

REMOTE MONITORING OF EDF'S THERMAL & HYDRO POWER PLANTS

By Jean-Christophe Licheron, EDF



Jean-Christophe Licheron from the DTG engineering unit of Electricité De France (EDF), explains how they use OPENpredictor™ for remote condition monitoring of power plants in France and abroad.

DTG is an engineering unit within the EDF Group, which provides support for the group's electricity producing operations (hydraulic, nuclear and thermal power plants) and also for external electricity operators, local authorities and government organizations in France and abroad. The team's main tasks cover three areas: measurements, diagnosis

and expert assistance. DTG is specialized in the fields of hydro-meteorological forecasts, monitoring of engineering works, thermodynamic performance, electric materials, mechanical behaviour, environment and topography. Besides providing operational support, DTG also contributes to three other essential areas related to power production: safety, productivity and environment.

E-monitoring supports operations

E-monitoring is a special condition monitoring service offered by DTG. Thanks to dedicated tools and a

specialized organization, DTG is able to assist the group's power plants in anticipating future degradation of monitored machines and thus to execute condition based maintenance.

In 2004, EDF's research and development organization chose the OPENpredictor™ system for monitoring of the vibrations of the major rotating machinery at various power stations. The first installations of the OPENpredictor™ system were carried out on gas turbines (Norte Fluminense in Brazil and Saltillo in Mexico) and on steam turbines and other large components such as pumps and fans on the power stations of Suez and Port Saïd in Egypt.



Remote diagnosis

Since 2005, DTG has also acquired several portable OPENpredictor™ condition monitoring systems, used on EDF's power stations in France. These mobile systems, installed temporarily at different sites, make it possible to

- identify certain non-reproducible phenomena
- carry out vibration monitoring on key components without

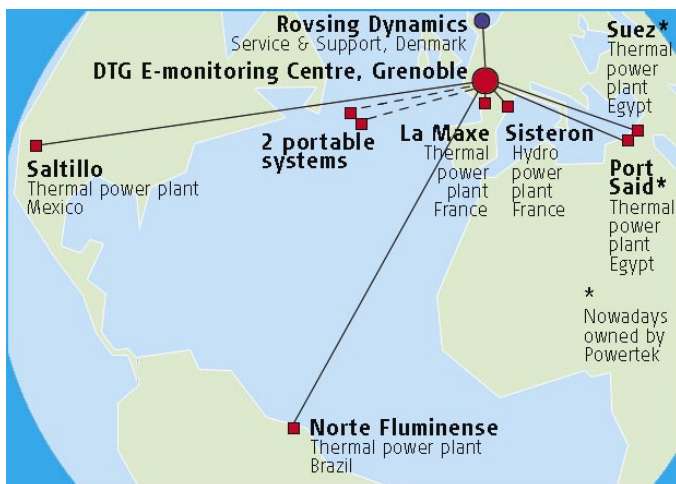
interrupting their operation

- monitor the development of specific phenomena and anticipate their further development until the next planned maintenance stop.

The cooperation and regular interaction between EDF DTG and Roving Dynamics allow a continuous development and adaptation of the monitoring tools for continuous progress in the area of detecting and predicting faults on rotating machinery.

Support for maintenance planning

The experience gained these recent years shows that the OPENpredictor™ system fulfils EDF's needs for vibration monitoring of the rotating machinery of its power plants. Moreover, the possibility of installing the system on a permanent as well as a temporary basis, using portable systems, makes it possible to utilize these systems on a wide variety of machinery components on hydro, thermal and nuclear power plants. On the basis of measurement data transmitted automatically and daily to DTG, regular trend analyses and alarms emitted by the OPENpredictor™ systems enable DTG's expert team to assist the group's power plant operators in their planning of future maintenance activities.



- OPENpredictor™ systems at EDF's power stations enable the e-monitoring staff to provide the plant operators' with remote expert diagnostic support