

Asset Management / Koskinen Karri

25 September 2019

Suppliers' occupational safety group

Date and time 25 September 2019, 9 am–4 pm

Venue Fingrid Oyj, Lakkisepäntie 21, Helsinki, Finland

Present Marko Elorinne, Eitel Networks Corporation
Juha-Matti Huhtanen, ABB Oy
Toma Karkkulainen, Vattenfall Services Nordic Oy
Markku Linnanen, Siemens Osakeyhtiö
Teemu Palosaari, Destia Ltd
Timo Pekonen, Empower PN Oy
Aleksi Peltola, VEO Ltd
Jani Rintala, TMV Line Oy
Toma Karkkulainen, Vattenfall Services Nordic Oy
Ari Ala-Kokko, Pohjanmaan maanrakennus ja voimalinjatyö Ky
Pasi Lehtonen, Fingrid Oyj
Karri Koskinen, Fingrid Oyj
Maija Nurmi, Fingrid Oyj
Ville Viita, Fingrid Oyj
Mikael Wiren, Fingrid Oyj

Absent Janne Ketola, Infratek Finland Oy
Mikko Hakala, TLT-Building Oy
Kimmo Honkaniemi, Caverion Suomi Oy

Agenda

1 Meeting arrangements

Karri Koskinen acted as the chair and secretary. It was agreed that minutes would be taken at the meeting and sent to the attendees for commenting. The minutes and other materials used at the meeting will be published on Fingrid's website.

In addition to the ordinary members of the occupational safety group, the meeting was attended by Fingrid's Project Manager Ville Viita, Specialist Maija Nurmi and Expert Mikael Wiren, as well as Ari Ala-Kokko from Pohjanmaan maanrakennus ja voimalinjatyö Ky.

At the beginning of the meeting, the attendees were reminded of the need to comply with competition law during the meeting and break times and that they should only discuss occupational safety matters.

The group's members were reminded that the presentation material must be sent to Fingrid's representative by the requested date in order for it to be published on Fingrid's website before the meeting.

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2 Minutes of the previous meeting

It was agreed that the minutes of the previous meeting would not be reviewed in full. Only the matters agreed during the previous meeting were reviewed:

The suppliers still hope to receive condition information from Fingrid when Fingrid requests tenders so that the requirements for safe demolition methods are the same for every supplier. It was agreed that the matter would continue to be processed internally by Fingrid. The attendees were reminded that the provision of condition information shall not affect the supplier's obligation to inspect towers before ascending them.

- The transmission line team remains of the opinion that Fingrid's wooden tower cables are generally in an adequate condition, although this status may change rapidly. The safety of climbing must be confirmed before every climb. On the other hand, rot inspections require climbing, so this is not a solution to the problem.
- Therefore, the transmission line team sees no reason to conduct specific rot inspections before demolishing towers.

It was agreed that Karri Koskinen would inform Fingrid's project managers of the request to ensure that all available reports on foundations are appended to requests for tenders and, if necessary, entries are made in the safety documentation.

- The existing materials on old structures are available to contractors using PW user accounts. The suppliers stated that it can be difficult to find material on PW. In the suppliers' opinion, it would be good to include these materials in requests for tender.

The work phases will be added to the report forms, and this will make it easy to classify them in the occupational safety report. The suppliers reminded the attendees that testing should be established as one of the work phases.

- This has not been done. A new feature has been introduced in Quentic for classifying forms. Karri will find out whether the new feature can be used to classify accidents, near misses and safety observations.

Old earth connections on transmission line projects where a new line is built to replace an old line: Demolition, connection and earthing protocols.

- This matter is being handled by Fingrid's transmission line team. Pasi Lehtonen will ensure that this matter progresses.

It was agreed that Karri would draft a hazard identification form on Quentic.

- There was a brief discussion of Fingrid's recent "Crystal-clear boundary" project, which clarifies the responsibilities of the client and the supplier, thereby ensuring that they do not impinge on each others' areas of responsibility. On the basis of this, it would be more natural for suppliers to create their own checklists for identifying work hazards.

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- It was stated that the work phase kick-off meeting should include a review of the risks, and if a major risk is observed on the worksite, a separate form should be filled in. It was stated that it would be good to have a blank/more concise form for entering risks. Employees should also be able to record risks. The existing work risk assessment form would be suitable for this purpose. It was stated that it would be good to record deviations and conditions on the work risk assessment form. It was agreed that the work risk assessment form would be made public. At the next meeting, there will be a test of how it went. Link to the public form: <https://app-portal.quentic.com/publicforms/adnemzfhjg09ntky>
- The safety toolbox talk and safety observation forms can also be used to record site-specific risks.

In other cases where the online training is required, Fingrid will work with the waste management provider to ensure that it is completed. This will be communicated to Fingrid's contact person for agreements. This has been communicated.

It was agreed that the suppliers would continue communicating matters related to earthing work machinery to renters of personnel hoists. It was agreed that this matter would be monitored. The suppliers stated that the earthing attachments for work machinery should be fitted with care.

Elements should include permanent and visible markings stating the total weight of the element. The suppliers will investigate this on their worksites.

- The suppliers stated that the weights are stated on the foundation elements at least.

It was agreed that the suppliers would review the fall protection solutions used when unloading elements on their worksites and investigate the current status. There will be a follow-up at the next meeting.

As a group, we brainstormed the things that need to be taken into consideration when working under and near live wires. It was agreed that Pasi Lehtonen would make a checklist in the format of a briefing concerning working under and near live wires. This has been done and sent out.

3 Update to the contract terms on environmental matters (Maija Nurmi)

Maija gave a presentation on the 2020 update to the contract terms on environmental matters.

Maija said that some of the detailed requirements will be removed from the contract terms, such as the requirement concerning the size of the containment basin. The details that are removed will be added to the material on best practices.

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Changes will be made to the contract terms concerning the following matters:

- Recommending renewable fuels.
 - It is hoped that reporting will also be conducted on this subject.
- Monitoring the consumption of fuel and worksite electricity.
 - In the suppliers' opinion, reporting is possible because information can be collected from sources such as fuel and electricity invoices.
- Former tower sites must be tidied up.
 - We discussed how tower sites could be tidied up. Stones will be placed in a Fincumet skip. The suppliers stated that stones are difficult to find when they are covered in clay and other material. The suppliers discussed whether to notify landowners there may still be some stones remaining that could damage agricultural machinery.
 - The suppliers stated that it is difficult to estimate which items must be removed from tower sites if items have been brought the location by other parties over time.
- Emission requirements applying to work machinery, vehicles and other equipment.
 - At this stage, this is not being drawn up as a requirement. Instead, it will be introduced gradually.
 - The suppliers stated that the new machines cannot always be started on transmission line worksites after being outside all night in the winter.
 - The suppliers commented that the emission requirements might give rise to challenges for the forestry tractors used on transmission line worksites because forestry tractors often need to be adapted for use on transmission line worksites. Adapting new machinery for use on transmission line worksites may not be profitable. If this enters into force as an absolute requirement, there is the risk that some old contractors will no longer work on transmission line worksites. Monitoring may also be challenging.

4 Preventing burglaries – Security guards, technical solutions and organisation (general level, all)

We discussed the best practices for preventing burglaries. Suppliers will soon be subject to requirements concerning burglary prevention.

5 Element construction plans delivered to the main contractor by Fingrid (Karri and Mikael)

Mikael Wiren gave a presentation on element construction plans delivered to the main contractor by Fingrid.

Fingrid has decided to prepare ready-made plans to make substation construction easier for suppliers. Ready-made images will make tenders easier to prepare. Fingrid has not prepared ready-made plans showing how the elements are to be installed safely. The principle is for suppliers to have access to the initial information, and the supplier will then be responsible for plans related to occupational safety/installation.

There was a discussion on the construction of control centre buildings as separate contracts. The suppliers commented that in such cases, the station building should be handed over to the electrical contractor in a safe and tidy state.

It was stated that construction using prefabricated elements carries significant occupational safety risks, such as the risks of falling and being crushed under an element. Unloading elements is also high-risk work. These risks should be taken into consideration when planning work.

We reviewed a near miss in which a design error had made its way into the completed element. Fortunately, the error was noticed before any installation work began. It was stated that every party must ensure that the designs contain the right information. The kick-off meeting for element construction represents a good opportunity to verify the designs. In conjunction with this, it is a good idea to discuss whether lifting accessories can be borrowed from the element factory.

The suppliers expressed the wish for a notch/hole on every side of the pillars of field towers in order to attach an installation tool to enable elements to be moved. At present, it is necessary to move them using an excavator, which can sometimes be time-consuming. It was agreed that Mikael would handle the changes to the plans.

There are many types of pillar span stays, but the hole for lifting accessories is in the same place on all of them. For this reason, the centre of gravity is in the wrong place on some items. In addition, some element suppliers provide elements with holes that are too small for lifting accessories. It was agreed that Mikael would drive this matter forward.

Elements have increased in size over the years. The suppliers commented that the increase in the size of elements might cause hazards in situations such as transportation.

6 Fall protection when dismantling elements:

6.1 Fall protection solutions (Juha-Matti Huhtanen)

Juha-Matti gave a presentation on fall protection when unloading elements.

It was stated that it would be good to receive lifting accessories from the element manufacturer. These can be obtained from the manufacturer for an additional fee. It is

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good practice to ensure that the lifting accessories are pre-attached in the correct places. It was stated that elements can be difficult to lift using straps. For example, lifting cables are supplied with steel components.

Efforts are often made to avoid storing elements on worksites and to have them lifted into place at once instead. We discussed whether the transportation process could be improved as a whole while taking scheduling and the need for interim storage into consideration.

There was a discussion on whether elements or element unloading could be planned in such a way that it would not be necessary to ascend onto the truck bed to affix lifting accessories.

Special attention has been paid to fall protection in recent years. The old methods no longer work. New methods must be identified to prevent employees from falling while unloading elements. The supplier is responsible for planning and executing the unloading of elements. Fall protection should be planned in conjunction with this. The suppliers will communicate the need for this planning on their worksites, and Karri will instruct Fingrid's safety coordinators to ensure that plans are in place.

Risk assessments should take into consideration the fact that there is relatively little lifting of elements on Fingrid's worksites.

The suppliers proposed a way of unloading elements (span stays and columns) without going onto the truck bed. Although this requires an open hook to be used, the suppliers consider this a safer way of working. If an open hook is used on the basis of a risk assessment, it is essential to confirm whether the method meets the requirements set by the authorities.

It was stated that a lifeline attached to a vehicle is a good practice for implementing fall protection when elements are unloaded, and this should be piloted.

6.2 Documents to be obtained from element manufacturers, best practices, tools for lifting elements and foundations (**Markku Linnanen**)

Markku gave a presentation on element installation.

It was stated that no accidents related to element installation have occurred on Fingrid's worksites.

By way of example, Markku reviewed an installation plan concerning concrete **elements**.
header level:

- Elements and lifting accessories
- Crane types
- Storing elements on the worksite
- Order of installation of elements

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- Tolerances and follow-up measurements
- Installation, supports and minimum bearing areas
- Work platforms and fall protection required for installation

Markku presented an installation plan for prefabricated concrete components. The plan is available online:

https://www.elementtisuunnittelu.fi/Download/22333/asennussuunnitelma_v4_online.pdf

Markku presented Parma's installation and worksite instructions, which are available online:

https://parma.fi/userassets/uploads/documents/2018/06/parman_ontelo_ja_kuorilaatastot_asennus_ja_tyomaaohje_2015_web.pdf

7 Fall protection plan at Substations (Janne Ketola)

It was agreed that this topic would be postponed until the next meeting.

8 Use on worksites of machinery and equipment manufactured in house (Marko Elorinne)

It was agreed that this topic would be postponed until the next meeting.

9 Storing and handling footwear and equipment contaminated with creosote (Jani Rintala)

Jani gave a presentation on storing and handling footwear and equipment contaminated with creosote.

The harness/rope must be replaced if necessary. It is a good idea to have a separate rope/harness for wooden towers.

The suppliers recommended arranging dedicated storage areas for clothing contaminated with creosote. It must not be stored in the same place as other clothing.

Jani reviewed the protective equipment that must be used:

- Chemical protection gloves
 - Protective gloves are used only once and then discarded
- Eye protection
 - Eye protectors are cleaned, contaminants such as dust are removed, and they are replaced if necessary
- Respiratory protection
 - Breathing masks are used only once and then discarded
- Workwear/protective footwear
 - Workwear contaminated with creosote shall be sent for chemical washing (along with the additional information that it contains creosote)

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- Protective overalls
 - Protective overalls are used only once and then discarded
- Footwear/harnesses/work cords are replaced if necessary. Separate footwear/cords/harnesses are used for wooden towers.

10 Using a car or excavator as a power source for a winch when lifting items onto towers – pulling conductor carts

It was agreed that this topic would be postponed until the next meeting. Toma promised to prepare this matter.

11 Remote-controlled cranes and radiotelephony on worksites (Karri Koskinen)

Karri reviewed a near miss from many years ago in which a radio controller had moved a radio-controlled crane. In the suppliers' opinion, this may be possible with very old cranes. It is important to ensure that this cannot happen on worksites.

Radiotelephones should be used with care, ensuring that nobody else is on the same frequency. Hand signals should be used advisedly.

According to the suppliers, this is supposedly impossible on modern cranes and, for this reason, the risk is very small on Fingrid's worksites.

12 Using personnel hoists to move personnel between different levels

It was agreed that this topic would be postponed until the next meeting.

13 Next meeting

The next meeting will take place on 28 November 2019. The venue will be announced closer to the date.

To be discussed at the next meeting:

- Changes in the contract terms concerning safety and the crystal-clear boundary project (Karri Koskinen)
- Fall protection plan at Substations (Janne Ketola)
- Use on worksites of machinery and equipment manufactured in house (Marko Elorinne)
- Using a car or excavator as a power source for a winch when lifting items onto towers – pulling conductor carts (Toma Karkkulainen)