


Requirement Open	The Statkraft Way Switching Assistant - Instruks for kobler	 Statkraft
-----------------------------	---------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------

Content

1	PURPOSE	1
2	SCOPE	1
3	RESPONSIBILITY	1
4	PROCEDURE	2
	4.1 Appointment.....	2
	4.2 (Dis-)connections, verifying, voltage testing, earthing, securing and tagging.....	2
5	TRAINING	4
6	REFERENCES AND DEFINITIONS	4
	6.1 INTERNAL REFERENCES SKAGERAK KRAFT AS	4
	6.2 INTERNAL REFERENCES STATKRAFT ENERGY AS	4
	6.3 EXTERNAL REFERENCES	4

1 PURPOSE

Ensure security at (dis-)connections and safety in high-voltage installations when the Switching Supervisor must use Switching Assistant.

2 SCOPE

This applies to all connections in high voltage installations where Skagerak Kraft AS (SK) or Statkraft Energi AS (SE) has operational responsibility. This is regulated through the current switching agreements and Safety Cards.


3 RESPONSIBILITY

Whoever is appointed as Switching Assistant is responsible to ensure that this instruction is followed. Operations Manager shall ensure that activities governed by this instruction are performed properly. Operations Manager is responsible for the instruction being drawn up and maintained.

Only Operation Manager has the authority to give deviation permit from this instruction.

If the Switching Assistant does not feel fit to exercise his/her function as Switching Assistant at a specific work assignment, it is the duty of the Switching Assistant to inform the Switching Supervisor about this.

Everyone who is approved as Switthing Assistant has to be updated on actual safety regulations and attend annual electrical safety courses, first aid and Statkraft internal requirements for electrical safety.

Requirement Open	The Statkraft Way Switching Assistant - Instruks for kobler	 Statkraft
-------------------------	----------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------

4 PROCEDURE

Appointed Switching Assistant must adhere to regulations issued by the Switching Supervisor, "Safety Regulations for Work and Operation of Electrical Installations" (FSE 2006) and this instruction.

4.1 Appointment

Whoever shall be appointed as Switching Assistant for high voltage installations where Skagerak Kraft AS or Statkraft Energi AS has operations responsibility must be approved in advance by The Operations Manager.

In addition to the regular appointed Switching Supervisor, switchings in high voltage installations can be delegated to a Switching Assistant. The Switching Supervisor is delegated authority to appoint Switching Assistant to a single mission among those who have received such recognition from The Operation Manager. Whoever appointed to Switching Assistant must have good operational knowledge of the plant, knowing the structure and behavior, and should easily orientate themselves in the plant.

Through this instruction The Switching Supervisor in one Region is approved as Switching Assistant for another Region. Appointment of Switching Assistant has to be done in the usual way from the Switching Supervisor.

4.2 (Dis-)connections, verifying, voltage testing, earthing, securing and tagging

The Switching Supervisor is responsible for ensuring that connections are carried out in a way which poses no risk to life, health and material assets (§ 11).

When (dis-)connections is not possible to do remotely from the dispatch centre, the Switching Supervisor must use a local Switching Assistant. The Switching Assistant shall write down the order of connections to be made and repeat it to The Switching Supervisor. The Switching Supervisor gives the (dis-)connection order to be executed and reported by The Switching Assistant.

The Switching Assistant shall, on behalf of the Switching Supervisor, ensure that (dis-)connections and safeguards are carried out safely so that this does not involve a risk of damage to life, health and property. This includes, among other things, the establishment and removal of LOTO, voltage testing and earthing on orders from the Switching Supervisor.


Voltage control by use of voltage indicator with insulated rod shall be performed with at least 2 persons present. Both the insulating rod and the indicator must be adapted to the present voltage level.

Earthing with approved portable earthing equipment must be carried out with 2 people present. The earthing equipment must first be connected to earth and then to the installation part to be earthed.


Insulating rod for applying the earthing equipment must be adapted to the present voltage level.

No activity shall cause the personnel or tools (except for insulating rods adapted to the present voltage level) to come within the risk distance.

Risk assessment and completion of SJA shall always be performed before manually voltage testing and manually earthing. There shall always be at least 2 persons present when performing these activities. When performing connecting and disconnecting of switches inclusive circuit breakers, there shall always be performed risk assessment due to the equipment's age, type and construction, whether it is necessary to have at least 2 persons present. This also includes manual synchronizing of a circuitbreaker.

Requirement Open	<p>The Statkraft Way</p> <p>Switching Assistant - Instruks for kobler</p>	
-------------------------	----------------------------------------------------------------------------------	-------------------------------------------------------------------------------------

Securing (Locking and tagging) for Switching Supervisor of electrical breakers as a safety measure to prevent rotation of generators, requires pre-approval as Switching Assistant.

Requirement	The Statkraft Way	 Statkraft
Open	Switching Assistant - Instruks for kobler	

5 TRAINING

The Switching Assistant shall receive training in FSE, instructions, plant structure and function.

Switching Assistant shall be familiar with each switch's operation and function, including breaking capacity, voltage and insulation medium.

In addition, Switching Assistant must have good knowledge of the instructions itself, as well as mandatory training. Mandatory training must have been completed.

Power plant manager / authorized shall ensure that training is in accordance with Operations Manager's instructions, procedures, policies and FSE.

Training shall be documented in the Company's internal control system.

6 REFERENCES AND DEFINITIONS

6.1 INTERNAL REFERENCES SKAGERAK KRAFT AS

- 6.1.1 Manuals Operations SK Kraft General Instruction FSE Instructions No. 1
- 6.1.2 Excel - my templates Project Risk evaluation form - Risk Analysis Project (SK Energy)
- 6.1.3 Manuals HSE book SK Kraft Form for declaration
- 6.1.4 Manuals Operations SK Kraft Instructions for AFA - FSE - Instruction No.. 5
- 6.1.5 Manuals Operations SK Kraft Instructions for LFS - FSE - Instruction No.. 4
- 6.1.6 Manuals Operations SK Kraft Instructions for LFK - FSE - Instruction No.. 3
- 6.1.7 JobTech Audit - operation and maintenance of electrical installations
- 6.1.8 During Work (JobTech) Checklist for control of work on electrical installations
- 6.1.9 Manuals HSE book SK Kraft Risk - Method (during work v / HSE section)
- 6.1.10 Manuals HSE book SK Kraft Form for risk identification -Risikoanalyse (in preparation by HSE dept.)

6.2 INTERNAL REFERENCES STATKRAFT ENERGY AS

- 6.2.1 Governing document P-23 Supervision – operation and maintenance of electrical plants.
- 6.2.2 Governing document P-23/120 Instructions for electricity safety.
- 6.2.3 Governing document P-23/140 Instructions for Switching Supervisor
- 6.2.4 Governing document P-23/145 Instructions for Safety Supervisor HV.
- 6.2.5 Governing document P-23/146 Instructions for Temporary Safety Substitute (TSS).
- 6.2.6 Governing document P-23/147 Form for appointment of Temporary Safety Substitute (TSS) in high-voltage installations.
- 6.2.7 Maintenance System Statkraft

6.3 EXTERNAL REFERENCES

- 6.3.1 FSE 2006 Safety Regulations for Work and Operation of Electrical Equipment
- 6.3.2 FEF 2006 Regulations on electrical supply