REFERENCE CASE STUDY

Industrial UPS first for ABB at major local petrochemical company

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When a major petrochemical producer in Mpumalanga required an industrial UPS solution, Proconics selected the PowerLine DPA 20-120 kVA modular three-phase UPS system from ABB in South Africa. Many industrial sectors such as petrochemicals cannot afford any production downtime due to electrical power failure or disturbances. Not only does this require a complex and costly restart, but expensive end product is ruined. Equipment may also be damaged in such instances, which also raises health and safety concerns.

“The main issue for such sectors is that a reliable supply of clean power cannot be guaranteed by the grid. Thus, the petrochemical industry, for example, must take proactive measures to safeguard itself against such outcomes and protect their mission critical systems by the most reliable power supplies,” explains Ivor Becks, ABB Sales Specialist for UPS Systems, Southern Africa.

Already a major supplier of electrical equipment and control gear to the petrochemical producer, this marks the first time that ABB South Africa has also been required to provide an industrial UPS solution. The PowerLine DPA from ABB is an online double conversion UPS that allows for the application of modular architecture in industrial environments that are typically very harsh on electronic equipment. It is based on ABB’s Decentralized Parallel Architecture (DPA) for benchmark UPS design in terms of availability, flexibility, cost and ease-of-use.

Industrial plant environments pose specific design challenges such as high temperatures, dust, moisture and corrosive contaminants. Therefore, the PowerLine DPA from ABB features a 15-year design life for maximum reliability and uptime. Each module has all the hardware and software necessary for autonomous operation, from rectifier to inverter, battery charger, static bypass switch, back feed protection, control logic and HMI mimic display for control and monitoring.

The modular nature means that a single module's output is unaffected by failures elsewhere in the UPS, as the load is simply taken up by the remaining modules. "In other words, what ABB has achieved is a true multi-module system that is totally fault-tolerant, as there are no single points of failure," highlights Becks.

Another major benefit is that the modules can be swopped online, meaning they can be removed or inserted without having to power down or transfer to raw mains supply, which removes any risk to the critical load. This allows for continuous uptime and reduces mean time to repair (MTTR) failures significantly. Less spare parts must be held in inventory, which also simplifies system upgrades.

Modularity also relates directly to serviceability, as local personnel do not need specialized skills and spend less time on-site as a result, which helps to reduce the risk of any production loss. The PowerLine DPA at the petrochemical producer is expected to be commissioned by end 0ctober this year.

Proconics executes projects to improve and extend the life of factories, mostly on an EPC basis. While ABB also offers complete turnkey solutions, it often partners with specialist service providers to ensure its diverse client base receives the best solutions possible for their specific requirements. Becks regards the supply of the industrial UPS as a major coup in the Petrochemical sector in Africa, due largely to its reputation for innovative and quality solutions.

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