

Ready, Set, ...Go!

Monitoring helps Seabank Power Station meet customer demands at a moment's notice

Seabank Power Station near Bristol, England, generates power when needed, and has its 1,140 MW of electrical capacity ready to deliver within minutes after it receives a request. Equipment readiness is key to meet this demand on short notice. That is why Seabank Power Station utilizes OMICRON monitoring systems to continuously assess insulation condition in order to make sure that its generators and transformers can perform reliably.



No time for downtime

"Equipment breakdown and maintenance periods detract from the availability of the power station, so minimizing them is very important to us as a business," says James Hill, electrical control and instrumentation engineer, Seabank Power Station. "That is why we invest in the testing, maintenance and care of our electrical equipment to ensure its readiness when required."

"It is vital for us to identify any developing problems early so that we can take corrective action during planned maintenance periods," explains James Hill.

"However, the time required for us to prepare our plant for off-line testing, to perform the tests and to return the plant to service takes valuable time when we are trying to keep planned outages short," James Hill clarifies. "That is why we also utilize on-line monitoring systems to potentially increase the length of time between off-line tests, while maintaining a low level of risk since these on-line systems continuously show us equipment conditions."

State-of-the-art technology

"We added on-line partial discharge (PD) monitoring systems to our generators

and generator step-up transformers back when the power station was originally built and commissioned in the late 1990s," says James Hill. He explains that technology has advanced since those systems were first installed. "We eventually decided to replace our aging monitoring systems with state-of-the-art technology, which is supplemented with expert analysis and reporting."

"For a number of years now, we have used OMICRON systems for our off-line testing, primarily the MPD 600 for partial discharge measurement and analysis," says James Hill. "The prospect of being able to have the same advanced technology and clarity of data in an on-line monitoring system was quite appealing to us, so we decided to go in this direction," he adds.

Seabank Power Station now continuously assesses the insulation condition of its generators and generator step-up transformers with on-line monitoring systems from us.

One interface for multiple assets

"We access the monitoring data for all of these assets using the same remote web user interface," says James Hill. "Live data and recorded trends can be viewed for each monitored asset over this one interface. We ▶

«It is vital for us to identify any developing problems early on, so that we can take the necessary corrective action.»



James Hill

Electrical Control and Instrumentation
Engineer, Seabank Power Station

can also compare monitored parameters across multiple assets," he adds. "With our previous monitoring systems, we were not able to see and compare the data to the extent that we can now."

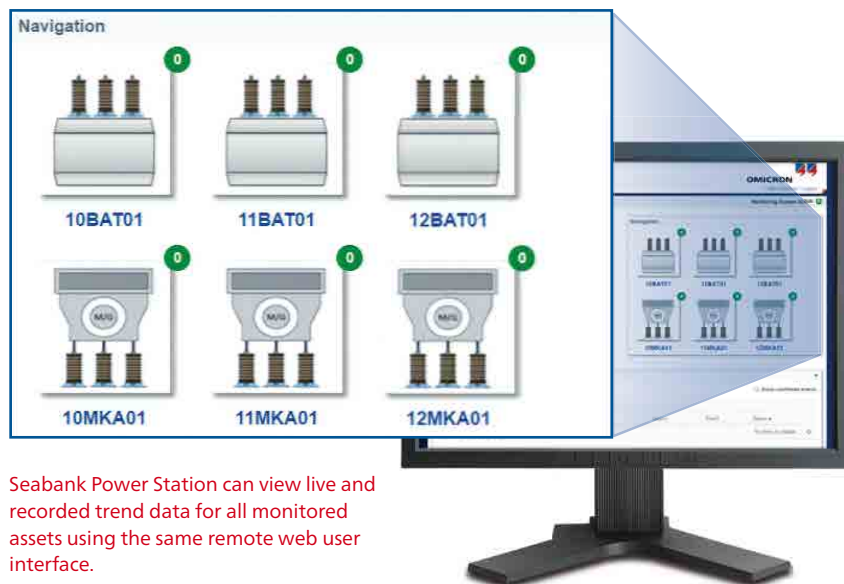
Clear technical advantages

"There is quite a lot of electrical noise in our plant, which results in a challenging measurement environment," James Hill explains. "With our generators, it was always hard for us to differentiate between noise and PD data. Now by using the MONGEMO synchronous multi-channel PD monitoring system with on-line 3PAR analysis, we can get rid of that noise quite easily and see the true PD in the machines. This is a big benefit for us," he says.

James Hill adds, "Since no condition monitoring system is an island on its own, we were also very keen to work with OMICRON to combine data from third-party systems for a more complete overview of electrical conditions. As a result of this collaboration, our OMICRON monitoring systems will have a seamless integration with third-party sensors, other monitoring systems and SCADA systems," he says.

Trouble-free installation

Our monitoring systems were installed in two phases during planned maintenance outages at Seabank Power Station. "We did the second installation and commissioning completely by ourselves because of the limited time available during the outage," recalls James Hill. "I had a remote training session with the OMICRON team and they gave me a rundown of all I needed to know, so installation was completely trouble-free." 🚩



Seabank Power Station can view live and recorded trend data for all monitored assets using the same remote web user interface.

Seabank Power Station

Seabank Power Station is a 1,140 MW combined cycle gas turbine (CCGT) type power station located near Bristol, England. The power plant provides enough electricity for approximately 1.6 million people.

- > Construction began: 1996
- > Construction completed: Seabank 1 (2000), Seabank 2 (2001)
- > Operator: Seabank Power Limited
- > Type: Combined cycle gas turbine (CCGT)
- > Energy type: Natural gas
- > Installed capacity: 1,140 MW
- > Monitored equipment: 4 generators and 4 generator step-up transformers
- > Location: Hallen Marsh near Bristol, England

