

Summary of the investigation report

Accident case	Fatal accident at work at a transmission line site in Savitaipale
Time of accident	Wednesday 17 April 2013 at approximately 09.30 a.m.
Place of accident	Hyrkkälä, 54800 SAVITAIPALE
Summary of the accident and the investigation results	<p>The transmission capacity of the high-voltage network of the Finnish electricity transmission grid was being increased, when in May 2013, a second 400 kilovolt (kV) power transmission connection from Huutokoski, Joroinen, to Yllikkälä, Lappeenranta, was taken into use. The overhead line with an overall length of some 153 kilometres was erected along the same electric transmission corridor as the existing 400 kV power transmission line. In April 2013, during the last stages of the southern section of the connection, a 42-year-old electrician, employed by the Polish contractor, lost his life due to an electric shock while working on the power transmission line tower.</p> <p>The direct cause of the electric shock was a line terminal clamp of the temporary earthing device coming detached due to having been connected to the work object inadequately and against the given instructions. As a result of the clamp becoming detached, the disconnected line being worked on was affected by charging voltage from the adjacent 400 kV line that was being used for power transmission. The electrician became part of a circuit leading to the ground through his hands, receiving a fatal electric shock.</p> <p>Other indirect factors contributing to the course of events and the accident included:</p> <ul style="list-style-type: none"> - differing notions concerning the monitoring of safety of electrical work within the consortium co-operation; - the short-circuit-proof temporary earthing not being electrically connected to the work object
Measures proposed by the investigation team to avoid similar accidents in the future	<ol style="list-style-type: none"> 1. Those in charge must actually be involved in the assessment of work-related risks and be in close contact with the performance of the work under their responsibility. The supervisory staff must ensure that the instructions given are followed and that the agreed procedures are used. Supervision must be sufficient in all situations. 2. In electrical work carried out in Finland, standard EN 50110-1 can be applied only by observing both the basic requirements of the EN standard and the national requirements of standard SFS 6002. Numerous additions and references have been added to the national standard, and when combined with the original contents, they impair the comprehensibility and readability of the publication. 3. In recent years, several serious accidents and hazardous situations have occurred due to charging voltage during power line work. The working instructions for temporary earthing must be subjected to a risk assessment from the perspective of safety at work.

	<p>4. There must be clear action plan, employee training and the required equipment for rescuing employees working on power line supports in the event of an accident.</p> <p>5. Tukes restates the measures it proposed in the investigation report for the electrical accident that took place at the Alajärvi substation (Doc No. 13443/06/2010): attention must be paid to charging voltage as a phenomenon, its dangers, and the correct working procedures. During networked operations, the exchange of information between the operators involved in electrical work and the coordination of supervision at a shared work site must be ensured. The same also applies to all other operations.</p>
Grounds	(Finnish) Electrical Safety Act (STL 410/1996), Section 52 a
Date of the investigation report	31 December 2013
Signatures and printed names of the investigation team members	<p>Sakari Hatakka</p> <p>Timo Pietilä</p> <p>Ville Huurinainen</p>