PFISTERER press release
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PFISTERER

Universal GIS bypass solution for substations secures energy supply in the Canaries and Balearics

Winterbach, Germany – 03 September 2020 – For the Spanish high-voltage grid operator Red Eléctrica de España (REE), in an EU-funded project, PFISTERER developed and supplied a transportable universal cable system up to 132 kV for rapid use in the event of gas-insulated switchgear (GIS) failures in substations. 54 cable drums, preassembled, including all required connection components, are ready for use in 18 HQ 20' shipping containers. These turnkey, dry cable connection solutions enable bypasses in the event of a faulty GIS system as well as uninterrupted installation or maintenance of existing system components. In the final stage, the system will comprise around 30 shipping containers suitable for all existing installations and possible application scenarios on the island groups of the Canaries and Balearics.

Reliable operation of the electricity networks in the Canary Islands and Balearics is essential to supply electricity to the local population and tourist centres. At the same time, the isolated location in the sea is a particular logistical challenge in the event of system failures. Having evolved over decades, the energy infrastructure also comprises numerous cable and connection systems by different manufacturers. So the main criterion for the Spanish transmission network operator Red Eléctrica de España (REE) was that the pluggable PFISTERER solution must work for all types of transformers and GIS, regardless of the equipment's OEM or the applicable standard. REE conducted a study that identified around 30 different application scenarios in total. They wanted a solution to ensure reliable grid operations that would be as universal and flexible as possible. "Our longstanding experience with pluggable HV connections enabled us to offer a solution suited to this complex task that can be deployed rapidly in all application scenarios," explains Pedro Durán, Head of Sales Spain & Portugal at PFISTERER. To reduce complexity, all connections are based on pluggable, dry CONNEX cable connectors and dry terminations. As a result, only these components have to be kept on hand for bypass cable systems from GIS to GIS, or from GIS to air-insulated switchgear (AIS). PFISTERER then designed a seaworthy transportable container solution that is suitable for rapid deployment on the islands. Eduardo Santana, Director of the PTS Cable business unit at PFISTERER: "For requests like this, we can draw on our decades of knowledge and expertise in international projects. We develop and supply tailor-made solutions worldwide for the respective local supply structures. A multinational PFISTERER team – led by our Spanish subsidiary – created a turnkey solution for REE that fits every identified scenario."

Contact for enquiries

Gregor Vollbach
Head of Marketing and
Corporate Communications
Phone: +49 7181 7005 487
gregor.vollbach@pfisterer.com
PFISTERER Holding AG
Rosenstrasse 44
D-73650 Winterbach

www.pfisterer.com

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PFISTERER has developed a turnkey GIS bypass solution for rapid deployment in the Canary Islands and Balearics. It enables REE to secure the energy infrastructure on the isolated islands against system failures. 54 cable drums with pluggable HV connections are ready for immediate use in 18 shipping containers.

Bypass cable system in seagoing containers

The first stage of the PFISTERER cable system for REE comprises a total of 54 cable drums including EST SUB terminations with surge arrester and CONNEX plug connectors for 66 kV and 132 kV – securely stored ready for use in 18 seaworthy HQ 20' containers. Each container holds everything necessary for a particular bypass scenario in the event of faulty gas-insulated switchgear (GIS) in a substation: this includes three motorised cable drums with cable lengths of 50 to 100 m in different configurations. The containers are stackable and can easily be transported by lorry or ship – seaworthiness is important for maritime transportation between the islands. Thanks to the motor-driven cable drums, the cables can simply be unrolled at the place of use. When everything is done, they can be wound back onto the drums to be used again. Motorised doors on both sides provide optimum access in the field. A mast and lifting equipment are built into the container to enable the installation of terminations on an overhead line. "REE wanted high levels of flexibility and safety for the terminations too – our EST SUB SA dry self-supporting outdoor cable termination is the perfect choice for this," says Txús Correa, Sales Manager at PFISTERER Spain. The solution with integrated surge arrester protects the cable and the fitting while facilitating fast installation, since the surge arrester is simultaneously used as the fixing point for the termination.

Turnkey complete solution in the shortest time

As the general contractor, PFISTERER developed and delivered the complete container solution with the universal cable system, and coordinated communication between everyone involved. A temporary production site was specially set up in Spain to shorten the transportation distances, as the logistics were a challenge: 18 containers, 54 cable drums plus 4.000 m of cables were needed for the first stage, plus space to fit the CONNEX plug connectors and assemble the cable drums. These were produced to REE's specifications by a PFISTERER partner. For the full final testing of all systems and components, PFISTERER also installed a mobile HV test field on site. "With a delivery time of just a few months, the project was on a tight schedule. So logistics and workflows had to be optimally coordinated," reports Maria Gutierrez, Service Manager at PFISTERER Spain. The PFISTERER team in Spain worked in two shifts, seven days a week – with success: all containers were ready on time for shipment to their four destinations in the Canaries and Balearics.

"PFISTERER showed with this project that the company also meets the highest requirements as a provider of complete solutions. Everyone involved worked very closely together, and as a result, we received a unique solution to secure our island infrastructure," says Juan Carlos Sanchez, Canary Islands Project Director at Red Eléctrica de España (REE). PFISTERER's experts are available to assist and train fitters on site for the first deployments. PFISTERER has also produced a detailed, easy to understand manual in Spanish for local fitters, with lots of diagrams and drawings.

About PFISTERER

PFISTERER is a leading independent manufacturer of cable fittings, insulators and overhead line accessories for sensitive interfaces in energy networks. The Group is headquartered in Winterbach, near Stuttgart in southern Germany. PFISTERER develops, produces, and sells internationally successful solutions for 110 V to 1,100 kV voltage levels. With its end-to-end range of products for application in energy networks, consulting, installation, and training, PFISTERER is a valued partner to companies specialising in power supply, plant construction, and electrified rail transport around the world. PFISTERER operates production plants in Europe, North America and South America, as well as sales offices in 18 countries across Europe, Asia, South America, and the USA. The Group employs around 2,100 people.