Background

Trust is good, monitoring is better

Systemic monitoring of high-voltage equipment

By deciding to found the 'Monitoring' business area, OMICRON has made a significant step in the direction of project and system business. The monitoring team at the new Berlin site in Germany focuses on the development of innovative solutions for continuous monitoring of high-voltage equipment. These solutions are specially tailored to fulfill the requirements of international customers.

Experts in action around the world

PLN (Indonesia)

PLN is Indonesia's state-owned energy supply company. Around 25 percent of the energy required is produced in oil-fired power stations. However, this should fall considerably in the coming years. In the first half of 2011, 88.2 TWh of energy was produced. PLN has around 50 000 employees.

www.pln.co.id

On islands in the Indian Ocean...

As in other parts of the world, the energy market has been deregulated in Indonesia. Therefore, the state electricity company PLN must now compete with private providers. Stability and reliability are important criteria for power grids. In conjunction with OMICRON, the PT PJB subsidiary on Java (Indonesia) planned a PD monitoring system for 21 generators at four different locations to ensure that these criteria are met. The project was successfully completed in December 2012 and PLN were presented with a modern monitoring system. Since then, 21 generators have been monitored using OMICRON monitoring systems.

Power plants on Java (Indonesia).

OMICRON has been operating a research and development site in the capital since 2006 and in 2012 it was developed into a full service center. The acquisition of the new space created the necessary conditions for the ambitious plans. At the Berlin site, the current team of 35 employees is developing testing systems for the permanent monitoring of generators, transformers, and high-voltage cable systems. These systems aid in the prevention of costly failures and dangerous defects. In order to develop this business area, an entire organization had to be set up in which many different departments had to work together. It included specialists from Development, Project Management, Project Sales, and Customer Project Development all the way through Logistics and Customer Services.

Costly damage due to partial discharge

In order to ensure safe and reliable energy supply, the insulation status of high-voltage equipment must be monitored continuously. Even a small inconsistency in the insulation can lead to partial discharge (PD) and considerably reduce the service life of the asset. The result is often unexpected power failures, which are associated with high costs.

Customized product range

OMICRON PD measuring technology is already used in various fields, such as quality assurance and commissioning of generators, motors, switchgear systems, and high-voltage cable systems.

... and in mountainous Switzerland

The Grande Dixence dam lies in the Swiss canton of Valais. The comprehensive power plant complex also includes the underground Bieudron power station. This was built between 1993 and 1998 at a cost of CHF 1.3 billion (€ 1.1 billion/$ 1.4 billion) to further increase the production capacity of the plant. The power plant houses three Pelton turbines with a total power of 1 269 MW.

HYDRO Exploitation SA is a service provider that specializes in the operation and maintenance of hydroelectric power plants, and also looks after the Bieudron power plant. OMICRON carried out test measurements on one of the generators at Bieudron. HYDRO Exploitation SA were impressed by the ease with which the measurements were made and the additional advantages of the OMICRON PD monitoring system. The company opted for the mobile OMS 605 PD measuring solution, which has since been successfully implemented for monitoring the power plant generators.

HYDRO Exploitation SA (Switzerland)

HYDRO Exploitation SA is a service provider that specializes in the operation and maintenance of hydroelectric power plants.
The company's customers own 22 % of the installed power plant capacity in Switzerland, whereby 56 % of the energy is produced using hydropower. Today, HYDRO Exploitation SA has more than 500 employees. The Bieudron power plant is particularly impressive as it holds three world records for a head of 1 883 meters, a 423 MW output per Pelton turbine, and a 35.7 MVA output per pole of its AC generators.

www.hydro-exploitation.ch

Grande Dixence dam (2 365 m).

The new PD monitoring system solutions can be used to provide important insights into the life expectancy of systems. Damaged areas can be detected before costly secondary damage occurs. This ensures reliable system operation and cost-effective maintenance. The monitoring solutions from OMICRON are optimized for monitoring high-voltage equipment. The systems record partial discharge phenomena and thereby the status of the insulation at the critical points of a high-voltage system in real time. To do this, extremely precise sensors tailored to the system and synchronous data acquisition with several channels is used.

Close to the customers

The proximity to long-standing partners and key clients was a decisive factor in investing in the new Berlin site. In addition, this thriving German metropolis provides OMICRON with excellent opportunities for further development in an outstanding science and technology environment. This also guarantees the development of innovative solutions in the future, such as those already used extensively for monitoring generators, motors, and cables in Europe, Asia, and the USA.

News

OMS 605

The robust data acquisition system OMS 605 is a mobile addition to OMICRON's fixed monitoring solutions OMS 600, OMS 800, and OMS 840.

The system features a variable power supply which thereby enables temporary or periodic, yet long-term observation of partial discharge phenomena in the field. The data obtained can then be analyzed, visualized, evaluated, and managed using modular, adaptable, and user-friendly software solutions. It offers a variety of adjustment options and filters. Data comparison ensures that changes to the condition of the insulation are detected reliably and appropriate measures can be initiated.

www.omicron.at/oms605

OMS 605

- 3 + 1 PD channels for synchronous data acquisition
- Data processing in real time
- Robust and mobile for testing in harsh environments (IP65)
- Unique options for separating sources of interference (3PARD/3CFRD)
- Numerous filter and gating methods