



With joint forces

A fire with such wide-reaching consequences as the fire in the Blatternhaus transformer station is a rare occurrence. Also unusual was just how quickly power was restored again!

What had to be done after the fire:

The entire interior fittings in the ground floor had to be removed and disposed of.

A specialist company removed the soot in the building and from the remaining equipment.

The concrete was refurbished in the entire ground floor – it had previously been removed back to a depth of 5 cm.

For the installation of the 20 kV switchgear, a specialist company had to be sought, selected and commissioned that had the necessary engineering and project expertise and that could provide the necessary resources immediately.

All cables leading from the transformer station were to be carefully exposed and refurbished.

The aim was to connect the renewed cables to the new switchgear without an interruption to the supply.

The control systems of the 110 kV switchgear had to be installed and commissioned, including all associated fittings.

The entire information and safety systems were renewed.

The transformer station could then go back into service. The team celebrated this success together.

It was a Friday at the end of June. Dr. Michael Fiedeldey, authorised representative and head of engineering at Allgäuer Überlandwerk (AÜW) in Kempten, was looking forward to the weekend when his telephone rang: Engelbert Sommer, AÜW team leader for technical service, quickly came to the point: "There is a fire in the Blatternhaus transformer station". Fiedeldey immediately made his way to the scene. Thick, grey clouds of smoke were coming out of the closed doors and windows of the transformer station. By this time, the grid control centre, which coordinates the entire electricity grid, had already called in all fitters who could be reached for manual switching operations and had notified the crisis task force, additional grid managers and installation technicians. At 3.46 p.m., computers, telephones and lights went off in 13,222 households in Kempten and Wiggensbach, and the traffic lights also

went out in many areas of the city. The reason: 154 transformer stations that were supplied by this transformer station had gone down. So as not to endanger the firemen working on the site, all 20 kV lines leading into the Blatternhaus had to be switched off manually.

What had happened? The cause analysis carried out by Aachen Technical University (RWTH) showed that a 20 kV cable in the transformer station must have become charred – probably because of material fatigue. Heating-up then led to a series of short circuits. Finally, a portion of the cables in the ground floor of the transformer station caught fire. The approximately 1,000 degree fire melted the cables into a mass of plastic and metal. According to a probability calculation carried out by RWTH, this type of occurrence should occur just once



every 3,263 years in the AÜW grid. According to RWTH, the operator carried no culpability; all regulations had been adhered to, and all precautionary and safety measures had been taken. While the firemen were still putting out the fire, the crisis task force in the AllgäuNetz control centre was working flat out to return supply to the affected areas. The 20 kV lines were connected in such a way that a stable supply could be ensured using the four other AÜW transformer stations in Kempten.

In the AÜW administration building, the managing directors Michael Lücke and Jürgen Herrmann took care of major customers personally – companies that feared significant losses due to downtime of machines and electronic devices. At 5.35 p.m., everybody had electricity again! “Sensational,” is how Fiedeldey describes this time. “This was only possible due to the excellent local knowledge of our employees, the fast documentation and an extremely capable, high-performance team,” emphasises team leader Engelbert Sommer: “We had things very quickly under control again, as we were able to assemble enough staff members with local and technical knowledge within a

short period of time. Communications with our control centre – a critical issue in the case of catastrophes – worked perfectly.” Nonetheless, significant losses had been incurred by many companies that were not covered for a force majeure by their insurance policies. A power outage affects the Achilles’ heel of our high-technology world. An outage also demonstrates everything that depends on electricity. For example, communications: Bernd Wintergerst, team leader of the Information and Safety Technology department at AllgäuNetz GmbH: “We also rent our communication network to internet and telecommunications companies. Fibreglass cables are included in the power line ducts in many cases. This means that they had suffered fire damage too, and communication routes were disrupted right into the Augsburg area. Many AllgäuNetz technicians worked the whole weekend until everything was working again.” The sobering summary of the damage: “The 20 kV switchgear in the ground floor was completely destroyed, all system parts were covered in soot,” recalls Sommer. “The sensitive electrical components in the switchgear had to be cleaned by specialist firms.” Due to the emergency

supply, there was a continuous risk of new power outages occurring,” explains Bernd Wintergerst of AllgäuNetz: “We were under enormous time pressure. The task alone of finding a company that could plan and manufacture a switchgear of this size in such a short period of time appeared to be impossible. The normal lead time is one year,” according to Sommer. Everyone did their best. “It was only thanks to the extremely good cooperation with our partner companies that we were able to put our fifth transformer station back into service at the start of December.” On 12 December, this joint success was celebrated with a so-called ‘festival of lights’, an old tradition in the power supply sector when a transformer station is commissioned.



The full story

... about the fire in the transformer station and the work carried out behind the scenes can be read at www.allgaeustrom.de