SGC -SwitchGear Company delivers sustainable electricity solution for SKAO project



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[Landegem, 01/01/2024] - SGC -SwitchGear Company, a family-owned company and leading specialist in medium-voltage switchgear, is proud to announce that it has been allowed to collaborate as a medium voltage switchgear supplier on the SKAO project through our Australian partner NHP. The SKAO is building the largest and most capable radio telescopes on behalf of the international community. The telescopes are being built in Australia and South Africa.

About SGC

SGC is an innovative company focusing on sustainable medium voltage solutions. As the only Belgian manufacturer of medium voltage switchgear, we stand for high quality, durability and operator safety. Our tailor-made solutions are applied in various projects worldwide.

Part of the family group Het Veer, a holding company with several companies, SGC was demerged in 2010 from Deba which was founded by Rik Vandoorne in 1979. With more than 40 years of experience in manufacturing medium voltage equipment ranging from 3 kV to 36 kV, we have built a proven track record. Our production, located in Landegem, Belgium, features a specialised manufacturing unit and advanced, highly automated production lines. These form the core of our "state-of-the-art" components and systems, enabling us to develop products such as DF-2, DR-6/DT-6, DF-3 and DW-2 to the highest quality standards.

With an annual turnover of 15 million euros and a team of 30 dedicated employees, we continue to strive for excellence at every stage of our production process. Our commitment to innovation and quality positions SGC as a reliable partner for sustainable medium voltage solutions worldwide.



DF-2 switchgear project in Australia –QUU Oxley Creek – october 2016 © SGC

NHP

With our partner NHP, we also cater to the needs of customers in Australia and New Zealand.

NHP is a company with more than 55 years of experience in the electrical and engineering industry, with more than 20 branches in Australia and New Zealand. They understand the specific needs of their clients' projects, regardless of their size, thanks to their local presence and commitment. By choosing NHP, you gain access to a wealth of expertise in electrical and automation products, systems and solutions.

Although they have more than 20,000 product lines on the market, they are more than just a supplier of products. Together with their extensive network of global partners, they offer choice in products, technology, service and support, as well as choice in how you interact with them, whether in person or online, when and where you need it. NHP achieves annual revenues of \$550 million Australian dollars, supported by a team of 800 dedicated professionals who work hard every day. The commitment to lasting customer relationships is evident in our successful and decades-long partnership with NHP.

The SKA-Low telescope project

The SKAO is an advanced Big Data facility in radio astronomy that brings together countries worldwide. Its goal is to build and use advanced radio telescopes to transform our understanding of the universe. With headquarters in the UK and telescopes in South Africa and Australia, SKAO will become a leading research infrastructure for radio astronomy. Global collaboration and innovation will provide scientific opportunities for the international astronomical community, making SKAO a key player in advancing knowledge about the universe for decades to come.

Construction of telescopes on site began in December 2022 in Australia and South Africa. The SKA-Low telescope, on Wajarri Country in Western Australia, will comprise more than 131,000 twometre-tall antennas detecting low frequency radio signals, and the SKA-Mid telescope, being built in the Karoo in South Africa, will comprise almost 200 dish-shaped antennas picking up higher frequency radio signals.

The SKA telescopes will be built, maintained and operated on behalf of the global community, and will look back in time billions of years to solve many mysteries of the Universe. The project includes the construction of two powerful supercomputers and is expected to be completed in 2028, with a total cost estimate of €1.3 billion.



Source: SKAO, 2023.

Sustainability "Built to Last"

The medium-voltage panels that will be installed in Australia are of the DF-2 type and are manufactured with a strong focus on sustainability. This product range is specifically designed to operate long-term and efficiently, which is crucial for a project of this size. The decision to partner with SGC highlights the SKAO project's commitment to an environmentally friendly and future-proof approach.

One unique requirement of the SKA-Low telescope is for all installed electrical equipment to produce very low levels of electro-magnetic noise emissions. The advanced design and robust construction of the DF-2 range produces very low electrical partial discharge levels making them ideal for use within the SKA-Mid telescope facility site. It can often get very hot in the outback, but our DF-2 switchgear can be exposed to high temperatures and withstand extreme weather conditions.

Longevity is an important feature for us. Our standard DF-2 line is produced according to the IEC 60932 §4 standard. This non-mandatory, additional requirement of the International Electrotechnical Commission (IEC) for standard material covers intensive climatic conditions according to method A level 2. This includes a cycle every 4 hours, where conditions vary between 30°C with 80% humidity and 50°C with 95% humidity. The total duration of this cycle is 9 days. Hence our well-known motto "built to last".

Arc Killer for safety

Safety is paramount. The equipment will have an Arc Killer option, which not only protects the plant itself, but also ensures operator safety. Our Arc Killer is a device that prevents or stops electrical arcing. These sparks, which can occur when switching power, can cause fire and damage. The Arc Killer quickly detects and suppresses lightning within 48 milliseconds, which is 8x faster than the blink of an eye. Our electric arc reduces risks, protects electrical systems and thus contributes to a safe working environment, which is crucial for this project.

SGC and NHP: reliable partners for the SKAO project

SGC is delighted to play a crucial role in the SKAO project. By providing reliable and sustainable energy, we support the scientific community in gaining insights that will further enhance our knowledge of the universe.

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