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Safety on the lines

Fingrid's occupational safety publication for service providers
2/2017

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Design by

Better Business Office Oy

English translation by

Mester Translation House Ltd

Printed by

Lönnberg Painot Oy

Published by

Fingrid Oyj, www.fingrid.fi

Läkkisepäntie 21, FI-00620 Helsinki

P.O. Box 530, FI-00101 Helsinki

Tel. +358 30 395 5000

Cover

Project Manager Jari Heinonen and Worksite Manager Ronny Mustajärvi from ABB ensure that expansion work at the Länsisalmi sub-station proceed according to plan.

Cover and back cover photos

Matti Immonen

Contact us!

We are continuously striving to improve our operations concerning occupational safety. Occupational safety affects us all, and we wish 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

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EDITORIAL

Safety starts with each of us



Photo: Tomi Parkkonen

The atmosphere at Fingrid worksites was bleak when work continued after the summer. A fatal occupational accident occurred at a Fingrid worksite on Friday 25 August 2017. An experienced transmission line worker died after falling 16 metres from a tower to the ground. A safety investigation was initiated by the authorities, the supplier and the contractor immediately after the event. We are extremely sorry about this event. We are considering measures that will allow us to better ensure that such an event does not occur in the future. In addition to the fatal occupational accident, 2017 has so far included six workplace accidents resulting in sick leave, one of which was serious. Every one of these is too many, because our aim continues to be for every worker to leave the site safe and sound every day.

Fingrid's goal is zero accidents. Achieving this goal requires strong commitment to occupational safety on the part of every person who works with Fingrid projects and maintenance. Risk-taking is completely unacceptable at Fingrid worksites, and we have decided to implement even stricter sanction procedures. In cases of serious violations, we will remove the violator from the worksite immediately.

Fingrid invests strongly in occupational safety. Over a period of several years, the occupational safety development project has developed new tools and operating models and trained people working at Fingrid worksites in order to ensure and improve occupational safety. Occupational safety development is long-term work. When we proceed in a determined manner, this will be visible in work methods, attitudes and the safety climate. We must all have the right attitude in order to achieve a level of safety culture at worksites where each person takes responsibility for their own safety and that of others.

Fingrid will perform a safety climate survey in autumn 2017. The objective is to determine the respondents' perceptions of how management and employees and Fingrid as a client handle occupational safety matters. We hope that all people working at Fingrid worksites will complete the survey.

Let's work together to make Fingrid worksites safe!

Kari Kuusela, Executive Vice President, Fingrid Oyj

SAFETY CLIMATE AFFECTS US ALL

Text Karri Koskinen and Henriikka Ratilainen
Photo Matti Immonen



There are no problems with the safety climate at the Länsisalmi substation worksite. The photo shows Project Manager Maria Puhtila from Empower, Safety Specialist Karri Koskinen from Fingrid and Project Manager Jari Heinonen and Worksite Manager Ronny Mustajärvi from ABB.

Safety climate is the personnel's shared perception of how their workplace approaches occupational safety matters in terms of management and daily work.

The development of safety climate is affected by all employee perceptions of the way safety matters are handled at the workplace: how a work group reacts when you mention observing a safety deficiency or whether supervisors encourage safe work even in urgent situations.

Research shows that companies with a good safety climate have less accidents than companies with a poor safety climate. When trying to develop occupational safety, it's important to know what kind of safety climate prevails at the workplace. The atmosphere affects the way in which people function in their daily tasks at the employee and management level.

The level of the safety climate can be determined by measurement, which is being carried out as a survey for the personnel. Among other things, the survey will assess the management's commitment and interest in safety matters and how it prioritises safety in daily work. It will also examine how views differ between different units and personnel groups. The survey will provide information about the strengths of the safety climate and safety activities and the areas that need development.

Speeches can't change safety culture – this requires changes in operating methods. This is why it is important for as many people as possible to participate in the survey and honestly express their opinion about how safety matters are handled and the development needs at their workplace.

FINGRID WILL MEASURE THE SAFETY CLIMATE THIS AUTUMN

Fingrid is arranging a safety climate survey for its own personnel, suppliers and subcontractors in autumn 2017. The aim of the survey is to determine the level of the safety climate at Fingrid worksites and find development areas. The survey will examine how respondents perceive that Fingrid,

as a contractor, and the management and employees at their workplace handle occupational safety at Fingrid worksites.

The survey will be carried out in electronic and paper format. The target group for the survey is employees, project management, worksite management, management representatives, planners and subcontractors who work with Fingrid's investment projects and maintenance. The survey takes 15-20 minutes to complete and it's a good idea to reserve the required time and a quiet place for this purpose. We hope that everyone can complete the survey during their working hours.

Every response is important in order to give us the most reliable picture of the prevailing safety climate at Fingrid worksites. Responding to the survey also means you can influence the development of occupational safety and give feedback to the contractor and your own workplace management. The survey is based on multiple choice questions, but you can also submit open feedback.

The results will be processed internally at Fingrid, in Fingrid's occupational safety group for suppliers and at Fingrid's occupational safety seminar in 2018. The summaries published will not present the responses of any individuals or suppliers. Furthermore, the results will not be used to compare suppliers. Supplier-specific results can be provided to suppliers if there are enough respondents to ensure that individual participants cannot be identified.

This measurement is part of Fingrid's occupational safety development project, the goal of which is to improve the level of occupational safety at Fingrid worksites and increase readiness to develop and maintain a high level of occupational safety in investments and maintenance. The safety climate at Fingrid worksites is the combined outcome of the working community's attitude towards occupational safety and its operating methods. Safety starts with each of us, and working together is the only way we can achieve the target of zero accidents.

Please contact **Karri Koskinen** if you have any questions about the safety climate survey. You can find the contact information on the first page of the magazine. ■



FROM THE SERVICE PROVIDER

Case Vattenfall

Creating an occupational safety culture in a new organisation

Text **Toma Karkkulainen and Jaakko Hämäläinen, Vattenfall Services Nordic Oy**
Photos **Johannes Wiehn, Marker Creative**



Ossi Muuronen from Fingrid and
Jaakko Hämäläinen from Vattenfall
at Yliskälä–Koria worksite.

A lot of questions come up when a new organisation starts a transmission line construction project. The materials and tools are already in order, but how can a functional organisational culture be created? How is occupational safety at the worksite managed or what kind of safety culture can be built in a short time?

An occupational safety culture is made up of many small things. There is no single right way to do things at a transmission line worksite, and in practice all of the more detailed work planning is done at the worksite where the work is performed. This is particularly important when technicians from more than one country are working at the same worksite. A mixed group of Finnish and Swedish technicians supplemented by subcontractors work at Vattenfall Services Nordic's Yliskälä–Koria 110 kV worksite. Finding common operating methods, work practices and a shared language has been a challenge. However, the differences between Finnish and Swedish work cultures are relatively small in comparison to, for example, technicians coming from eastern European countries. Both sides learn from the other's good operating methods, meaning that

everyone is sure to come away with something useful for future use.

When activities start from zero without proven practices and documents, the personnel's earlier experience and attitudes have a strong impact on developing the safety culture. It has been extremely important that everyone had experience – decades in some cases – of transmission line worksites. This meant that the organisations of previous employers or the customers' safety culture has been combined with the new organisation's activities to create Vattenfall's own safety culture. When creating an occupational safety culture, everything starts with attitudes and examples – a "who cares" attitude spreads more easily than a thorough attitude.



” **When creating an occupational safety culture, everything starts with attitudes and examples**

PROJECT MANAGEMENT SETS AN IMPORTANT EXAMPLE

The role and example of project management in induction, start-up meetings and worksite supervision provide the foundation for safe work. The management communicates a lot with each other about events at the worksite. The worksite manager plays a key role in creating attitudes when leading activities at the site. The manager holds morning meetings each day with technicians, makes worksite visits at subcontractor sites and brings the spirit of safety to the worksite. The morning meetings review the agenda for the day and emphasise certain occupational safety matters that are important for that day. The aim is that when employees go to the worksite, occupational safety matters are as fresh in their mind as the actual work assignments.

In addition to performing weekly maintenance inspections, the safety supervisor's work includes induction for people arriving at the worksite, monitoring safety at the worksite, managing qualifications and participation in planning

meetings. The safety supervisor is involved in applying for the required official permits and monitors fulfilment of the permit conditions. However, in addition to supervision the job involves highlighting safety perspectives. The safety supervisor is responsible for reminding people to consider the risks of work phases that seem routine and focusing their attention on the existence of risks. The biggest challenges associated with the job include remaining an “outsider” among the employees and examining activities from a discrete position while still being aware of daily worksite activities. The workload of a safety supervisor is significantly reduced by the NordSafety application's standard templates for MVR, making safety observations and toolbox talks. Ease of use helps maintain a low threshold for recording observations and toolbox talks.

The safety supervisor has good opportunities to positively influence safety culture at the worksite via induction, by being visible at the worksite and participating in the discussion at meetings attended by everyone.

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A SWEDISH RISK ANALYSIS AND ANONYMOUS FEEDBACK

One of the current challenges at the worksite is getting employees to report more safety observations. There would be a lot more observations if deficiencies or positive matters were highlighted to a greater extent. It's important to make submitting observations a part of normal routines and daily activities. Making safety observations and focusing attention on small, seemingly routine matters go hand in hand, and it's clear that employees need even more encouragement to do both of these things.

” Swedish technicians perform a risk analysis for every worksite or work phase themselves rather than it being done by the worksite management.

One method of improving occupational safety has been the Swedish custom of performing a risk analysis. Swedish technicians perform a risk analysis for every worksite or work phase themselves rather than it being done by the worksite management, as is the case here. This has proven to be a good method, because employees often have a more practical perspective on the risks than the worksite management.

Another operating method used at the worksite is the anonymous submission of personal feedback/development forms. Anonymous feedback allows people to freely report how they feel and their views on what is going well and where there is room for improvement. Subcontractors have also participated in this proven and effective practice. ■





EMPLOYEES AT LÄNSISALMI WORKSITE HAVE THE RIGHT ATTITUDE

Text Suvi Artti
Photos Matti Immonen

Project Manager Maria Puhtila and Worksite Manager Jussi Ala-Kokko from Empower believe that good planning and clear instructions are the starting points for safe work.

Comprehensive induction, careful planning and continuous monitoring are the cornerstones of safe activities. Occupational safety is a self-evident part of work at the Länsisalmi substation worksite.

A BB's project manager **Jari Heinonen**, who is responsible for the expansion of the Länsisalmi substation, has seen a big change in safety culture during his 20-year career. "We've made amazing progress in terms of occupational safety. Now we already consider how work can be performed safely in the planning stage."



He says that a good occupational safety culture is created via inductions and continuous monitoring. Employees have the right attitude.

“Today no-one complains if I mention something like inadequate equipment to employees. People initially resisted the regulation concerning use of safety glasses in all situations. Now it’s pretty much standard practice.”

As a main tester at the ABB worksite, **Jarmo Mäkinen** has also noticed an improvement in attitudes over the years.

“Everyone cares about this and wants to focus on safety. If something requires attention, it’s taken care of right away.”

According to Mäkinen, the basics come automatically. “We use lifts instead of ladders, always wear the required equipment and perform the work without voltage.”

LEARNING IN KENYA

At the time of this interview, ABB’s worksite manager **Ronny Mustajärvi** is in his first week of work at the Länsisalmi worksite. Mustajärvi has experienced different work cultures, because he spent a year working as a safety supervisor at an ABB worksite in Kenya.

“The challenges in Kenya are different from those in Finland. It wasn’t easy to implement all the European regulations. Africa taught me to see safety in a different way than in Finland,” states Mustajärvi.

In Kenya, he worked as a safety supervisor alongside two other supervisors. Although the conditions and culture were different, the same good practices used in Finland also worked in Africa. Every morning began with a toolbox talk.

According to Mustajärvi, there’s no trick to remembering occupational safety – simple methods are enough.

“Easy-to-print signs posted on the wall are a good way to remind people about, for example, using a helmet or safety glasses every day. These little things have a big impact.”

CLEAR INSTRUCTIONS MAKE WORK EASIER

Empower’s project manager **Maria Puhtila**, who is responsible for transmission line arrangements at Länsisalmi, says that safety matters are one part of normal daily work.

” Good, clear instructions mean that there’s no need to interpret how something should be done.



A portal tower was erected over a transformer at the Länsisalmi substation worksite in September.



”This is very demanding work: we’re dealing with high places, large forces and heavy loads.”

Puhtila appreciates Fingrid’s clear safety guidelines. “Good, clear instructions mean that there’s no need to interpret how something should be done.”

Empower has invested a lot in safety in recent years. Toolbox talks are held at the worksites, with themes that can vary according to the season. Employees are also encouraged to submit notifications about dangerous situations and near misses.

Transmission line worker **Ville Ala-Kokko** believes that reviewing accidents or near misses that happen elsewhere is a good practice.

“If an accident happens at another worksite, it’s good to learn from it. The reason may very well be something simple that we didn’t even think about earlier.”

Although stricter safety instructions sometimes seem excessive, he understands why they exist.

“It always takes time to get used to new things, but the rules are being made for a good reason. And things have gone well. Nothing has ever happened to me, and I’ve never had to take sick leave because of an accident.”

CROSSING RING ROAD III IS A CHALLENGE

According to Empower’s worksite manager **Jussi Ala-Kokko**, the starting point for safe work is good work planning.

“We plan all stages of work a week in advance, and take the safety perspectives into consideration.”

Running alongside the Länsisalmi substation, Ring Road III adds a special challenge to safety planning. The transmission line across the road will be moved from one tower to another without stopping traffic. Jussi Ala-Kokko says that this arrangement requires double checking of everything.

“We’ve moved lines above roads before, but dealing with such a busy road is something completely new.” ■



FROM THE SERVICE PROVIDER

Case Dalekovod

HSE practices in Finland, Norway and Croatia – what can we learn from other countries?

Text **Mladen Zorko**

Photos **Tero Pajukallio and Ivan Kurobasa**



The Croatian company Dalekovod has experience in transmission line projects in several European countries. Project Manager **Mladen Zorko** tells us about his experience in occupational safety in Finnish, Norwegian and Croatian transmission line worksites.

Dalekovod serves as the main contractor in Fingrid's Lieto–Forssa and Vuoksi–Onnela transmission line projects. We have the experience of working in 80 different countries worldwide. When it comes to HSE culture, working in Scandinavia has taught us a lot, and good practices are applied progressively in Croatia. The safety culture of workers who have been working for many years in Norway and Finland has a significant impact and is transferred to all construction sites where Dalekovod performs the work.

All Dalekovod's activities related to risk management are based on the application of the legislation and client's requirements, regardless of the country in which the works take place.

Work at heights and near high voltage are among the most dangerous worker activities, seeking sustained effort and concentration of workers, and permanent supervision and extensive experience of the managers and foremen in the implementation of measures for safe operation.

WORKING NEAR ENERGIZED LINES

When working near high voltage, there are some differences in safety requirements in different countries. In Norway, there is a widely accepted and applied "30 m rule", meaning that the constructor has to notify the HV installation owner when work is planned closer than 30 metres from an active HV line. The HV installation owner will define what safety precautions need to be in place. If work is planned to take place closer than 15 metres from the HV installation, it shall be done under the supervision of a HV safety supervisor.

In Croatia, there are no such requirements, with one exception. For the works on HV installations, the head of the work should appoint someone to be directly responsible for the work and implementation of safety and health measures.

In Finland, the electrical contractor appoints a person in charge of electrical work who possesses a certificate of qualification authorizing him/her to supervise electrical work



The Croatian company Dalekovod is the main contractor for the Lieto–Forssa transmission line.

within the area of operations. All persons who are to perform electrical work must pass electrical safety training according to the standard SFS 6002 at least once every five years. The Supplier must also have a nominated person in control of a work activity according to the SFS 6002 standard and an electrical safety supervisor for every work location involving a risk of electric shock or arc.

DEMANDING WORK IN THE NORWEGIAN FJORDS

Applied methods for the construction of transmission lines in various countries are conditioned by the configuration of the terrain and the weather conditions. Inaccessible terrain requires different methods of transport of workers, constructional elements and machinery.

Crossing the fjords in Norway always brings a number of challenges, and Dalekovod is the first foreign company that has managed to meet specific requirements in Norway.

The project requirements include the use of special machines and building more massive constructions, which means more working hours.

In Norway, unlike other countries, a helicopter is used for all works, especially in inaccessible areas, but also for foundation work, tower erection and stringing in areas that could also be accessible by car. Helicopter operation simplifies work on the stringing of the conductor, tower erecting, concreting foundation, transport workers and materials, but it is an additional risk to the safety of workers and the environment. In most cases, the adjacent line is disconnected when pulling the pilot rope for the nearest phase.

The main electrical risks are connected with the build-up of static electricity on metal objects transported by helicopter, including the helicopter line itself.

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” Crossing the fjords in Norway always brings a number of challenges. The project requirements include the use of special machines and building more massive constructions, which means more working hours.



To ensure the quality and safety of the helicopter operations, favourable weather conditions, helicopter personnel experience and worker training are required. For these reasons, Dalekovod exclusively engages companies from the Scandinavian countries, which have experienced crew and the best knowledge of the weather conditions in this area.

WORKING AT HEIGHT

When working at a high height (above 2 metres in Finland and Norway, 3 metres in Croatia), there are safety practices in each country, and workers' medical capabilities are checked regularly. For example, in Norway, double protection

against falling must be applied, e.g. employee must be linked with positional lanyards as the first barrier and both hooks attached to tower as another barrier.

Fingrid requires that all individuals working on towers have undergone the “Skills tests for working on towers “ especially for additional earthing, the use of safety gear, and the rescue from a high height before beginning work on towers.

In Norway, correspondingly, the use of personal protective equipment, rescue and earthing is regulated by law, and it is the responsibility of the contractor to ensure that the requirements are met. ■

Focus on working at height

We request that all our suppliers and subcontractors pay special attention to jobs that involve working at height. Working at height must always be planned, the risks assessed, and immediate action taken if any deficiencies are observed. Make sure that all people working on the towers have valid qualifications and suitability tests. The “Always attached” method is mandatory at Fingrid worksites and compliance must be monitored. Review the basic rules for working at height with the employees. The condition of fall protection equipment must also be checked regularly and always prior to use. Ensure that all fall protection devices used at the worksite have undergone regular inspections and are in the required condition. All equipment used for fall protection must meet the requirements set for them.

Further information: Karri Koskinen

Changes to contract terms

Fingrid’s contract terms concerning safety and environmental issues, as well as subcontracting and the use of labour, were updated during spring 2017. Furthermore, specifications for the arrangement of waste management procedures intended for service providers have been updated. A bulletin on the changes in contract terms has been saved in the NordSafety reporting system – have a look at the changes!

Please contact Fingrid’s experts if you have any questions:

Contract Terms Concerning Safety:

Karri Koskinen, tel. +358 (0)30 395 5205

Contract Terms Concerning Environmental Issues:

Satu Vuorikoski, tel. +358 (0) 30 395 5195

Contract Terms Concerning Subcontracting and the Use of Labour:

Henrik Gummerus, tel. +358 (0)30 395 5278

Occupational safety instructions for electrical work have been updated

The updating of the Operating Safety and Electrical Work Safety in the Main Grid instructions has traditionally followed the same cycle as maintenance agreement periods. This is still the case.

Fingrid employees as well as connecting parties and our suppliers have been able to influence the content of the instructions.

Feedback received from these groups during training sessions and at worksites concerning the functionality, clarity and content of the instructions has been taken into consideration when updating the instructions. Accident investigations have also provided a lot of new content and procedures for the instructions. When necessary, important changes have been implemented while the instructions are still valid, but such cases have been rare. In the future, our target is to further increase the role that suppliers play in developing the instructions and we will be utilising the occupational safety group for suppliers for this purpose. The work of this group starts soon.

In addition to updating the instructions, we also make changes to training and review the old content. Training sessions will begin in early November, and more information about them will be provided soon.

Further information: Pasi Lehtonen

Risk assessment day

Fingrid has implemented a new practice to support proactive occupational safety work. The aim is to arrange a risk assessment day for every new transmission line and substation project. The goal of the day is to improve the risk awareness of people working at Fingrid worksites, identify the most significant risks at the worksite, specify work that causes a particular risk and for which separate work risk assessments will be performed, and to review the basic requirements for occupational safety in electrical work.

Further information: Karri Koskinen

Fingrid and the occupational safety group for suppliers

Fingrid has established an occupational safety group for suppliers, with the first meeting planned for autumn 2017. The group’s goals include promoting 0-accident thinking and a high level of occupational safety at Fingrid worksites, sharing good occupational safety practices and information about accidents and dangerous situations, and addressing occupational safety-related requirements and guidelines at Fingrid worksites.

Further information: Karri Koskinen

A new protection scaffold

In cooperation with Eltel Networks Oy and the Finnish Transport Agency, Fingrid has developed a protection scaffold for crossing railway tracks. The scaffold makes it possible to install transmission line conductors without restricting train traffic. The protective scaffold is based on support cables running across the tracks and protective cables parallel to the direction of the track that prevent a conductor from reaching the track conductors or the train. The support pipes are made from standard-length pieces of steel pipe that, when properly selected, allow employees to deal with track bed types of different heights.

Trains can operate at normal speed and conductor installation doesn’t have to be interrupted for trains, which saves a significant amount of money. Conductor installation at the crossing location is monitored by a railway work supervisor appointed by the Finnish Transport Agency. This person has a direct connection to traffic control and the people installing the conductors. The method is already available for use, but final documentation of the structures is still in progress.

Further information: Risto Uusitalo



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