

Document type:	Document Designation:	Confidentiality class:	Appendices:	Number of Pages:
Instruction	VS-IN-01067	Medium (C2)		1 (14)
Responsible for the document:	Document owner:	Approved by:	Version no.:	Valid from:
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ELECTRICAL SAFETY INSTRUCTIONS

VATTENFALL SERVICES NORDIC AB

Abstract

Different kinds of risks arise within Services Nordic’s operations, e.g. risks of personal injuries or damage to the environment or to property.

With knowledge, engagement and constant improvements, it is our ambition to create a safety culture in which nobody is injured or becomes ill because of their work and where every employee takes an active role in preventing incidents and accidents.

The safety culture should therefore be characterised by attitudes, values, norms and compliance which managers and employees share, regarding personal safety and measures to improve personal safety in their everyday work.

We jointly create the safety culture in Services Nordic through everyone’s engagement and approach to personal safety.

Together, we are creating Sweden’s safest workplace.

<p>Vision No employees are injured at work thanks to our safety culture.</p>	<p>Employees I instinctively analyse any risks and take the necessary steps. When I perform something in a hazardous manner my colleagues let me know, and I appreciate this.</p>
<p>Customer It feels good that Services Nordic always have competent personnel who use experience feedback to minimise the risks.</p>	<p>Manager I am responsible for safety in the workplace. My most important tools are my employees’ skills and attitude in combination with our way of managing risks.</p>
<p>Subcontractor Clear and safe because Services Nordic’s rules apply to me too!</p>	<p>Relative Services Nordic always puts safety first, which gives me, as a relative, confidence.</p>

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1 Purpose

The purpose of this instruction is to give a framework and directive for how Vattenfall Services Nordic's safety work should be managed, with emphasis on electrical safety.

To ensure that all electrical work is carried out in such a way as to provide personal safety, responsibility and duties should be made clear and there should be set procedures within VSN's organisation.

2 Scope

These instructions cover all electrical work carried out at an electrical installation, and/or on an electrical equipment, by VSN or on behalf of VSN.

3 Target groups/roles

The target group for this instruction is all roles and positions within VSN both amongst our own and hired personnel and subcontractors.

4 Definitions

Expression / abbreviation	Definition
Electrical equipment	A device, apparatus or other object that produces, transfers, uses or consumes electricity, or a component of such equipment or of an electrical instal.
Electrical installation	An electrical facility for voltage, currents or frequencies which can be dangerous to people and/or property. In this instruction, electrical installation refers to electricity generation plants, electricity transfer plants and/or plants for consumption of electricity.
Electrical work	This instruction refers to work on or close to an electrical installation, such as a switching, fuse replacement, testing and measuring, troubleshooting and repairs, replacement/changes/expansion, construction, maintenance, inspection and other similar actions.
Electrical hazard	Where there is risk of injury due to an electric shock or the effect of a short-circuit or electric arc.
Elsäk-Wiki	Information page for Electrical Safety within VSN on the intraweb.
Proprietor	A physical or legal person who has the installation at his or her disposal, for example, through ownership, lease, rental agreement, contract or easement.
Skilled person	Has the competency, professional expertise and experience to be able to analyse risks and avoid potential hazards caused by electricity while working.
Qualified electrician	Person with sufficient knowledge and skills to carry out electrical installation work. Must be included in the list of Electricity Professionals according to VS-SP-00117 Self-audit scheme for electrical installation work.
Switching activities	Examples of switching activities are switching with breakers, disconnectors, creating or removing jumper, fuses or connecting piece etc.
Risk Management	Risk-P. Risk Management at planning. Carried out by the employer or by whoever this planning is delegated to. Risk-U. Risk Management at performance. Performed at the workplace by Elsäkerhetsledaren (nominated person in control of a work activity).

Expression / abbreviation	Definition
VSN	Vattenfall Services Nordic AB

5 Governance and clarification of responsibility

The CEO is responsible for the contents in this instruction

5.1 Application - Regulations, Instructions and Guidelines

ESA:

In order to meet the requirements of the Work Environment Act and the regulations of the Swedish National Electrical Safety Board, VSN has decided to adopt Swedenergy's published electrical safety instructions, ESA.

Anyone who carries out electrical work must have access to and training in current edition of ESA.

In the case in which the proprietor has additional instructions, these should be adopted. These must not go against the minimum requirements stated in ESA, regulations and Swedish standards. If additional instructions are adopted it should be clear what additions are adopted.

In the event that a purchaser does not work in accordance with the electrical safety instructions (ESA) in all respects, Vattenfall Services will assist the purchaser in finding common solutions to ensure the work can be carried out in such a way as to provide personal safety.

Other applications:

In addition to ESA regulations, standards, internal instructions/guidelines, method descriptions and customer applications should be enforced.

Where this instruction diverges from ESA then this instruction applies. This application must not go against the minimum requirements stated in ESA, regulations and Swedish standards.

5.2 Responsibility for Electricity

There are three types of responsibility for electrical safety, according to legislation; Electrical Facility Management, Personal Safety Management and Installation Management.

The legislation assumes that whoever is managing operations has made clear who in the organisation has the different areas of responsibility for electrical safety.

For contractors working on the electrical facilities of others, it is primarily Installation Management and responsibility for work posing electrical hazards (Personal Safety Management) that are relevant.

In order to be able to meet the respective areas of responsibility, the responsibility included in these duties must often be delegated. It must be stressed that the delegation of work tasks is straightforward, and that the person to whom the tasks are being delegated has enough competence and qualifications.

5.2.1 Electrical Facility Management – Electrical installations

Responsibility for an electrical installation lies with its proprietor. The proprietor is the person who has control over the facility – most often the owner or a person appointed by the owner, with authority and sufficient resources.

It is the responsibility of the proprietor of the facility to ensure that the facility is set up and in such a condition as to provide sufficient protection for people and property in its normal operation and use, as well as to supervise the facility in accordance with applicable regulations and Swedish standards.

The owner of a network operation should appoint, internally by delegation or externally via an agreement, an Elanläggningsansvarig (person responsible for an electrical installation), who has responsibility for carrying out instructions regarding the operation and management of the facility.

The proprietor should provide the necessary information about the facility, its management and any risks (for example, plants with parallel lines with a risk of induction), to those working on the facility.

In the case of generation (e.g. wind power and solar energy) for the electricity grid which is not the proprietor's, it should be documented by the proprietor of the electricity grid.

5.2.2 Personal Safety Management when working with electrical hazards

Clear responsibility for personal safety when working with electrical hazards aims to ensure that the legal requirements are met when it comes to personal safety when working on or near an electrical facility. According to work environment legislation the employer should ensure that all work is carried out in such a way that the necessary safety requirements for personnel are met.

When work requires technical knowledge and experience to prevent electrical risks or damage, it must be carried out by someone who has the knowledge and experience or is supervised to a satisfactory degree.

The work should be carried out by a person with sufficient knowledge of the facility in which the work is to be carried out. The person should also have practical experience of this kind of work. It is therefore the responsibility of the employer to ensure that the person who carries out the work has the correct training and competence for the job.

Applicable regulations and directives should be available for the people participating in the work on or close to an electrical facility, in addition each person should be instructed on the content of these.

In order to heighten safety during work which entails an electrical hazard, the employer should appoint an Elsäkerhetsledare (nominated person in control of a work activity) for each job.

5.2.2.1 Electrical Safety Planning

For each job in which there is an electrical hazard there should be electrical safety planning. The planning should include the appointment of the person(s) who must ensure that the required safety measures are taken.

At VSN this planning work is carried out by a person appointed by the employer (Risk-P) and by the Elsäkerhetsledare (nominated person in control of a work activity) by drawing up a risk management plan for the workplace (Risk-U).

The electrical safety planning should include (not in order of priority);

- collating information about the facility and its position,
- identifying the workplace,
- ensuring the right competence is available for the implementation of the work,
- identifying sources of risk,
- eliminating the identified sources of risk,
- choosing the correct working methods,
- planning necessary operational measures,
- planning safety measures,
- informing everyone participating in the work about the safety measures and
- ensuring that everyone uses personal protective equipment.

The electrical safety planning should observe whether the facility's proprietor has issued any particular instructions to prevent injuries caused by electricity.

The planning can be adapted to the scope of the work and the necessary safety measures.

5.2.3 Installation Management

At VSN, installation management and installation work are regulated in the manual VS-SP-00117 Self-audit scheme for electrical installation works.

6 Electrical safety work

The basis for a safe working method is to always have full focus on the task and its potential risks. An important part is risk management and choice of working methods/protective equipment, however, of equal importance is to not allow, for example, cellphones to create distractions that deteriorate focus on the task, at critical moments.

6.1 Electrical safety organisation ESA - Roles and responsibilities

6.1.1 Proprietor

See also 5.2.1 Facility Management – Electrical installations in this instruction.

6.1.2 Employer

The employer is the person who, within VSN, leads operations. Manager, Project Manager, Maintenance Manager, etc.

The employer shall ensure that operations are run in such a way that nobody is injured at work by, for example;

- ensuring that all work or measures which are carried out should be done in such a way that the necessary safety precautions are always met for the employee, time pressures and/or extended working shifts should not affect personal safety,
- for each job, appointing someone who is responsible for the work – Elsäkerhetsledare (nominated person in control of a work activity) – with the skills which are needed to lead the work and with the authority to take any measures that may be required,
- ensure that current laws, rules and instructions are followed.

Furthermore, it is the responsibility of both work management and those carrying it out to be aware of the risks which can occur during the work and the safety measures which may be required.

6.1.3 Elsäkerhetsledare (nominated person in control of a work activity)

Elsäkerhetsledare should be appointed for all types of electrical work.

Elsäkerhetsledare shall have documented ESA training, knowledge of the tasks that are fundamental to the role of Electricity Safety Manager, practical experience, knowledge of the facility and the authority and resources, required to manage electrical safety work at the workplace.

In addition to the above requirements, those without previous experience of acting as Elsäkerhetsledare shall have had an individually tailored number of occasions managing Elsäkerhetsledares tasks under the oversight of an experienced Elsäkerhetsledare . After this, dialogue takes place between the experienced Elsäkerhetsledare and the employer to establish if they are capable of acting independently as an Elsäkerhetsledare or if further occasions working under oversight are required.

In addition to the competences for the role of Elsäkerhetsledare , the Elsäkerhetsledare should also have the competences for the role of Switching supervisor as well as the knowledge to be able to check that the facility is left in a condition in accordance with regulations, see Section 5.2.3 Installation Management in this instruction.



The basis for a safe work environment is to carry out documented risk management, Risk-U, and Elsäkerhetsledare should, in addition to the responsibility assigned by ESA, also take responsibility for carrying out the points below (in no particular order):

- together with management and, if appropriate, the Eldriftledare (nominated person in control of an electrical installation during work activities)/ Switching supervisor carry out risk management to make the working method secure with help of the actual facility documentation, instructions and job descriptions,
- draft a written risk management of the workplace and therein identify the existing risks as well as how these should be eliminated,
- together with involved personnel, go through the drafted risk management (Risk-U) and ensure that the co-workers have taken part of and understood the content. After review, the names of the respective co-worker are noted within the risk management,
- where conditions have changed or if the work cannot be performed as planned:
 - o suspend work
 - o draft new written risk management, Risk-U, and if necessary, handle the identified risks
 - o based on the new risk management, ensure that everyone has understood the new conditions.
- take responsibility for ensuring that personal protective equipment is always used at the workplace,
- instruct personnel participating in the work about applicable safety requirements, safety regulations and internal instructions. The instruction should be repeated if the work is long-term,
- after the Certificate of commissioning is submitted ensure that no additions or adjustments are carried out until a new Permit-to-work has been received,

If anyone does not follow the applicable regulations or the safety measures taken, e.g. by not using personal protective equipment, the Elsäkerhetsledare should remove the person from the workplace and inform their line manager. A request means that the person must immediately leave the workplace.

6.1.3.1 Responsibility for appointing Elsäkerhetsledare

It is the employer who is responsible for appointing Elsäkerhetsledare. Training, competency and experience of the facility, work method and equipment should be taken into account. Elsäkerhetsledare in electrical works should be a Skilled Person, according to ESA, and, depending on the nature of the work, be a Qualified Electrician who meets the competency requirements according to VS-SP-00117 Self-audit scheme for electrical installation work. Individuals and employers have a shared responsibility to assess the individual's competence as Elsäkerhetsledare. However, the individual is always responsible for self-assessing their competency to be Elsäkerhetsledare for the actual tasks and, in the event of risks arising, stopping and making a new assessment. If a person does not consider themselves capable of being an Elsäkerhetsledare, it is important to share this immediately.

In accordance with the above, the Qualified Electrician has been deemed appropriate for the role of Elsäkerhetsledare for the work in all tasks within his/her business area.

In VSN, Elsäkerhetsledare are appointed based on the following principles:

1. Directly appointed through work management. (Operating order, job description, appropriation at a permanent place of work, scheduling within geographical contingency areas or the equivalent.)

2. For all types of work where the executor performs the work alone or together with those who are not professionally skilled, the executor is always the Els akerhetsledare for the actual work.
3. In the case of work beginning "by one's own initiative", the executor is always the Els akerhetsledare for the actual work.
4. In circumstances where the Els akerhetsledare is not clearly designated or needs to be changed in the workplace, and dialogue with the employer is not possible, employee numbers shall be used to rank who is to be assigned the responsibility. The lowest number takes on the responsibility of being Els akerhetsledare. Individuals without employee numbers (i.e. subcontractors) are ranked as subordinates to individuals with employee numbers.

Before work begins, Els akerhetsledare shall carry out a risk management (Risk-U) where, among other things, the assignment of Els akerhetsledare and those included in the work team are clarified. Within the framework for Risk-U, the appointed Els akerhetsledare considers if, for any reason, it is appropriate to replace the Els akerhetsledare on the premises.

In a situation where Els akerhetsledare must leave the workplace, the work shall halt until it is clarified who shall be Els akerhetsledare in the workplace going forward.

If circumstances require, Els akerhetsledare shall notify the employer about the need to appoint a different/additional Els akerhetsledare. When a Permit-to-work has been provided, it must be communicated to the Eldriftledare (nominated person in control of an electrical installation during work activities) and the Permit-to-work returned. A new/additional Els akerhetsledare must take out the necessary Permit-to-work before the work continues. All staff affected should be notified of changes such as those named above. A new risk management (Risk-U) shall be produced on the basis of different conditions, and the identity of the Els akerhetsledare should be clarified therein.

If a situation should arise where more than one Els akerhetsledare, for the same work, are simultaneously in the same workplace, e.g. helping with a fault, the following order will dictate who should take on the role of Els akerhetsledare. A new risk management (Risk-U) shall be produced on the basis of different conditions, and the identity of the Els akerhetsledare should be clarified therein.

1. Work that has been started in the workplace,
2. On the contingency list for the area, within which the work is being carried out (local knowledge),
3. According to the principle of the lowest employee number,

6.1.3.2 Els akerhetsledares presence at the workplace

Els akerhetsledare should, under the duration of the work, be on site or close to the workplace in order to be able to ensure that the electrical safety work is being carried out in accordance with planning performed, risk management and other applicable regulations.

In a situation where an Els akerhetsledare must leave the workplace, the work shall halt until it is clarified who shall be the Els akerhetsledare in the workplace going forward.

6.1.4 Electrical Coordinating Manager

When working in multiple workplaces, employers can appoint an Electrical Coordinating Manager to coordinate the electrical safety work and Els akerhetsledare, as found in every workplace.

When the work is large enough to need the appointment of an Electrical Coordinating Manager, it should be regulated in writing in the form of a local instruction issued by the employer together with the Elanl aggningsansvarig (person responsible for an electrical installation).

6.1.5 Worker

A worker is a person who, regardless of position, carries out the work under the supervision of Elsäkerhetsledare.

It is the individual employee's responsibility to inform the Elsäkerhetsledare and their line manager if the actual work is not covered by his specific training and level of competence.

The worker should, in addition to the responsibility assigned by ESA, also take responsibility for the points below (in no particular order);

- be equipped with and always use appropriate personal protective equipment as well as maintain equipment and tools so that they are intact, clean and without visible faults,
- maintain safety measures implemented,
- together with the Elsäkerhetsledare, go through the drafted risk management, Risk-U, and ensure that he/she has understood the meaning and that their name is noted within the risk management.
- carry out the work only to the degree asked of by the Elsäkerhetsledare,

6.1.6 Elanläggningsansvarig (person responsible for an electrical installation)

The person who has been given responsibility by the proprietor for ensuring the safe management of an electrical facility (operation and maintenance). Elanläggningsansvarig should be familiar with every kind of operation that can be present at the facility for which they are responsible.

6.1.6.1 Application in VSN

Application in cases where VSN has agreed to an Elanläggningsansvarig via agreement.

The assignments of the Elanläggningsansvarig should be regulated through agreements between the proprietor and VSN. The applicable conditions, duties and authority included within the contracted Electrical Facility Management – Electrical installations, shall be clearly stated within the agreement.

In addition, the agreement shall clearly indicate the responsibilities of the proprietor. For example:

- that faults and defects reported by the Elanläggningsansvarig are dealt with,
- not to carry out changes within the facility, e.g. reconnections, outages, repairs and/or extensions without informing the Elanläggningsansvarig.
- that the facility is completed in accordance with the applicable regulations,
- to provide instructions specific to the facility, e.g. concerning the facilities and the operations carried out in them.

Work planning and work within the facility shall always be carried out in accordance with the ESA

Delegation of Elanläggningsansvar should be documented.

Use template: *VS-MA-00032 Delegering Elanläggningsansvar.*

6.1.7 Eldriftledare (nominated person in control of an electrical installation during work activities)

Person who, based on instruction, plans and takes responsibility for switching within Elanläggningsansvarig stated area.

Delegation shall be documented.

Use template: *VS-MA-00035 Delegering Eldriftledare*

or

VS-MA-00159 Delegation Eldriftledare – Extern Elanläggningsansvarig

6.1.7.1 Handing over Switching responsibility

To ensure that there is a high level of safety and a rational method of working Eldriftledare can hand over switching responsibility, completely or part of the switching area. This is done in writing and should be clearly defined.

Switching responsibility can, e.g. be handed over to central management or to staff in the field.

6.1.8 Switching supervisor

Person who, when needed, receives switching responsibility in the form of a written submission from Eldriftledare.

Competence

Whoever is appointed Switching supervisor for a specific switching area should hold the competence and the knowledge of the facility which is required for working as switching supervisor at the actual facility. This includes an ability to be able to independently draw up a written directive for switching.

Planning

When planning for switching Risk Management should always be carried out.

Documentation requirements

A prerequisite for being Switching supervisor is a good knowledge of the actual switching areas as well as access to documentation, grid maps, operating schedules etc.

6.1.8.1 Disconnection before work

The work on the section of the facility which has to be disconnected must not begin before Risk Management is carried out, and the person who is responsible for the work:

- *Either* themselves in the role of Switching supervisor (obtained switching responsibility);
 - o has disconnected the facility section,
 - o carried out a voltage test,
 - o arranged earthing/short circuit (to the extent such a measure is prescribed and possible), and
 - o prevented the potential for unintentional reconnection.
- *Or* has obtained proof that these measures have been carried out by Eldriftledare for the facility.

6.1.9 Switching operator

Person who, by order of Eldriftledare or Switching supervisor, carries out switching.

The Switching operator shall, among other things;

- check and confirm the operational order for the specific sections,
- carry out Risk Management before operation.

6.2 Risk Management

Risk Management		
Risk analysis	Risk Assessment	Action

Risk Management is a collective term, which describes the flow for how VSN manages electrical safety in the workplace in the form of Risk Analysis, Risk Assessment and Action.

What is common to all Risk Management is that it is a systematic approach applied by:

- identifying sources of risk (Risk analysis),
- assessing risks to people, property or the environment (Risk Assessment) and
- creating an action plan to eliminate identified and assessed risks (Action).

Risk management is a continual process, which should be carried out both in the planning phase (Risk-P) and the implementation phase (Risk-U) and be continually ongoing until the work is completed.

The following template is available to assist in Risk-P:

VS-MA-00009 Riskhantering vid planering – Risk-P

Designing and preparation are also included in the concept *Planning*.

For all work carried out on or close to an electrical installation Risk Management should always be carried out and should form the basis of the choice of working method; Dead Working, Working in the vicinity of live parts, Live Working.

Risk management, Risk-U, should always be carried out in writing before each individual job and, in the event of changes to the conditions, new risk management will be required.

If the conditions change, it can mean that Risk Management is carried out several times in the same working day.

Tools (i.e. ENIA) should be used to assist in identifying existing risks, and assessing how detected risks should be handled/eliminated through safety-enhancing actions.

Involved parties should actively go through the drafted risk management so as to ensure everyone has taken part in and understood the significance. After review, the names of the respective employees are noted within the risk management.

Not following the established Risk Management and the safety measures taken can mean that you can be removed from the workplace. This can also mean disciplinary action.

6.3 Personal protective equipment – Requirement for the use of protective equipment

To achieve Vattenfall Services Nordic AB's zero industrial accident vision, it is necessary for everyone who is present in our workplaces to wear, in relation to the risk level, suitable protective equipment. See VS-IN-00031 Personal protective equipment.

Personal protective equipment should be used to give satisfactory protection from illness and accidents and should be provided by VSN.

The user is responsible for using the protective equipment in the correct manner, as well as for maintenance and storing it in such a way as to retain its function, protective properties and hygienic standard.

Everyone is responsible for reporting failures to use personal protective equipment in the workplace.

Not following the safety measures taken can mean that you can be removed from the workplace. This can also mean disciplinary action.

6.3.1 VSN personnel and subcontractors

The prescribed Risk Management, or other circumstances, can lead to a higher level of protection than below.

Approved helmet, protective shoes, and head-to-toe electric-arc tested clothing should always be used when carrying out any kind of electrical work at VSN.

Head-to-toe protective clothing shall be worn for all types of work assignments within enclosed high-voltage installations (operating rooms).

- Non-conformances in the form of shorts, even if these are regarded as flameproof, are not permitted.

Head-to-toe, arc-rated protective equipment shall be used for connection work on all electrically live installations and in cases involving a risk of an electric arc.

- The protective clothing to be used for all electrical work shall be complemented with visors, protective helmets or similar equipment as well as arc-rated gloves.

6.3.2 Visitors

Visitors to VSN workplaces should always wear helmets and high-visibility clothing (minimum of high-visibility vest). Other protective equipment should be adapted as needed and is determined by the Els akerhetsledare.

If this is not adhered to the visitor should be corrected and in certain cases removed.

Comment:

In this instruction *workplace* refers to; workplace where VSN has responsibility for Risk Management and under its own management or under customers' or owners' requests carries out the work.

6.4 Training and skills

ESA Training:

All staff who carry out electrical work should have taken ESA's basic training and passed. The basic training should be taught by an instructor. This training is to be repeated at least every three years with approved results.

Managers who have personnel according to the above should also attend this training.

The course content and implementation should be quality assured and approved by the VSN management team.

Personnel who have not passed the ESA training are not permitted to carry out electrical work.

VS-IN-00067 Electrical Safety Instructions – Vattenfall Services Nordic AB:

All personnel carrying out electrical work should have a good knowledge base of the contents of this instruction, preferably read in conjunction with the above ESA training. Once the instruction has been revised, each person must, on their own, check for updates.

6.5 Reporting Incidents and Accidents

Reporting and analysing accidents and incidents is an important facet of continuous learning for improving electrical safety, and all should, thus, be reported within VSN's system for deviation management.

In the case of serious incidents and accidents, a report should be also sent to the Swedish Work Environment Authority and the Swedish National Electric Safety Board. See VS-IN-00036 Measures for occupational accidents and serious incidents.

7 Checkpoint for internal follow-up

If this instruction is incorrect or is not complied with, the issue is dealt with according to Deviation management VS-IN-00017.

8 References

Documents	Description
VS-PO-00001	Operational policy for Vattenfall Services Nordic AB
VS-IN-00004	legislation and other requirements
VS-IN-00013	Risk management and planning in Quality, Work Environment, Environment
VS-IN-00009	Requirements for contractors and consultants
VS-IN-00017	Deviation management
VS-IN-00031	Personal protective equipment
VS-IN-00036	Measures for occupational accidents and serious incidents
VS-SP-00117	Self-inspection programme for Electrical Installation Works
ESA	Electrical safety instructions
SS-EN 50110-1	Management of electrical facilities
ELSÄK-FS 2006:1	Regulations and general advice on electrical safety when working in professional operations
ELSÄK-FS 2008:3	Regulations and general advice about the proprietor's inspection of electrical high-voltage facilities

9 Revision History

Issue Number	Changes
VS-IN-00067 Vers 2	Changed 1/1/2014 Replaces: VS-IN-00067 from 1/8/2013
VS-IN-00067 Vers 3	Changed 1/6/2014 Replaces: VS-IN-00067 from 1/1/2014
VS-IN-00067 Vers 4 Valid from 1/6/2015	Changed 26/1/2015 Replaces: VS-IN-00067 vers 3 from 1/6/2014
5 Adjusted 27/10/2016	Under point 4 Definitions: Supplemented with Connection work. Under point 6.2 Risk Analysis: Supplemented with app. Under section 6.3:1 VSN Personnel: Supplemented on the basis of requirements for personal protective equipment for work in operating rooms and head-to-toe clothing for connection work and where there is a risk of an electric arc. Under section 6.3.2 Visitors: Supplemented with a minimum of high-visibility vest. Under section 6.3.3 Subcontractors: Supplemented with head-to-toe safety equipment
6 Adjusted 1/12/2017	Adjustment due to new Electrical Safety Act. Text regarding Electrical Installation Work removed and reference to VS-SP-00117 Self-inspection programme for electrical installation works inserted. Under point 5.2.1 Responsibility for the plant: Text adapted to suit the activity better. Revised under section 6.1 with subsections regarding parts found in ESA. Reduced text quantities so it is mainly clarifications/applications of ESA that are emphasised. Under section 6.1.3.1 Responsibility for appointing Els�akerhetsledare: Text adapted to suit the activity better. Appendices removed and references to templates adjusted/supplemented. Refers directly to the templates instead. Under section 6.4 Training and Competence. The approval requirement is no longer defined. Follows instead the industry's requirements for respective training.
7 Adjusted on 1/10/2019	A number of editorial changes made. General adjustments to the updated ESA. Additionally, some repetitive text from the ESA has been removed. Section 5.1 Supplemented with a paragraph regarding the measures associated with instances where a purchaser does not work in accordance with the ESA Section 6 Supplemented with a paragraph regarding focus on the task Sections 6.1.3, 6.1.3.1 and 6.1.3.2 regarding the position of Els�akerhetsledare has undergone extensive changes in efforts to further clarify the requirements of this role. Sections 6.1.6 and 6.1.6.1 The Elanl�aggningsansvarig and application in VSN is adjusted and supplemented by clearer suggestions as to what should be included within agreements that include this service. Section 6.3 regarding personal protective equipment has been amended to cover only what applies in electrical work. For example, in-house staff and subcontractors are treated equally in section 6.3.1 Section 6.5 Reporting Incidents and Accidents. Definition of incidents etc. removed. Refer to instruction VS-IN-00036.