

Article

Power protection for Royal Danish Navy warships



From left Dennis Singh, electrical officer of the Naval Base Korsoer and Bent Jorgensen, electrician of the Naval Base Korsoer

Power protection now ensures a steady voltage to the shore power station at the Naval Base Korsoer in Denmark, where the inrush current from three large frigates previously caused the network to drop out.

From the time a new warship leaves the yard, right up until it is taken out of service after many years of dedicated work, the power is in principle never switched off. The components of the large radars and other high-tech equipment require constant power supply and cooling. Therefore, all electrical shutdowns of the equipment are only conducted according to prescribed procedures.

The Danish Navy has made use of the shore power station for many years, but the three new frigates with their huge cooling compressors caused power failures to the shore power station at the naval base. "When a frigate like Iver Huitfeldt is restarted it can take two men two to three hours and after a number of interruptions to the power supply, components can become damaged" says Dennis Singh, Electrical officer of the frigate Iver Huitfeldt.

The naval station has now installed ABBs PCS100 reactive power conditioner (RPC) which is able to respond instantly to power quality events, while providing continuous reactive power correction. As a result, the problem has now been solved. "We have a constant voltage of 450 volts, and it does not change, regardless of consumption" emphasizes Dennis Singh.

Keeping peace with the neighbors

The frigates have an average of 120 to 150 sailing days with the rest of the time being spent in port. If they were to operate their own generator, the fuel cost would be extremely expensive and require far more maintenance, therefore for financial reasons this has been avoided. In addition, such large diesel engines are exceedingly noisy resulting in a number of complaints from residents of a new apartment block situated in the harbor. However, the neighbors can now enjoy beautiful sea views without experiencing noise pollution and the Naval Base Korsoer has a shore power station that works consistently and is future-proof, a win for all involved!

“The other day there was a power failure throughout the town of Korsoer, but we were able to start up again without problems” says Bent Jørgensen, who is the electrician at the Naval Base Korsoer.

General problem

Production plants, warships and many other facilities are confronted with a number of disturbances, from distortion of supply voltage, to harmonics and high inrush currents. An unstable supply can result in downtime, and either reduces the life of expensive electronic equipment or causes damage to it.

For that reason, ABB sees a great demand for the PCS100 RPC which is available from 100 to 2000 kVA and responds instantly to power quality events, while providing continuous reactive power correction.



PCS100 Reactive Power Conditioner (RPC)

To find out more about ABB's power protection solutions:

Web: www.abb.com/ups

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