

Quick leak detection and repair of oil cables

Asset Management & Services
Emergency Response Solutions





An exposed cable section that was inspected for defects – opened protective pipe with oil residue, but no leakage at this point.

Company and project

Enercity Netz GmbH is a wholly owned subsidiary of enercity AG. With around 1,200 employees, it guarantees a secure and efficient supply of energy via electricity and gas grids in Hanover and the surrounding area.

Pressure losses were detected in an older oil cable in the vicinity of a power plant. To get to the bottom of the matter, enercity Netz GmbH commissioned Brugg Cables to carry out an on-site investigation, leak detection, and repair measures.

The challenge

The affected copper oil cable dates back to 1958, runs from the Hannover-Stöcken joint power plant towards the Leinhausen quarter, and is approx. 500 m long. The total length of the cable route is approx. 4.5 km. The rest of the route is made up of newer XLPE cable.

Most of the cable is in public spaces, conveniently under a pedestrian path or green area that runs parallel to the road. As is to be expected in urban areas, the pipeline is overlaid or crossed by numerous other pipelines. This and the increasing heavy goods traffic in the industrial area from the VW and Conti plant locations over the past few decades has put additional strain on the cable system.

Enercity Netz GmbH detected a loss of pressure in the affected oil cable that went beyond normal seasonal fluctuations.

Brugg Cables' approach

The specialists from Brugg Cables contacted the customer before arriving on site and exchanged the relevant information about the oil cable and its route. Based on this, the first civil engineering measures were immediately initiated in order to expose the two transition joints and a connecting joint in the route. Experience shows that, in the vast majority of cases, the joints are the problem in the event of oil leakage.

The **first phase of leak detection** was initiated by the customer. The civil engineering team exposed the three joints, and enercity visually inspected them and the surrounding soil for oil leaks. However, the customer could not detect any oil leaks.

With support from the specialists at Brugg Cables, the **second phase of leak detection** now began. The entire route is divided into relevant sub-sections where possible oil leakage could be suspected, based on Brugg's experience. These sections are „frozen“ with nitrogen, and the oil pressure in this section is simultaneously increased and observed. However, the second phase did not reveal any relevant leakage either.



Brugg Cables, therefore, examined the three joints once again and was able to identify an oil leak in the first, an approximately 10-year-old repair joint. One repair seal showed leaks. The area around the seal was professionally sealed and reinforced. The pressure test after the repair showed no evidence of further relevant leaks, so the operation was completed.

The entire operation lasted over 3 weeks, repeatedly interrupted by necessary civil engineering work. The system was then set to an operating pressure of 0.9 bar and handed over to the customer with the recommendation to check the oil pressure regularly in the near future. Nevertheless, the condition of the system shows that this oil cable has needed attention since 1958. Enercity Netz plans to replace it with a modern XLPE cable in the foreseeable future. Brugg Cables is available as a general contractor for cable projects like this.

Hardware and equipment

Two experienced oil cable fitters from Brugg Cables Germany used appropriate equipment and materials for leak detection and to repair the oil cable.



The identified leakage point of the old repair joint after repair.

Customer feedback

“ Thanks to the quick and professional support from Brugg Cables, we were able to get the cable back into operation quickly. ”

Fabian Becher, electricity work management, enercity Netz GmbH

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Ein Unternehmen
der enercity-Gruppe

Brugg Cables

Brugg Cables is an innovative cable manufacturer from Switzerland that offers an extensive range of power transmission and distribution services. Established by Gottlieb Suhner more than 120 years ago, Brugg Cables is now one of the world's leading cable manufacturers. Throughout our history, our defining characteristics have been our strong customer focus and a highly skilled and professional workforce. Our emphasis has been on innovation and outstanding Swiss quality – since 1896.

Cable projects

Brugg Cables is the high-performance partner for high-voltage cable projects. From planning, production and logistics to installation and commissioning. As a general contractor, we coordinate all trades, monitor all phases and, with our experts, are the central point of contact for the customer on site.

Asset Management & Services

Our Asset Management & Services package is specifically designed for the demands of energy suppliers, transmission system operators and electricity customers in the high and extra-high voltage sector. This encompasses diverse services to ensure that the planning, construction, operation and maintenance of high-voltage cable systems is safe, efficient and cost-effective.



