning .....	2
	4.3 Establishment of safety measures at disconnection points .....	2
	4.4 Establishment of safety measures at the workplace .....	3
	4.4.1 Establishing .....	3
	4.4.2 Disconnection/Live work .....	3
	4.4.3 Briefing .....	3
	4.5 Commencement of work.....	4
	4.6 Removal of safety measures .....	4
	4.6.1 Briefing .....	4
	4.6.2 Removal .....	4
	4.7 Reconnection of installations .....	4
	4.8 Duration, updating and distribution .....	4
<b>5</b>	<b>REFERENCES</b> .....	<b>5</b>
	5.1 Internal references, Skagerak Kraft AS .....	5
	5.2 Internal references, Statkraft Energi AS .....	5
	5.3 External references .....	5

## 1 PURPOSE

To address safety regarding work on or in the vicinity of low-voltage equipment.

## 2 SCOPE


This instruction applies to all work involving low-voltage equipment in Norway for which Skagerak Kraft AS (SK) or Statkraft Energi AS (SE) has operational responsibility.

Persons approved as a Safety Supervisor Low Voltage (SSLV) and Safety Supervisor LV Nominator (SSLV Nominator) (a person who nominates a Safety Supervisor LV) shall be regulated through the safety card for electrical installations.

## 3 RESPONSIBILITIES

The person appointed and the person appointing SSLV is responsible for ensuring that this instruction is followed. The Operations Manager LV shall ensure that activities regulated by this instruction, is carried out appropriately. The Operations Manager LV is responsible for the making and updating of this instruction.

Only the Operations Manager LV has the authority to give deviation permit

Requirement  Open	<p>The Statkraft Way</p> <p><b>Safety Supervisor LV and Safety Supervisor LV Nominators</b></p>	 <b>Statkraft</b>
-------------------------	---	--

## 4 DESCRIPTION OF THE PROCEDURE

The appointed SSLV shall fulfil requirements according to Norwegian FEK 2013 and ensure that the work is carried out in accordance with the “Forskrift om sikkerhet ved arbeid i og drift av elektriske anlegg” (FSE 2006) and this instruction. The sections (§) refer to FSE 2006.

Appointment of SSLV shall be documented and the SSLV Nominator shall see to it is done.

The documentation shall be stored min. one year after the work is finished.

### 4.1 Validity

This instruction applies to all types of work on disconnected installations (§ 14), in the vicinity of live components (§ 17) and work carried out on live installations (§ 16).

### 4.2 Work planning

The SSLV Nominator shall appoint a SSLV from prequalified personnel and ensure that the SSLV possesses the necessary qualifications for the work being performed, ref. FEK 2013.

The SSLV is responsible for ensuring that the safety aspects of the work are well planned (§ 10) and that a Safe Job Analysis (SJA) is carried out before the safety measures are established and the job starts.

The planning shall as a minimum cover the following:


- Obtain information concerning the installation
- Risk assessment
- Evaluate safety measures when there is a risk of induction or input from others connected to the grid
- Choice of work method
- Assessment of any necessary equipment
- Measuring instruments shall as a minimum be of category 3.
- Assessment of any necessary use of personal protective equipment
- Assessment of the qualification requirements for the work team
- Personnel instruction

Persons to be appointed as SSLV must have a good operational knowledge of the installation, understand its design and operation and be familiar with the installation.

The SSLV shall be able to communicate directly with all participants in the work team without the use of intermediaries (e.g. interpreters).

If an SSLV does not feel competent enough to perform his duties as SSLV for a particular work assignment, he or she shall be obliged to stop the work.

### 4.3 Establishment of safety measures at disconnection points

Requirement  Open	The Statkraft Way  <b>Safety Supervisor LV and Safety Supervisor LV Nominators</b>	 <b>Statkraft</b>
-------------------------	--	--

The SSLV shall ensure that the installation is disconnected (§ 11) and that any necessary safety measures are established at the disconnection points. The safety measures are as follows:

- Disconnection (§ 14)
- Establishment of precautions to prevent reconnection (§ 14). Switches/Fuses that can make the workplace live must be secured against reconnection and be labelled.

The SSLV must lock and y all disconnected switches/circuit breakers that is a part of the disconnection with its personal LOTO-lock.

If the same switch/circuit breaker is included in a various of jobs with different SSLV, each of the SSLV must lock with their personal lock. External SSLV with approval are preferably to use LOTO-equipment belonging to Statkraft Energi in the installation.

## 4.4 Establishment of safety measures at the workplace

### 4.4.1 Establishing

The SSLV shall ensure that necessary safety measures are established both at the disconnection point and the workplace. If the establishment of safety measures entails risk, at least 2 persons shall be present. The safety measures required are as follows:

- Disconnecting
- Voltage checks (§ 14)
- Possible short circuits/earthing (§ 14)
- Disconnecting
- Signag/locking
- Possible cordoning-off
- Screening in connection with work taking place in the vicinity of (§ 17).
- Where it is facilitated for LOTO, LOTO must be used

Where several working teams use common safety measures, separate marking tags / locks for each working team (LOTO) shall be used. Also applies to other parallel activities, for example in the waterway.

### 4.4.2 Disconnection/Live work


If it is not possible to prevent contact and eliminate the risk of tools causing short circuits and/or earth fault, the equipment shall be isolated or the work carried out as Work on Live Equipment (live work). Supplementary training of executive personnel is required for live work (§ 16). A new SJA shall be carried out in the case of unplanned live work.

A minimum of two people shall be present if the establishment of safety measures involves risk.

### 4.4.3 Briefing

The SSLV shall inform everyone in the work team of his function and give any necessary instructions regarding the work. This must cover:

- Scope of work
- Delimitation of the workplace
- Implementation of safety measures

Requirement  Open	The Statkraft Way  <b>Safety Supervisor LV and Safety Supervisor LV Nominators</b>	 <b>Statkraft</b>
-------------------------	--	--

- Permitted work positions.

A new SSLV must be nominated if the SSLV has to leave the workplace.

The SSLV shall wear a fire resistant reflective vest or armband marked Safety Supervisor LV.

## 4.5 Commencement of work

The installation shall be considered to be energized until all safety measures have been established, only then SSLV can initiate the work.

## 4.6 Safety during work

AFA must ensure that the work takes place safely, and to the necessary extent control the safety measures.

## 4.7 Removal of safety measures

### 4.7.1 Briefing

Upon completion of work, the SSLV must personally inform everyone in the work team that the workplace must now be treated as live (§ 15), and that the safety measures will end (§ 18).

### 4.7.2 Removal

The SSLV is responsible for removing the safety measures at the workplace and disconnection point. Two people shall be present if the removal of safety measures involves risk.

When all safety measures are completed and the work is completed, the designation of SSLV is withdrawn.


## 4.8 Reconnection of installations

In the case of test reconnection following a fault or alteration to the installation, reconnection should be carried out using a breaker or fuse box designed for this.

A SJA shall be carried out if reconnection is to be carried out locally. An assessment shall be carried out to determine whether two people should be present (§ 11).

## 4.9 Duration, updating and distribution

The instructions shall apply from the date of approval until it is replaced by new instruction, and must be distributed to everyone who has been prequalified as an SSLV.

Requirement  Open	<p>The Statkraft Way</p> <p><b>Safety Supervisor LV and Safety Supervisor LV Nominators</b></p>	 <b>Statkraft</b>
-------------------------	---	--

## 5 REFERENCES

### 5.1 Internal references, Skagerak Kraft AS

- |       |                                   |   |
|-------|-----------------------------------|---|
| 5.1.1 | Losen, Kraft, HMS, Elsikkerhet    | Instruks for el-sikkerhet.  |
| 5.1.2 | Losen, Kraft, HMS, Elsikkerhet    | Ansvarlig For Arbeid (AFA) og utpeker av AFA.                         |
| 5.1.3 | Losen, Kraft, HMS, Elsikkerhet    | Arbeid Under Spenning (AUS).  |
| 5.1.4 | Losen, Kraft, HMS, Elsikkerhet    | Inspeksjon og kontroll av lavspenningsanlegg                          |
| 5.1.5 | Losen, Kraft, HMS, Elsikkerhet    | Risikovurdering – samsvarserklæring – innmelding til systemansvarlig. |
| 5.1.6 | Losen, Kraft, HMS, Sikkert arbeid | Bruk av personlig verneutstyr.  |

### 5.2 Internal references, Statkraft Energi AS

- |        |   |  |
|--------|---|--|
| 5.2.1. | Styrende dokument P-23  | Tilsyn – drift og vedlikehold av elektriske anlegg |
| 5.2.2. | Styrende dokument P-23/120  | Instruks for el-sikkerhet.                         |
| 5.2.3. | Styrende dokument P-23/122  | Instruks for LOTO-sikring elektro.                 |
| 5.2.4. | Styrende dokument P-23/136  | Arbeid Under Spenning (AUS).                       |
| 5.2.5. | Styrende dokument Doc-no 18-01  | Prosess for Arbeidstillatelse i Norge for P        |
| 5.2.6  | Styrende dokument Doc-no 20-2   | Isolering av energikilder med LOTO                 |
| 5.2.7  | Guideline Current transformers –commissioning installation, work in secondary circuits and installation of equipment. Doc-no 2018-04486 |  |
| 5.2.8  | Guideline Voltage transformers –commissioning installation, work in secondary circuits and installation of equipment. Doc-no 2018-04487 |  |

### 5.3 External references

- |        |  |
|--------|--|
| 5.3.1. | FSE 2006 Forskrift om sikkerhet ved arbeid i og drift av elektriske anlegg.  |
| 5.3.2. | FEF 2006 Forskrift om elektriske forsyningsanlegg.   |
| 5.3.3. | FEL 1998 Forskrift om elektriske lavspenningsanlegg.   |
| 5.3.4. | FEK 2013 Forskrift om elektroforetak og kvalifikasjonskrav for arbeid knyttet til elektriske anlegg og elektrisk utstyr. |
| 5.3.5. | NEK 400: 2018  |