Safety Regulations

Building Site

TenneT
Taking power further

Information

Company name

Name of bearer

Date of birth of bearer

Telephone number of Construction Manager

Telephone number of Duty Supervisor

Telephone number of In-Company Emergency Services Officer

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Introduction

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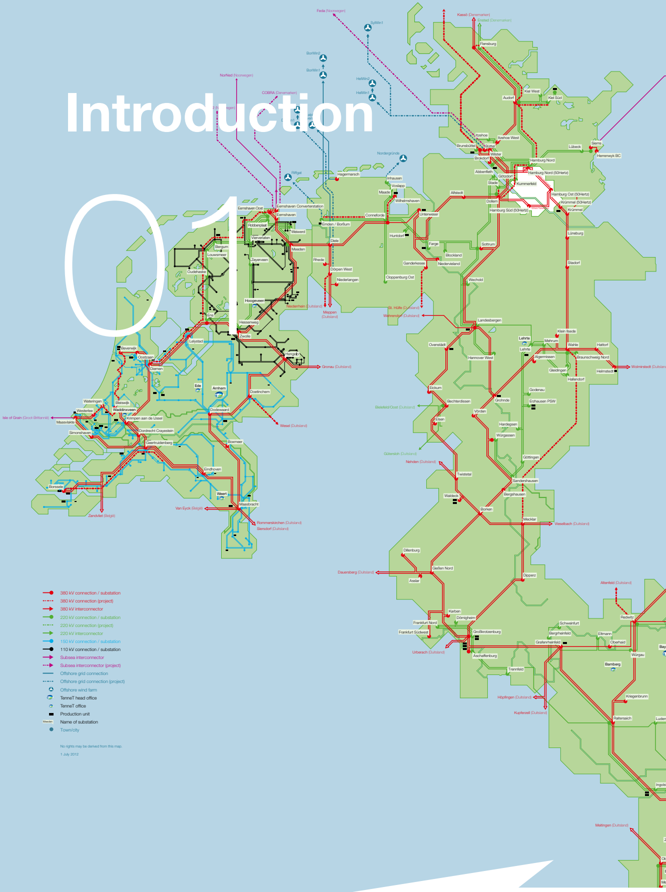


TenneT is the first cross-border Transmission System Operator in Europe. Integrating the two high-voltage grids of the German grid operator transpower and the Dutch TSO TenneT will allow the combined company to play a leading role in the European energy market. We will continue developing an efficient European electricity market whilst safeguarding the security of supply and facilitating the integration of sustainable energy.

Our grids connect all regional electricity grids to each other and to the European grid. Besides managing the grid, we also monitor the reliability and continuity of the electricity supply. We accomplish this in a number of ways, including making the transmission grid available in an impartial manner for electricity transmission, and safeguarding the required balance between supply and demand in the Netherlands.

Why do you need this booklet?

TenneT attaches great importance to the safety and environmental protection of its (future) substations, and as such aims to achieve the following:

- No accidents or other incidents
- A safe, healthy and clean working environment
- No unnecessary damage to the environment
- Reliable delivery of our product

Working on a building site always carries increased risks. The construction industry is characterised by a frequently changing workforce, a number of different contractors and varying activities at different locations.

The main dangers on TenneT's building sites include:

- Layout of the building site
- Risk of falling
- Work equipment
- Physical strain
- Hazardous materials
- Noise and vibrations
- Electricity
- Incorrect use or lack of personal protective equipment

In addition, work may have to be carried out near high-voltage lines (110 kV, 150 kV, 220 kV and 380 kV). This is why specific rules apply for entry to the building site and the performance of work. These rules have been drawn up in the interest of the safety of all concerned, and to safeguard the quality of our living and working environment.

The purpose of this booklet is to inform you about the rules for safety and environmental protection when working on or near TenneT sites. Please note that these rules of conduct supplement the relevant statutory obligations. Although the latter have not been included in this booklet, they must be observed nonetheless.

Carry this booklet with you at all times and please fill in the important information at the front.

If you have any questions after reading this booklet, please contact the Construction Manager, the person responsible for the work, or the SHE team of TenneT's Grid Service business unit on +31 26 373 1111.

Ir. J.M. Kroon
President and Chief Executive Officer

At TenneT we take the time for safety

General Safety Regulations

02

TenneT safety regulations

TenneT devotes a great deal of attention to creating a safe working environment and expects the same of third parties engaged to perform work for TenneT. Companies must be certified in accordance with VCA/SCC (Safety, Health & Environment Checklist for Contractors) or an equivalent safety management system. The foreman must speak Dutch, English or German. The foreman or supervisor of activities carried out near high-voltage installations must have a thorough command of spoken and written Dutch, as well as a clear understanding of the language spoken by the workforce.

2.1 Entry

- You must sign in and out when entering and leaving the location.
- Visitors must report to the Duty Supervisor or Construction Manager.
- Visitors must carry valid proof of identity with them (see Chapter 13 – Definitions and Abbreviations).
- When using cranes, cherry pickers and mobile work equipment, you must have the legally required documents present.

- Cranes, cherry pickers and mobile work equipment may not be used without permission from the Construction Manager.
- Working hours on the building site are from 7.00am until 4.00pm. Any deviations from these working hours must be authorised by the Construction Manager.

2.2 Employees

- Employees must carry valid proof of identity with them. A copy will be made in accordance with the provisions of the Supply Chain Liability Act (see Chapter 13 – Definitions and Abbreviations).
- Employees must demonstrate possession of a valid VCA/SCC Basic certificate or a VCA/SCC certificate for operational supervisors.
- Employees must be 18 years of age or older.
- Employees under 18 years of age may only have access to the site when written permission is provided by the Construction Manager, and may only work under supervision.
- Employees under 18 years of age may not perform any (potentially) hazardous work.

2.3 Foreign employees

- Foreign employees from the European Economic Area (EEA) must possess an A1/E101 Certificate.
- Foreign employees from Romania, Bulgaria and countries outside the European Union must possess an employment permit.

2.4 Use of medication and medical devices

- Employees using medication which may affect their work must consult the Construction Manager before any work may be carried out.
- Employees wearing a pacemaker must report to the Construction Manager before any work is carried out.
- Pacemakers may be affected by electromagnetic fields. Consult a doctor if necessary.

2.5 Traffic

- The Road Traffic Act applies to the whole building site and stipulates a maximum speed of 15 kilometres per hour on site.
- Building site traffic must make use of the designated roads and available entrances.
- Access roads to pylons and cable routes are indicated on route maps.

- Riding on or in vehicles without facilities designed to accommodate passengers is not permitted.
- Parking is exclusively permitted in spaces explicitly designated for that purpose.

2.6 Rules of conduct

- TenneT is not responsible for safeguarding the property of third parties.
- Carrying, consuming or being under the influence of alcohol and/or drugs is prohibited.
- Offensive images are not permitted.
- The use of photo, film or video equipment is only permitted following written authorisation from the Construction Manager.
- Radios may not cause a nuisance.
- Urinating at locations other than the toilet facilities is not permitted.
- Smoking in buildings is not permitted.
- The instructions of the Construction Manager and, when the occasion arises, of the person responsible for the installation and the person responsible for the activities must be followed at all times, in addition to the applicable safety and environmental regulations.
- All signs and notices (both prohibitions and commands) must be complied with.

- Safety provisions and warning notices may not be removed without the permission of the Construction Manager.
- Keep the workplace clean and tidy.
- Prevent hazardous materials from being released into the environment.
- Waste and residual materials must be separated and deposited in the designated containers.
- At the end of the day the workplace must be left in a clean, tidy and safe condition.
- Materials and equipment must be stored in such a way that they present no hindrance or obstacle to any activities being carried out.
- Materials, equipment and similar items may never be thrown down from a height.
- **Anybody who fails to comply with the regulations and/or guidelines may be denied access to the site.**

Prohibition signs

This is not drinking water

No smoking

No naked flames

Electrical connections prohibited

Do not extinguish with water

No mobile telephones

Specific Safety Regulations

03

Warning notices

Explosive materials

Explosive environment

Inflammable materials

Corrosive materials

Harmful or irritating substances

Poisonous substances

3.1 Working at heights

Working at heights is defined as carrying out work at or above the height of 2.5 metres. The risk of falling from heights is one of the most serious risks on a building site. It is the cause of dozens of deaths every year. Working at heights is preferably carried out on scaffolding or using a cherry picker. Use of ladders is only permitted as a means of relocating or for short-term work. When working at heights, use must be made of adequate and appropriate safety measures to prevent the danger of falling. In the cherry picker, employees must make use of a tethered full body harness. In addition, employees have (demonstrably) been trained and/or instructed in using the equipment.

3.2 Hoisting

All equipment (cranes, hoisting equipment, hoisting appliances etc.) that is intended for the vertical relocation of working loads must have (demonstrably) been examined within the past year. Furthermore, an instruction book and a crane logbook with a table detailing hoisting operations must be present in the crane or the hoisting equipment. For cranes and hoisting equipment with a working load moment of more than 10 ton metres, the crane operator must demonstrably possess a certificate of professional competence which is no more than five years old.

The following operations are also prohibited:

- Hoisting over people's heads
- Transporting people on or suspended from working loads
- Hoisting during wind speeds of more than 6 on the Beaufort wind force scale

3.3 Personnel platforms

Transporting people on a personnel platform (also known as a crane basket) by means of a crane is only permitted under the following conditions:

- If a permanently installed crane is used (with a manned personnel platform attached to it), the crane may not be driven
- Transportation must occur for brief activities, i.e. not longer than approx. 4 hours and no more than a few times per year
- The use of more appropriate machinery must involve disproportionately high costs
- The use of more appropriate machinery must involve higher risks
- The personnel platform must satisfy the applicable legal requirements
- The personnel platform must be inspected at least once a year
- The personnel platform must display an inspection sticker

- Persons on the personnel platform must receive instructions beforehand with regard to dangers and safety measures
- Persons on the personnel platform must be tethered to it by means of a full body harness
- Instructions to the crane operator must be given by one person on the personnel platform
- Portable telephones must be used
- Mounting and dismounting the personnel platform must only occur when the platform is on fixed ground

3.4 Mobile work equipment

Cranes, cherry pickers and mobile equipment must come equipped with the prescribed instruction books, certificates, inspection reports and/or crane logbooks. The operator must be able to demonstrate his competence by means of written documentation (certificate or equivalent).

3.5 Scaffolding

All scaffolding must be earthed. Scaffolding must be assessed by an expert and be provided with a so-called Scafftag/scaffolding card indicating the most recent inspection date.
Calculation results must be present on-site if special scaffolding is used. Scaffolding must be re-examined

monthly and/or if necessary due to weather conditions. Any changes to scaffolding may only be completed by a scaffolder under the authority of the party that ordered the erection of the scaffolding. If scaffolding is wrapping in cling film at an operational substation, a net must be installed to prevent the cling film from being blown away by strong winds.

3.6 Trestle scaffolding

Trestle scaffolding may not consist of more than one level and must be erected on a firm foundation. The load may not exceed 300 kg/m2, depending on the support. The width of a trestle scaffold erected on a work floor must be such that enough space is left on the work floor for the transport of materials or the passage of persons. The trestles must be fixed securely in order to prevent movement.

3.7 Lifting heavy working loads

The lifting of heavy working loads must be prevented as much as possible. Loads heavier than 23 kg must be lifted by more than one person, or preferably by mechanical means.

3.8 Gas cylinders and pressurized containers

Gas cylinders and pressurized containers must be stored in a place designated by the Construction Manager. Gas cylinders and pressurized containers:

- Must be stored in an upright position
- Must be securely fastened
- Must be provided with readable content labels and hazard symbols
- Must be protected against heat and weather influences
- Must receive adequate ventilation in the storage space
- Must be stored separately if the cylinders contain oxygen, combustible gases or are empty

3.9 Enclosure of hazardous areas (non-electrical)

Hazardous areas such as pits or incomplete floors must be enclosed by sturdy fencing (for example roadblock barriers). This enclosure may not be removed by unauthorized persons and the fenced-off zone may not be entered by unauthorized persons. Areas where the risk is non-electrical in nature and presents no danger of falling must be enclosed by yellow/black safety chains. The use of adhesive hazard tape is prohibited.

Personal Protection

04

4.1 Clothing

It is obligatory to wear a good quality safety helmet (in accordance with EN 397), electricity-insulating safety footwear (type S3) and clean and durable work clothes (at the minimum consisting of a pair of trousers and a T-shirt with short sleeves). Only the helmet's original balaclava may be worn, attached to the helmet.

4.2 Jewellery

If the working conditions require it, the wearing of rings, watches, bracelets, necklaces, loose ties or untied long hair may be prohibited by the Construction Manager.

4.3 Personal protection

Additional personal protective equipment must be used in areas where such use is indicated by a mandatory sign or when the nature of the work requires it.

This includes the following activities:

- Boring/drilling, sawing, milling and other machining work
- Cutting, using a burner, welding
- Working with hazardous materials
- Activities with increased sound levels

All personal protective equipment must be used and maintained correctly.

Helmet

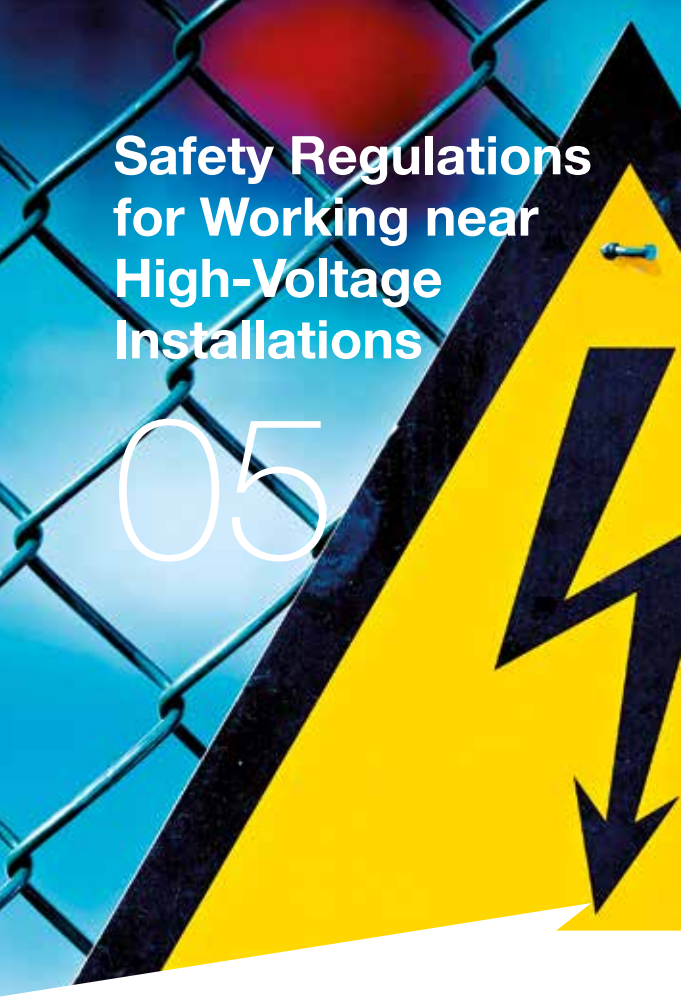
Safety shoes

Safety goggles

Hearing protection

Respiratory equipment

Harness to protect against falling



Safety Regulations for Working near High-Voltage Installations

05

When working near high-voltage installations, the following additional safety regulations apply.

5.1 Work application form / work permit

When working on or near high-voltage installations, lines or cables, a work application form or work permit must be completed. A work application form / work permit is drawn up by the person responsible for the activities on behalf of TenneT. The work area may only be released for work if all these measures have been taken, the correct provisions are in place, and the person responsible for the activities has given permission for the work to commence.

5.2 Enclosure of hazardous areas (electrical)

When working on or near high-voltage installations, the person responsible for the activities on behalf of TenneT must create a safe work area. This area must be marked with red/white safety chains and must have an entrance and exit. The area outside the chain is classified as a hazardous (work) area. The designated routes must be used to enter and leave

the enclosed area. Persons who fail to respect the enclosure will be immediately removed from the site. The protective markings may only be removed by, or on the authority of, the person responsible for the activities on behalf of TenneT (in accordance with the NEN 3840 and NEN 3140 standards).

5.3 Heavy equipment

When working on or near high-voltage installations, all scaffolding, cranes, work equipment, permanently fixed vehicles and metal components must have a direct connection to earth. Such a connection must be installed in accordance with the instructions of the person responsible for the activities and/or the Duty Supervisor. The earth connection must be connected first to earth and then to the equipment or vehicle, and must be removed in the reverse order. All vehicles such as lorries, shovel vehicles etc. and mobile equipment must be provided with towing chains. Cranes, cherry pickers and other mobile equipment must be fitted with provisions to limit their reach, height and/or direction of rotation in accordance with the instructions of the person responsible for the activities and/or the Duty Supervisor.

The Duty Supervisor must be duly appointed by TenneT (in accordance with the NEN 3840 and NEN 3140 standards).

The rules and regulations in the booklet entitled 'Safety Regulations for Working near High-Voltage Lines Managed by TenneT TSO B.V' apply to all construction work carried out on or near high-voltage lines. This booklet can be obtained from TenneT's Communications department (e-mail **communicatie@tennet.eu**), or from the Construction Manager. It can also be downloaded from **www.tennet.eu** (section headed 'Publications').

5.4 Qualification requirements

Qualification requirements are applicable to all above-ground activities (including conductor assembly) carried out on or near high-voltage pylons and/or high-voltage portals. The aim of the qualification requirements is to formulate uniform basic requirements with regard to theoretical knowledge and practical skills which persons must demonstrably fulfil before they may carry out work on or near high-voltage lines. These basic requirements are the same for all work carried out by the various high-voltage grid operators in the Netherlands.

Documentation Required for High-Risk Activities

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6.1 Work application form

A work application form or work permit must be completed when working on or near high-voltage installations, lines or cables. A work application form / work permit is drawn up by the person responsible for the activities on behalf of TenneT. The work area may only be released for work if all these measures have been taken, the correct provisions are in place and the person responsible for the activities has given permission for the work to commence. Employees must ensure that all the necessary safety measures have been taken.

6.2 Work permit

The person with primary responsibility on behalf of the contractor requests the work permit from the Construction Manager. Work may only commence after permission in writing has been obtained. The instructions on the work permit must be followed at all times.

A written work permit is required for the following activities:

- Activities in enclosed spaces
- Activities with increased risk of fire and/or explosion
- Activities in existing installations

- Activities with increased risks (Job Risk Analysis required)
- Ground work (excavation, pile-driving, sounding, etc.) at existing substations or at a depth greater than 2 metres
- Hoisting activities with a working load moment of more than 10 ton metres
- The Construction Manager may also decide to prescribe a work permit for other activities if necessary in his judgement

6.3 Job Risk Analysis

In addition to a standard Health & Safety Plan for the work to be carried out, the contractor must also complete a Job Risk Analysis (also known as a Task Risk Analysis (TRA) or Job Safety Analysis (JSA) for any new, high-risk activities. The Construction Manager may also prescribe a Job Risk Analysis in the case of certain specific activities.

6.4 Last Minute Risk Analysis (LMRA)

An LMRA is a simple way of carrying out a final check of all Safety, Health & Environment aspects before the commencement of activities (see the checklist starting on page 51). The aim of an LMRA is to identify any hazards in the workplace and to eliminate any risks and hazardous circumstances which may lead to an incident. LMRAs are carried out by the employee.

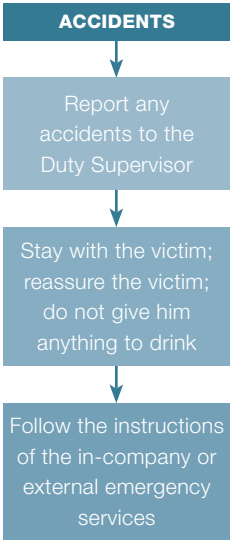
In addition to the above-mentioned measures, the best way for an employee to prevent any accidents is by being vigilant and protecting his own health and safety in the workplace. A checklist is included starting on page 51 of this booklet.

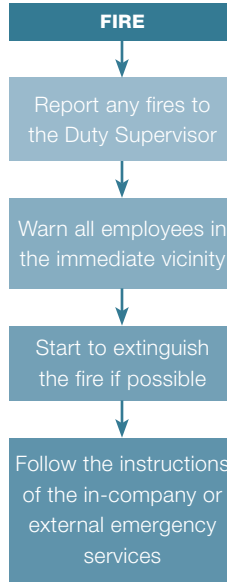
Work may not commence if the dangers posed by the activity have not been eliminated and if any (remaining) risks have not been brought under control. It is better to think things through beforehand than regret it later and be confronted by the consequences.

Calamities

07

All calamities must be reported immediately to the Duty Supervisor, who will then ensure that the in-company and/or external emergency services are called in.





On page 2 of this booklet, space is provided to note down the telephone number of the Duty Supervisor and In-Company Emergency Services Officer.

7.1 First-aid resources

There is a first-aid post with a type A first-aid kit in the office of the TenneT Building Site Manager. An emergency response card stating the most important addresses and telephone numbers has been put up in the office of the TenneT Building Site Manager and in each contractor's office. In addition, each contractor must ensure that a complete first-aid kit is present at every work site.

7.2 Evacuation

7.2.1 Evacuation in case of thunderstorms

Employees will be warned verbally.
This warning will be amplified by using a megaphone. Employees are to leave their workplace and make their way as quickly as possible to the site office.

7.2.2 Evacuation in case of emergency

Employees will be warned by means of an evacuation signal. All employees are to leave their workplace and make their way to the assembly point. Employees may only leave the assembly point with the permission of the Duty Supervisor.

7.23 Assembly point

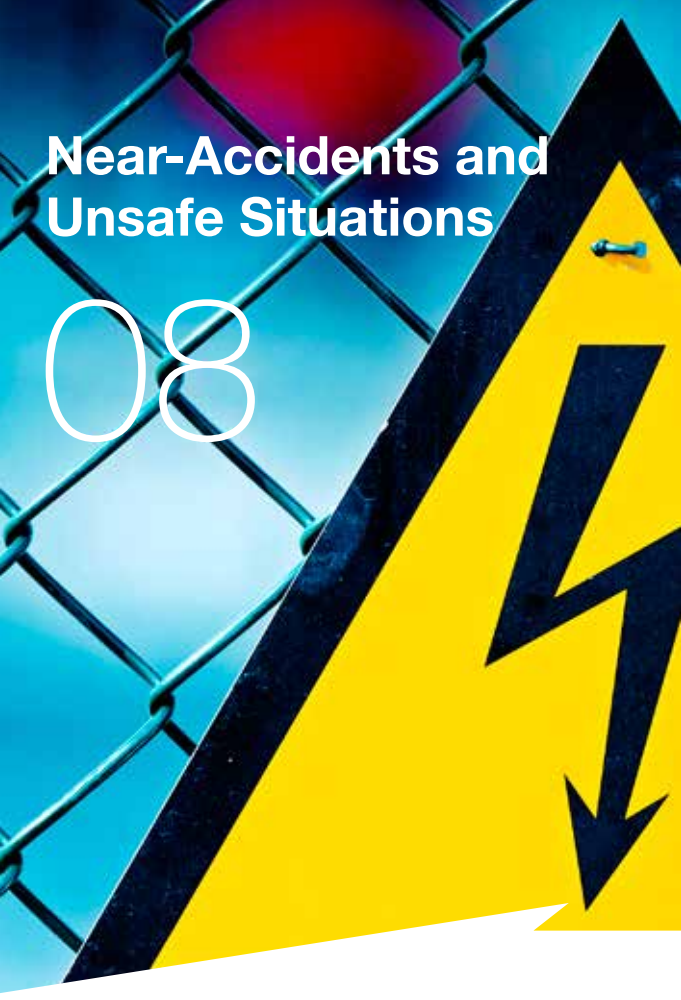
The assembly point is indicated on boards around the building site. Make sure you know where you can find the assembly point.

7.3 Reporting and registration

The Construction Manager must report all (near-) accidents and incidents in writing within 24 hours, using the TenneT accident report form. In addition, the contractor must report any actions taken towards preventing any similar accidents/incidents in the future.

Near-Accidents and Unsafe Situations

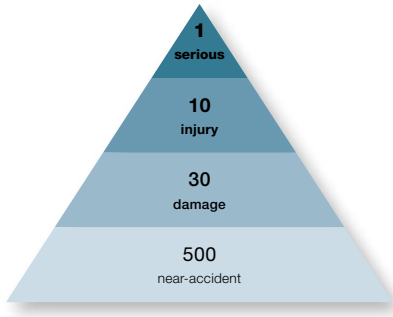
08



A near-accident is characterised by the simple fact that serious damage or injury was only just avoided.

To prevent accidents, all employees are morally responsible for reporting any near-accident or unsafe situation. In other words, if you do not report a near-accident or unsafe situation, you are being unsafe yourself. You are then taking a conscious risk that something may happen to you or someone else which could have been prevented if you had reported the near-accident or unsafe situation.

Therefore, do not ignore or shrug off any near-accident or unsafe situation. Instead, report it by using the forms after page 59 in chapter 12.



Building Site Facilities

09

9.1 Work breaks, sanitation and storage

All employees on the building site must use the facilities available (to be installed by the contractor), such as workmen's huts, storage facilities and sanitary facilities. Materials may only be stored at locations designated by the Construction Manager.

9.2 Gas, water and electricity

- The main power distribution box and the gas and water mains must be clearly marked and easily accessible so they can be switched off in the event of a calamity.
- Feeder cables must be buried to a sufficient depth or suspended high enough to rule out any damage by traffic.
- Feeder cables and feeder cable plugs must be undamaged and earthed, and meet all relevant quality requirements.
- Measures must be taken to prevent cables being damaged and thus causing short circuits.
- Items such as construction lights must be undamaged and be provided with working lamps.
- Installations must be earthed, splash-proof and/or waterproof.
- Extension cords, distribution boxes and temporary electrical wiring must be disconnected outside working hours.

- Power cables, gas pipes and oil pipes must never intersect paths or roads without due protection.
- All gas, water and electricity provisions must fulfil the requirements as stipulated by the standards NEN 1010, NEN 3140 and NEN 3840.
- All materials and equipment to be used must fulfil the applicable legal requirements.
- Electrical hand tools, reels and extension cables must be doubly insulated and examined annually in accordance with the NEN 3140 standard.

Hoisting

10

The crane operator will only follow the directions and signals provided by the guide!

10.1 Hoisting: arm and hand signals

Start

Be careful!

Beginning of command

Both arms are stretched out horizontally to the left and right, with the palms visibly facing forward.

Stop

Halt

End of movement

The right arm is raised, with the palm of the right hand visibly facing forward.

End

End of the activity

Both hands are clasped together at chest height.

Danger

Emergency stop

Both arms are raised above the head, with the palms visibly facing forward.

Hoist

With the right arm raised above the head and the palm of the right hand facing forward, a slow circular motion is made.

Lower

With the right arm directed downwards and the palm of the right hand facing inward, a slow circular motion is made with the right hand.

Horizontal distance

The distance is indicated by the hands.

Vertical distance

The distance is indicated by the hands.

Forwards

With both arms bent and both palms facing inward, slow movements are made with the forearms moving towards the body

Backwards

With both arms bent and both palms facing outward, slow movements are made with the forearms moving away from the body

Go right

In relation to the signaller

With the right arm held approximately horizontally and the palm of the right hand facing downward, slow, direction-indicating movements are made

Go left

In relation to the signaller

With the left arm held approximately horizontally and the palm of the left hand facing downward, slow, direction-indicating movements are made

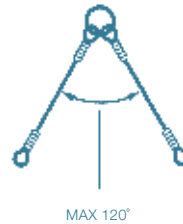
Do not walk underneath a crane load under any circumstances!

10.2 Hoisting: attaching working loads

Single hook

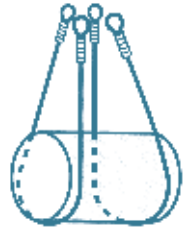
Single leg sling

Single choker hitch



2-leg bridle sling with an angle of spread of max. 120°

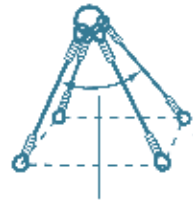
Single basket hitch



Double basket hitch

MAX 60°

3-leg bridle sling with an angle of spread of max. 60°



MAX 120°

4-leg bridle sling

One endless sling in double basket configuration

Endless single-choker sling

Checklists

11

11.1 LMRA Checklist

Last Minute Risk Analysis (LMRA)

Ask yourself the following questions before you start:

- ☐ Do I know which work I have to do, and how to go about doing it?
- ☐ Have I followed all procedures correctly?
- ☐ Can I carry out my work without the risk of installation failures?
- ☐ Do I have the correct equipment and has it been examined? Do I have the correct personal protective equipment and has it been examined?
- ☐ Is the working environment safe?
- ☐ Are all emergency exits clear of obstacles?
- ☐ Do I know who the In-Company Emergency Services Officer is and where the assembly point is located?
- ☐ Do I know where the fire-fighting equipment, first-aid equipment and eye-wash fountain are located?

Everything is 100% clear to me.
I will therefore work reliably and safely!

Before you commence work:

Assess the risk!
Do not continue working if you believe a situation presents an unacceptable risk to yourself, to others, or to the operational reliability of the company.

Determine appropriate measures
Determine which measures are necessary in order to prevent risks to personal safety and operational reliability.

Implement the measures effectively!
Take the appropriate measures. By doing so, the work can take place without any problems or risk to yourself or others.

If in doubt, do not hesitate to consult a supervisor.

Hand tools

- ☐ Do I have the right tools?
- ☐ Are the tools in good working order?
- ☐ Have the appropriate measures been taken to prevent the tools from being dropped?

Electrical tools/equipment

- ☐ Is the tool/equipment housing in order?
- ☐ Is the electrical lead undamaged and in good working order?
- ☐ Is the plug in good working order and is it properly secured when plugged in?
- ☐ Is there a danger of tripping over the electrical lead?
- ☐ Has the tool/equipment been inspected less than one year ago?

Ladders

- ☐ Is the ladder clean?
- ☐ Is the ladder undamaged and in good working order?
- ☐ Is the ladder secure against being jolted/pushed?
- ☐ Is the ladder standing at an angle of 70 degrees?
- ☐ Has the ladder been inspected less than one year ago?
- ☐ Is the work you are carrying out short-term?

Enclosed spaces

- ☐ Do you have a work permit which has been completed in full?
- ☐ Have all conditions on the permit (e.g. measurements) been met?

- ☐ Will continuous measurements be performed during the work?
- ☐ Is there somebody guarding the manhole?
- ☐ Does the person guarding the manhole possess a means of communication?
- ☐ Are you able to communicate with the person guarding the manhole?
- ☐ Is there sufficient lighting inside the space?
- ☐ Is the manhole clear of obstacles, cables and pipes?
- ☐ Is there sufficient ventilation in the space?
- ☐ Are you wearing a safety harness for use in enclosed spaces?

Cherry pickers

- ☐ Does the cherry picker have a CE marking?
- ☐ Are the manufacturer's trademark, identification number, year of construction, maximum permissible workload, and maximum number of persons clearly indicated?
- ☐ Does the cherry picker have an inspection sticker?
- ☐ Has the cherry picker been inspected less than one year ago?
- ☐ Is the operating manual present and in the correct language?
- ☐ Are the controls clearly indicated?

- ☐ Are there provisions to carry out an emergency stop?
- ☐ Have you been (demonstrably) trained and/or instructed in using the controls?
- ☐ Are you over 18 years of age?
- ☐ Are there persons working in the vicinity who could operate the cherry picker in case of emergency?
- ☐ Has the cherry picker been provided with a towing chain?
- ☐ Are you wearing a safety harness and are you tethered to the vehicle?

Harness

- ☐ Is the inspection date on the safety harness still valid?
- ☐ Does the safety harness have a fall damper?
- ☐ Are the safety harness and the tethering line in good working order?
- ☐ Are you able to hook the harness up properly?

Scaffolding

- ☐ Is there a scaffolding card/Scafftag on the scaffolding?
- ☐ Was the last inspection carried out less than one month ago?
- ☐ Has a guard board been installed?

- ☐ Are there railings at a height of 0.5 metres and 1 metre?
- ☐ Is the scaffold flooring completely closed?
- ☐ Is the ladder installed in a fixed position?
- ☐ Are there other entrances and emergency exits on large scaffolding structures?
- ☐ Have protruding parts been marked?
- ☐ Is the scaffolding appropriate for the activity?
- ☐ Does the scaffolding have a direct connection to earth?

Hoisting and hoisting appliances

- ☐ Are all hoisting appliances in good working order?
- ☐ Have all hoisting appliances been inspected less than one year ago?
- ☐ Are all the hoisting appliances registered and are the certificates present on the building site?
- ☐ Are the hoisting appliances being used correctly?
- ☐ Can you communicate with the machine operator?
- ☐ Do you know the correct arm and hand signals?
- ☐ Has the hoisting area been fenced off?

Cranes

- ☐ Is the crane instruction manual present?
- ☐ Is the crane logbook with table detailing the hoisting operations present?

- ☐ Has the crane been inspected less than one year ago (as noted in the crane logbook)?
- ☐ Does the crane operator possess a certificate of professional competence which is no more than 5 years old (if the working load moment exceeds 10 ton metres)?
- ☐ Has the crane been installed on a site ensuring that no working loads will be hoisted over persons on the ground?
- ☐ Does the crane have a direct connection to earth?
- ☐ Is the crane situated on a sufficiently stable foundation?

Hoisting equipment

- ☐ Is the equipment instruction manual present?
- ☐ Is the crane logbook with table detailing the hoisting operations present?
- ☐ Has the hoisting equipment been inspected less than one year ago (as noted in the crane logbook)?
- ☐ Does the crane operator possess a certificate of professional competence which is no more than 5 years old (if the working load moment exceeds 10 ton metres)?
- ☐ Has the hoisting equipment been installed on a site ensuring that no working loads will be hoisted over persons on the ground?

- ☐ Does the hoisting equipment have a direct connection to earth and has it been provided with a towing chain?
- ☐ Is the hoisting equipment situated on a sufficiently stable foundation?

Pile driver installation

- ☐ Is the pile driving instruction book present?
- ☐ Is the crane logbook with table detailing the hoisting operations present?
- ☐ Has the pile driver installation been inspected less than one year ago (as noted in the crane logbook)?
- ☐ Does the machine operator possess a certificate of professional competence which is no more than 5 years old (if the working load moment exceeds 10 ton metres)?
- ☐ Has the pile driver been installed on a site ensuring that no working loads will be hoisted over persons on the ground?
- ☐ Does the pile driver installation have a direct connection to earth?
- ☐ Is the pile driver installation situated on a sufficiently stable foundation?

Earth-moving machines

- ☐ Has the earth-moving machine been inspected less than one year ago?
- ☐ Does the machine operator possess the required specific expertise to operate the machine?
- ☐ Does the machine operator possess a driving licence category B, in case public roads need to be used?
- ☐ Has the earth-moving machine been provided with a towing chain?

Forms

12

All employees are obligated to report near-accidents and unsafe situations. Complete the form below and give it to your supervisor, Construction Manager or Duty Supervisor.

Near-accidents/unsafe situations

Dangerous situation/activity

Recommendation

Name

Date of birth

Company	Initials

Near-accidents/unsafe situations

Dangerous situation/activity

Recommendation

Name

Date of birth

Company	Initials

Near-accidents/unsafe situations

Dangerous situation/activity

Recommendation

Name

Date of birth

Company	Initials

Near-accidents/unsafe situations

Dangerous situation/activity

Recommendation

Name

Date of birth

Company	Initials

Near-accidents/unsafe situations

Dangerous situation/activity

Definitions and Abbreviations

13

13.1 Definitions

Accident
An unintended occurrence on a TenneT site, during or outside working hours, caused by an unsafe activity or unsafe situation, possibly resulting in physical injury, material damage and/or sick leave.

Construction Manager
The Construction Manager has the final responsibility for safety on the building site. The term Construction Manager may also apply to a deputy when appropriate.

Crane
Piece of mechanically driven hoisting equipment that is designed to move hanging loads.

Enclosed space
A space which is not easily accessible and cannot be left quickly. In general, the ventilation in these spaces is insufficient to guarantee a safe working environment.

European Economic Area
All countries in the European Union, as well as Norway, Iceland and Liechtenstein.

Hanging load
A load which is connected to hoisting equipment by flexible means (cords, cables, etc.).

Hoisting appliance
Equipment which is used to attach working loads.

Hoisting equipment
Equipment which is not primarily designed to operate as a crane but which may, with some adjustment, be used to carry out hoisting operations.

Inspection
(Periodical) assessment (visual inspection, measurement and/or test) of (work) equipment to determine whether the (work) equipment still meets the applicable requirements.

Job Risk Analysis
Structural approach to recognising and managing the risks (specifically with regard to safety, health and the environment) associated with carrying out (specific) high-risk tasks/activities which have not thus far been described in the Risk Inventory & Evaluation, with the aim of identifying and subsequently eliminating or reducing these risks.

Kilovolt
One kilovolt is equal to 1,000 volts.

Last Minute Risk Analysis (LMRA)
A simple method of conducting a final check before an activity is carried out.

Main contractor
A company that carries out work on behalf of TenneT.

Person responsible for the activities
The person who draws up the work application form and who is directly responsible for overall supervision with respect to safety measures and the activities described in the work application form. When multiple activities are carried out, this person remains responsible for his part of the requested planned unavailability.

Person responsible for the installation
An expert TenneT employee designated as the person directly responsible for the supervision and operational management of one or more (high-voltage) installations, substations, lines or cables.

Personal protective equipment
(Safety) equipment which is worn or carried by an employee as protection against possible risks which threaten his health or safety while work is being carried out.

Proof of identity for employees
Valid proof of identity for employees is understood to mean the following:

- Valid Dutch passport or Dutch identity card (NIK)
- Valid passport or valid European identity card from one of the EEA countries
- Valid passport from a country outside the EEA which is provided with a valid residence endorsement sticker
- Valid residence permit for foreign nationals, namely:
  - Type I (Ordinary Temporary Residence Permit)
  - Type II (Ordinary Permanent Residence Permit)
  - Type III (Asylum Temporary Residence Permit)
  - Type IV (Asylum Permanent Residence Permit)
- EU/EEA Community Citizen's Residence Card (residence document for foreign nationals from the EEA and their family members)
- W-document (document for asylum seekers)

A driving licence is not a valid document for establishing a person's identity at the start of the employment relationship, as a driving licence does not specify the holder's nationality or residence status. A national identification number ('sofinummer') is likewise not a valid proof of identity as it is purely administrative data from which no rights can be derived. You should not allow an employee to work if they identify themselves solely by means of a driving licence or a national identification number.

Proof of identity for visitors
Valid proof of identity for visitors is understood to mean the following: valid passport, valid identity card, valid driving licence or valid residence permit.

Risk Inventory & Evaluation (RI&E)
An inventory of any hazards that may affect the safety, health and well-being of employees. A risk estimate is made of these hazards in the evaluation, focusing on the risk of a hazard arising, the effect that it produces, and how frequently the employees are exposed to the hazard.

Safety passport
A document listing the safety diplomas and certificates possessed by the holder.

Subcontractor
Company that carries out work on behalf of the main contractor.

Unsafe situation
A circumstance that can be reasonably expected to cause an accident or incident if appropriate measures are not taken.

Visitor
A person visiting a TenneT site.

Work application form
Written authorisation by the person responsible for the installation to carry out the (maintenance) work described on the form on or near (high-voltage) installations, substations, lines and/or cables. The authorisation consists of a National Control Centre coversheet, a work plan and circuit diagrams.

Work clothing
At the minimum a pair of trousers and a T-shirt with short sleeves.

13.2 Abbreviations

BHV
Bedrijfshulpverlener / In-Company Emergency Services Officer

BL
Bouwleider / Construction Manager

DT
Dagelijks toezichthouder / Duty Supervisor

EER/EEA
Europese Economische Ruimte / European Economic Area

IV
Installatieverantwoordelijke / Person responsible for the installation

kV
Kilovolt

LBC
Landelijk Bedrijfsvoeringscentrum / National Control Centre

LMRA
Laatste Minuut Risico Analyse / Last Minute Risk Analysis

PBM/PPE
Persoonlijke beschermingsmiddelen / Personal Protective Equipment

PL
Projectleider / Project Leader

RI&E
Risico-inventarisatie en -evaluatie / Risk Inventory and Evaluation

TRA
Taak Risico Analyse / Job Risk Analysis

VCA/SCC
Veiligheids Checklist Aannemers / Safety Checklist for Contractors

VGM/SHE
Veiligheid, gezondheid en milieu / Safety, Health & Environment

VNB
Voorziene niet-beschikbaarheid / Planned Unavailability

WKA
Wet ketenaansprakelijkheid / Supply Chain Liability Act

WV
Werkverantwoordelijke / Person responsible for the activities

Notes

Notes

Notes

LMRA Reminder Checklist

Ask yourself the following questions before you start:

- ☐ Do I know which work I have to do, and how to go about doing it?
- ☐ Have I followed all procedures correctly?
- ☐ Can I carry out my work without the risk of installation failures?
- ☐ Do I have the correct equipment and has it been examined? Do I have the correct personal protective equipment?
- ☐ Is the working environment safe?
- ☐ Are all emergency exits clear of obstacles?
- ☐ Do I know who the In-Company Emergency Services Officer is and where the assembly point is located?
- ☐ Do I know where the fire-fighting equipment, first aid equipment and eye-wash fountain are located?

Everything is 100% clear to me.
I will therefore work reliably and safely!

TenneT is Europe's first cross-border grid operator for electricity. With approximately 20,000 kilometres of (extra) high voltage lines and 36 million end users in the Netherlands and Germany we rank among the top five grid operators in Europe. Our focus is to develop a Northwest European energy market and to integrate renewable energy.

Taking power further

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