

# Safety on the lines



# Contents

4

Think before you act

7

Extra safety for work at height at substations

10

Falling accident leads to significant improvements in an equipment

12

Safety walks and audits develop occupational safety

14

Modernised installations tested at a reserve power plant in Naantali



## Safety on the lines

Fingrid's occupational safety publication 2/2021

**Editor-in-chief:**

Karri Koskinen  
karri.koskinen@fingrid.fi

**Layout:**

Otavamedia OMA

**English translation by**

Semantix Finland Oy

**Publisher:**

Fingrid Oyj  
fingrid.fi  
Läkkisepäntie 21, FI-00620 Helsinki  
P.O. Box 530, FI-00101 Helsinki  
Tel. +358 30 395 5000

**Printed by:** Newprint Oy

**Cover photo:** Nina Susi



### Contact us!

Occupational safety affects us all, and we want to improve safety in cooperation with suppliers. All feedback is important. Please send any ideas for articles, tips for development and feedback on the magazine to Karri Koskinen. Please don't hesitate to get in touch if you have any questions about occupational safety.



**Karri Koskinen**

Expert, Safety

Tel. +358 40 631 2152  
karri.koskinen@fingrid.fi

# FINGRID

PHOTO | NINA SUSI



## Working together and individually in the name of occupational safety

**W**e have engaged in long-term work with Fingrid's service providers to improve occupational safety. We have a very large number of investment projects and, consequently, a large number of hours are worked on our worksites. This increases the likelihood of an occupational accident occurring. For this reason, we need to pay more attention to occupational safety in both the planning and implementation stages. A feeling of urgency is no reason to cut corners in occupational safety matters.

Fingrid and its service providers share the goal of zero accidents. Unfortunately, we will not reach this goal this year because employees from both Fingrid and its suppliers have been involved in occupational accidents in the first half of the year. Most of the accidents have involved tripping, but some of them could have been prevented by thinking carefully about the safest way to do the work before beginning. However, the bright side to this year's occupational safety statistics is that there have been no severe occupational accidents. This year our goal is to decrease the frequency of occupational accidents to less than five accidents per million working hours.

The safety theme for 2021 is "Think before you act!" The foundation for safe work is thorough planning, taking into consideration every aspect of occupational safety. In addition

to advance planning, we need the patience to take a step back, examine the work location from afar, and think for a moment before we start work. This will help us to ensure that we and our colleagues can work safely.

The "Think before you act!" campaign culminates in a video contest. We hope that as many people as possible will get involved and create a short video on the theme of occupational safety. The videos will help us to share information about how different suppliers have put the "Think before you act!" operating model into practice.

The large number of projects and the inherent hazards of grid construction make it challenging to attain a high standard of occupational safety. For this reason, we need seamless cooperation to ensure occupational safety. Furthermore, everyone needs to take responsibility for their own occupational safety and for the safety of others. The zero accidents objective should guide the actions and choices we all make. Occupational safety is created by working together, but every individual's choices have a major bearing on the outcome.

**Karri Koskinen**  
Expert, Safety, Fingrid



Fingrid's occupational safety campaign for 2021 emphasises the importance of work planning and foresight. No matter how confident we are with our work, we should always check the conditions and assess the risks before we start.

TEXT | PÄIVI LEINONEN

ILLUSTRATION | FINGRID

The idea behind the "Think before you act!" campaign is to remind employees of the importance of a methodical and thoughtful approach to work. The aim is for everyone working on Fingrid's worksites to prepare themselves thoroughly and thoughtfully for every job.

Fingrid seeks to permanently integrate the "Think before you act!" approach into practice and incorporate it into the orientation provided on worksites. The approach is founded on the idea of checking the work location from afar and thinking for a moment before doing anything else. Before starting the work, the hazards associated with the work and the environment should be identified, and the personnel should assess whether the work can be done as planned. At the same time, it is necessary to verify that the resources required for the work are adequate: personnel, work tools, materials and personal protective equipment. In addition, contingency plans must be made in case of emergency.

"In 2020, there were too many accidents that could have been prevented by thinking a little more carefully before starting work," says **Markku Pöysti**, Expert, Safety at Fingrid.

#### VIDEO COMPETITION CHALLENGES PEOPLE TO CONSIDER OCCUPATIONAL SAFETY

When the campaign began at the start of the year, Fingrid's service providers and their managers were informed of the matter by letter. In addition, two webinars were held on the topic in February and June. The issue is also being raised actively at regular occupational safety information events. In support of the campaign, Fingrid created posters and a package of material that safety coordinators are covering during safety toolbox talks on worksites.

In order to drive home the message, Fingrid is also producing four videos covering the theme and some real-life situations.

"The videos present the events leading up to accidents. Three of the videos review the build-up to accidents from the perspective of the injured parties and consider how similar accidents could be avoided. In addition to the three short videos, we will create one longer video that covers the other three videos in more depth."

Fingrid invites its service providers to get involved in improving occupational safety and considering examples and approaches for preventing accidents. Suppliers are encouraged to produce their own videos on the theme. The videos should be no longer than four minutes, and they do not need to be produced to professional standards. The important thing is the content. Prizes will be awarded for the best videos.

"We hope that the inclusive element to this campaign will provide our partners with a new way of communicating an important message." ■

#### Before you start work:

- Examine the work location from a few steps back, and think for two minutes before you act.
- Identify hazards – Assess risks – Take the necessary measures
- If you think that the work cannot be done safely or in accordance with the plan, contact your supervisor and discuss how it can be done safely.

**“In 2020, there were too many accidents that could have been prevented by thinking a little more carefully before starting work.”**

Markku Pöysti, Expert, Safety at Fingrid



**IDENTIFY HAZARDS – ASSESS RISKS  
– TAKE THE NECESSARY MEASURES**

The campaign images illustrate the safety risks on worksites.



## “Be aware of the work environment under all circumstances”

We collected some examples of methodical approaches to work and situations requiring special attention on our worksites.

### Olli Forsman

Site Manager  
NRC Group  
Refurbishment of the Keminmaa substation

“**THERE ALWAYS** needs to be a plan when moving around in a substation. Areas usually contain excavations and channels that need to be crossed with care. Furthermore, the signage in work areas must be kept in good order, and employees must comply with signs. Care should always be taken to ensure that the work area is unenergised and earthed. In the winter, slippery conditions pose an additional challenge, and if anti-slip studs are used on shoes, it is important to remember that they can easily pierce the plastic insulation on conducting cables. If personnel lifts are used, it is important to check that the terrain is strong enough to support the hoist throughout the entire route.”

### Jarkko Honkarinta

Transmission Line Technician  
Destia Oy  
Forest Line sections B and C

“**I HAVE** plenty of experience, so it is quite easy for me to identify potential hazards. However, it is important to remain alert at all times, even if the work feels routine. A general rule for new installation technicians is that if they feel even slightly unsure about a situation, they should always ask the supervisor or a more experienced colleague. In hot summer conditions, it is important to remember to drink enough. Dehydration is a danger, especially when working on towers, and this increases the risk of accidents.”

### Ville Ruokamo

Transmission Line Technician  
Destia Oy  
Forest Line sections B and C

“**OUR COMPANY** has a policy known as the ‘ten-minute rule’: before any work begins, we take a peaceful moment to assess the potential hazards and check our equipment. The work tools always need to be checked at the work location before any work begins. It is not enough to check them when we set out to start the work because they could get damaged on the way there. We always need to check the surroundings and the movements of other employees. If you ever notice a colleague acting carelessly, you are obliged to say something. In my experience, everything has become more rushed over the years as deadlines are often tight. This naturally increases the amount of pressure on people, and attention to detail may suffer.”

### Antti Peltokorpi

Infrastructure Technician  
VEO Oy  
Construction of the Pysäysperä substation

“**EVERYONE NEEDS** to ensure their own safety and make sure that their actions do not put anyone else in danger while working. A calm approach is the key to this. Stress and thoughtlessness are the greatest risks. Worksites may have excavations more than two metres deep with steep sides. We need to be alert when we move around and ensure that it is safe to enter such excavations, for example, by using a ladder.”



The first trial climb took place in May at the Keminmaa substation. Pictured: electrician John Salonen (left) and Esa Kärnä of Kärnä Oy, a consultant on the project focusing on working at height.

TEXT | PÄIVI LEINONEN

PHOTOS | NINA SUSI

## Extra safety for work at height at substations

In spring, Fingrid initiated a project aiming to improve the safety of employees working at height at substations. The objective is to find areas for improvement in structures that can be climbed for trials and identify good practices for working at height.

Fingrid initiated an occupational safety project in spring 2021, focusing on work at height at substations. The first step was to conduct trial climbs, which take place at a total of six substations during this year. Among these are an air-insulated switchgear, a GIS station and an HVDC station. The aim is to analyse the various climbable structures in as much depth as possible.

## SAFETY AT HEIGHT

---

“The project seeks to identify best practices for us to pass on. We are also analysing areas for improvement,” says **Timo Heiskanen**, Manager, Substation Management at Fin-grid.

The trial climbs involve activities such as climbing onto the top of a main transformer using a ladder and identifying safe ways of using existing structures. At the same time, the needs for improvements to the structures will be analysed to determine if there are enough anchorage points for fall protection and whether they are in the correct places. It is not necessary to climb onto every structure because certain installations can be inspected from the ground or by using a personnel lift.

If there are any obvious safety issues, a plan should be made to rectify them.

“It is essential to get service providers involved in development work, as we all share the goal of working safely.”

### SPECIALIST CREATES SAFER SOLUTIONS

Kärnä Oy specialises in training employees to work at height where there is a risk of falling. The company has previously arranged training on Fingrid worksites on themes including how to help an injured person down. **Esa Kärnä** is acting as a consultant on the project focusing on work at height.

When the structures are climbed, the project team will study various solutions for anchoring fall protectors as effectively as possible. The aim is to ensure easy use of the Always Attached method for safe and ergonomic work and movement at height. In addition, the project team will identify the best



The trial climb of the Keminmaa substation involved climbing onto the platform of the series capacitor and working there.



## Checklist for working at height

- Employees should always climb, move around at height, and descend according to the plan.
- The correct types of inspected fall protection must be used, and the condition of the equipment should be checked.
- Follow the fall protection plan.
- Remember the Always Attached method.
- Ensure there are contingencies in the event of an emergency. There must be two employees trained in helping people down on the work location or one person with rescue training on the ground, as well as rescue equipment in both cases.

method for helping an injured person down in the event of an emergency.

Most of the trial climbs will take place in autumn 2021. The Keminmaa substation was climbed in spring, and the work involved ascending by ladder to the block of a series capacitor and carrying out work there.

“At this substation, it is not necessary to make any alterations to the actual structures, but more anchorage points are required when getting off the ladder. Moreover, the locations of the anchorage points when moving to the spark gap housing,” Kärnä says.

**John Salonen**, an electrician from Omexom who was involved in the trial climb, says that the climb went as expected.

“Climbing is a part of everyday work. The event involved learning about alternative new methods of fall protection which seemed good. It feels good to notice that the client is interested in improving occupational safety.”

During the trial climbs, Kärnä Oy will identify the hazards and assess the risks of the structures. Based on these studies, the company will draft climbing guidelines and, if necessary, propose changes to the climbed structures and anchorage points for fall protection. The report may be used for purposes such as drafting a fall protection plan. ■



The structures at the Keminmaa substation are appropriate, but additional anchorage points are required for tasks such as getting off the ladder.

**WORKING ON** transmission lines was the focus of an earlier project, entitled “Working at height on Fingrid’s transmission lines”, which led to improvements to the safety of tower ascents. The outcome was a set of specifications entitled “Safe work on Fingrid’s towers”, which describes the anchorage points for fall protection on towers, among other things. Suppliers draft fall protection plans based on the specifications, taking into consideration matters specific to the project and contract.



Access routes to forest machinery were improved by adding ladder and step solutions, access bridges and handrails.

TEXT | PÄIVI LEINONEN  
PHOTOS | RISTO TAKALA

## Falling accident leads to significant improvements in an equipment

In late 2020, an employee was injured after falling off a work machine at the Kontiolahti–Palojärvi transmission line worksite. Significant improvements were made to the machines as a result of the accident.

**D**ecember 2020, a subcontractor was working on a forest harvester equipped with an installation crane on the Kontiolahti–Palojärvi transmission line worksite. The subcontractor was using the crane to take down the conductors in a transmission line that was being demolished.

The forestry machine had just been moved and set up in the tower location, and the employee was supposed to get onto the platform. He climbed onto the block as usual but, in doing so, the foot that was on the block slipped, and the man fell about 1.5 metres onto his back. The subcontractor was using the required personal protective equipment, such as a helmet with a chin strap. The site manager was on the scene immediately after the fall, and the injured person was treated quickly. The reason for the accident was the difficult route to the machine's platform and the slippery conditions on the block.

### ACCIDENTS ARE HANDLED IMMEDIATELY ON THE WORKSITE

When the accident occurred, work was suspended as soon as it was safe to do so.

"Our worksite routines involve reviewing the events of the day at the start and end of each day. Naturally, the incident was discussed. Accidents are a cause for concern, so it is better to suspend work," says **Jani Rintala**, Worksite Project Manager from TMV Line Oy.

## "Our worksite routines involve reviewing the events of the day at the start and end of each day."

The accident occurred on a Friday, and work resumed the following week. Soon after the accident, safety toolbox talks covered the incident, and employees were reminded to take special care when mounting the machine's block. They were also reminded that the steps and platforms on machines may be slippery.

All occupational accidents on Fingrid's worksites are entered into the Quentic reporting system and investigated by the client and the supplier. The aim of investigating accidents is to identify the causes and determine the necessary measures to prevent similar accidents from occurring in the future. The aim is not to identify a guilty party; it is to learn from accidents that have occurred.

### SAFETY IMPROVED SUBSTANTIALLY

As a result of the accident, TMV Line immediately began developing new safety solutions for its equipment.

"The users of machines have a wealth of valuable experience. Ascending onto the block was identified as a clearly high-risk work step," Jani Rintala states.

The access route was improved by adding ladder and step solutions, access bridges and railings. The access route material is toughened perforated steel, which is not slippery and does not collect water. Railings were added to the sides of the block for employees to hold onto. Previously, it was necessary to ascend to the upper platform during refuelling, but structural changes enabled the refuelling pipe to be attached from the ground level. According to the users of the machines, the new steps and access routes have made it easy to ascend to the block, and the prior practice now seems very laborious in comparison.

"The changes to our company's machine were made during the Christmas break on the worksite. The injured subcontractor made corresponding additions to its own equipment. As a consequence of the accident, we identified a need for improvements to prevent similar accidents from occurring again," Jani Rintala says. ■



Jani Rintala, Project Manager from TMV Line, is satisfied with the changes made to the work machine to improve safety.

# Safety walks and audits develop occupational safety

During the coronavirus pandemic, efforts are being made to avoid contact. However, this has not prevented Fingrid from safely arranging worksite audits and safety walks. The prevailing situation has also encouraged us to experiment with virtual worksite visits.

TEXT | PÄIVI LEINONEN

PHOTOS | FINGRID AND MIIKA KAINU



Timo Kiiveri  
Fingrid



Markku Pöysti  
Fingrid

**S**afety and environmental audits are conducted at Fingrid's substations, transmission lines and reserve power plant maintenance and investment worksites. The purpose of auditing is to help people on worksites operate more safely and contribute to meeting the requirements set by contracts and laws.

In practice, auditing means that Fingrid's occupational safety and environmental experts spend an entire day familiarising themselves with the activities on a worksite. The morning is spent reviewing the documentation on safety, the environment and the responsible use of labour. This includes matters such as the worksite organisation, safety planning and monitoring, and arrangements related to the environment and land use. In the afternoon, the experts familiarise themselves with the worksite and assess how well the plans are put into practice.

## SPECIAL ARRANGEMENTS DURING THE PANDEMIC

The regulations and recommendations issued by the authorities are observed in all of Fingrid's operations, and this also applies to audits and safety walks. The amount of remote communication has been increased in order to minimise contact.

The documentation can be audited remotely, just like any other online meeting. If helmet cameras are used, a smaller team can conduct the actual worksite visit. In practice, it is sufficient to have the working group, worksite manager and one of the auditors on the site. The other members of the audit group can watch via a remote connection.

"We had planned to introduce helmet cameras before the pandemic, and this situation gave us a real reason to deploy them," says **Timo Kiiveri**, Senior Vice President, Asset Management.

Technically, a worksite can be audited fairly well via a remote connection, but technology cannot substitute an on-site presence for the actual worksite visit.

“Communication is less immediate than on the worksite, and this is an essential part of the event. We want to show that we are genuinely interested in safety,” Kiiveri adds.

Only a few remote audits have been conducted. According to **Markku Pöysti**, Expert, Safety, the experiences have been promising.

“We are still practising, but I believe that the video link will remain a part of the audit procedure. There are other benefits to using remote connections besides avoiding the risk of infection: a smaller environmental footprint, lower risk of traffic accidents, and more efficient use of time.”

### **THE BOUNDARY BETWEEN EACH PARTY'S AREA OF RESPONSIBILITY HAS BECOME CLEARER**

The Crystal-Clear Line project, which began on Fingrid's worksites in 2019, clarified the occupational safety responsibilities of the client and suppliers. The Crystal-Clear Line is a clear areas of responsibilities between the client and the supplier so that the parties do not encroach on each other's areas of responsibility. This is also taken into consideration in audits.

Pöysti can see development in many areas of operation on worksites.

“The occupational safety and environmental plans have developed over the years, and the project-specific risk assessments are generally high in quality. On the whole, orientation and documentation are handled systematically and effectively. Waste materials are also sorted and recycled appropriately.”

However, there is still room for improvement in terms of identifying highly hazardous work and the associated risk assessments and work instructions, as well as orientation. Highly hazardous work includes demolition work and working in difficult and dangerous work locations. Further action must be taken to translate the training material into different languages.

“We take a consultative approach and collaborate with the contractor. Overall, I can say that the activities taking place on worksites are generally good,” Pöysti says. ■

### **Markku Linnanen**

Worksite Manager  
Siemens Osakeyhtiö

”**IT IS** absolutely a good thing that we have audits and safety walks, and they are carried out with a constructive atmosphere. We work together to ensure that everything occurs as required and promised and the work is done in accordance with the safety regulations.

Sometimes there are comments to address. The idea is to continuously develop our operating methods based on the comments. Working methods, protective equipment and regulations are constantly evolving, so it is important to monitor safety in practice.

Normally, at least one Fingrid audit has taken place on all large worksites, but there has not been one on my worksite during the coronavirus pandemic. Siemens Energy's management has conducted audits on two worksites that I manage. In principle, the audits cover the same things, but Fingrid's audits are somewhat more comprehensive.”

### **Kim Tahkonieni**

CEO  
TMV Line Oy

”**WE CONSIDER** audits to be a very important part of our work. Fingrid puts responsibility into practice – it is more than just a slogan in the annual report. In my opinion, the safety walks and the audits that focus on different themes in detail are a modern way of improving the working environment. It is especially good that senior managers visit the worksite under authentic conditions.

Since the onset of the pandemic, worksite visits have naturally been limited, and we have aimed to avoid travelling between different worksites whenever possible. Remote solutions have been introduced.”



When the installations at the Naantali reserve power plant were tested, employees from the emergency department, among other units, gave their views on the plant's functions, equipment and guidelines.

TEXT | PÄIVI LEINONEN

PHOTOS | VILLE HANNU

## Modernised installations tested at a reserve power plant in Naantali

Fingrid has ten reserve power plants storing large quantities of fuel oil. Contingencies must be in place in the event of an accident when hazardous chemicals are stored in large amounts. Training exercises took place at the Naantali reserve power plant in 2020 to test the functionality of the fire extinguishing systems.

**T**he refurbishment of the Naantali reserve power plant was completed in 2020. Almost all of the fire and extinguishing systems were replaced, and the fuel tanks were fitted with a foaming system and a water spray system.

“The exercises we have now conducted also constituted the actual commissioning test of the installations. At the same time, the personnel from the local rescue department familiarised themselves with the refurbished plant,” says **Maija Nurmi**, Environmental Specialist at Fingrid.

## “Exercises are also an opportunity to work together.”

The test was conducted on a large scale, and foam was released throughout the basin area. The density of the foam was measured because fire-extinguishing foam must be thick enough to suffocate a fire. After this, water sprinkling was conducted in the other tank. The exercise was a success, as the installations functioned as expected.

### USER EXPERIENCE IS VALUABLE

In addition to Fingrid’s personnel, the exercise involved the service provider responsible for operating and maintaining reserve power plants, the Southwest Finland rescue department, the installation suppliers, and the personnel at the power plant on the adjacent plot.

“We always try to organise training sessions that involve everyone affected by the operation of the plant. Often, we also invite people from other industrial facilities in the area. Our previous exercise in Hämeenlinna was a joint exercise with the industrial operator on the same plot.”

An important aspect of the exercise was to listen to the employees from the rescue department. In the event of a fire, the rescue department is highly likely to be the first on the scene. The employees were asked for their views on the plant’s features, equipment and instructions.

“Our discussions led to some good proposals for improvements in areas such as the visual guidance on the plant premises. Another tip we received was to provide hearing protectors at the pumping station because the fire extinguishing equipment is very noisy.”

### EXERCISES HELD REGULARLY

Rescue exercises are arranged at Fingrid’s reserve power plants according to a pre-drafted plan. At least one exercise is held every year, and each plant is involved in an exercise every three to five years.

The focus of the exercises varies so that a range of situations can be practised comprehensively. Sometimes, the exercise focuses on operations, such as taking action in a simulated fire. The Naantali exercise focused on testing the plant’s functionality.

“The exercise was a success, and we received positive feedback from the rescue department. Exercises are also an opportunity to work together,” Maija Nurmi summarises. ■



## Fingrid’s reserve power plants

**FINGRID’S RESERVE POWER PLANTS:** Vaskiluoto, Kristiina, Tahkoluoto, Olkiluoto, Naantali, Forssa, Vanaja, Huutokoski, Tolkkinen, Kilpilahti

- The reserve power plants undergo a trial start-up every six weeks, and they are started up if they are needed in the event of a disturbance in the main grid.
- The condition of the reserve power plants is monitored through advance maintenance, tours of the plant by maintenance personnel, and operational control and video surveillance systems.
- Every year, reserve power plants undergo several different technical, environmental and safety-related inspections.

# Take a video and enter the competition!

As part of our Think Before You Act campaign to improve occupational safety, we are arranging a video competition to activate Fingrid employees and our suppliers and promote occupational safety!

You can enter the competition by sending in a video about occupational safety. Videos should be between 30 seconds and four minutes in length, and submissions are accepted between 16 June and 30 September.

Enter the competition by sending a video to [markku.poysti@fingrid.fi](mailto:markku.poysti@fingrid.fi) or by calling +358 40 529 0968.

Prizes will be awarded for the best videos!



## FINGRID

Läkkisepäntie 21, FI-00620 Helsinki • P.O. Box 530, FI-00101 Helsinki  
Phone number for all offices: +358 30 395 5000  
• [fingrid.fi](http://fingrid.fi) • [fingridlehti.fi/en](http://fingridlehti.fi/en)



@fingrid\_oym • Fingrid Oyj • @fingridfi • @Fingridoyj

Hämeenlinna  
Valvomotie 11  
13110 Hämeenlinna

Oulu  
Lentokatu 2  
90460 Oulunsalo

Jyväskylä  
Lutakonaukio 1  
40100 Jyväskylä

Rovaniemi  
Teknotie 14  
96930 Rovaniemi

Vaasa  
Runsorintie 1  
65380 Vaasa

Varkaus  
Wredenkatu 2  
PL 1, 78201 Varkaus