

Motor Condition Monitoring – Advanced

Increasing supply security through continuous monitoring

Customer

GDF SUEZ Energie
Deutschland AG

Location

Power plant in Zolling,
Germany

Project/system

Monitoring the main coolant
pump drive

Implementation period

May 2012 to February 2013

Scope of goods and services

Implementation of the motor
condition monitoring box

Online condition monitoring
of the main coolant pump
drive

The challenge

The state-of-the-art coal-fired power plant in Zolling, in the Freising District of Upper Bavaria, operates at a capacity of 472 MW, supplying electricity to about 1.7 million people on average every year. Since 1988, generating unit 5 has also been able to supply district heating from combined heat and power (CHP) to up to 20,000 four-person homes in the Freising region every year. With an efficiency of 43.3 percent, the site is one of Europe's most efficient coal-fired power plants, with some of the world's lowest CO₂ emissions. Reliability and supply security are especially important to plant operator GDF SUEZ Energie Deutschland AG, which it has been making ongoing investments in the maintenance of the plant and its equipment.

GDF SUEZ was searching for an appropriate solution for two medium-voltage motors, each with a 1,600-kW capacity, which play a crucial role in supplying the main coolant. Because strong vibrations have been occurring on the NDE side in one of the motors ever since its commissioning, the bearings in both motors have been periodically replaced as a precaution in order to avoid unscheduled downtimes.



The solution

With Motor Condition Monitoring Advanced, Siemens offers a unique solution for monitoring the condition of motors. GDF SUEZ's motors were each provided with a condition monitoring box, which measure rotational speed as well as vibrations in the DE and NDE bearings during operation. The boxes make it possible to monitor all critical parameters, and the measured values are available for trend analyses and other evaluations.

“The Zolling power plant bears enormous responsibility for the region’s people and their environment. To carry out this responsibility reliably and safely in the future, we need a strong and reliable service partner.”

Lothar Schreiber, power plant manager with GDF SUEZ Energie Deutschland AG



After a long period of undisturbed operation, the documented trend curves show significant changes due to wear or other damage-related causes – so foreseeable problems can be corrected as they arise and before severe damage or even a plant shutdown occurs.

If one of the parameters increases, maintenance employees are automatically alerted. The measured and recorded data make it possible to assess the bearings’ condition and therefore to determine the maintenance interval in keeping with actual requirements.

The benefits

By installing and operating the motor condition monitoring box, GDF SUEZ was able to significantly lower its service and maintenance costs for the two drives. At the same time, it maximized system availability and reliability, which had a positive impact on the availability of the entire power plant. By scheduling condition-related maintenance work, the operator was also able to prevent unscheduled outages, which benefited the environment. After all, not only does every power plant startup cost money, but the plant also operates relatively inefficiently during the startup phase, and the resulting combustion gases pollute the environment.

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