



The Proficy SmartSignal Shield software sends e-mail notifications to users with information about impending failures, the apparent cause of the failure and the priority of the impending failure.

Equipment Monitoring Eases Maintenance

GE Intelligent Platform supplies energy provider with monitoring software

➤ Constellation Energy, Baltimore, Maryland, U.S.A, a supplier of energy products and services to wholesale and retail electric and natural gas customers, is upgrading its high-capacity power generation fleet with GE Intelligent Platform's Proficy SmartSignal monitoring software. The order follows the January acquisition of SmartSignal by GE Intelligent Platforms.

This isn't Constellation's first installation of SmartSignal's monitoring software. In 2008 and 2009, the energy company installed SmartSignal's Epi-Center monitoring software on five plants, including coal, combined cycle and combustion turbine. After success in receiving early warnings of several hundred equipment problems, aiding Constellation in increasing reliability and reducing maintenance costs, the company laid out a three-phase project to install SmartSignal

Shield and Cycle Watch software on its fleet of fossil fuel plants.

The program includes deployment of the Shield software within the five plants already equipped with Epi-Center; deployment of Shield in all additional plants in the Constellation high-capacity fleet; and deployment of the Cycle Watch software on all 21 combustion turbines across the fleet.

The software enables operators to schedule work as needed, reducing unnecessary maintenance time and preventing small failures from turning into larger problems. It can be installed on pumps, fans, turbines, compressors and heat exchangers and detects problems related to bearings, vibration and performance degradation.

The SmartSignal Shield predictive diagnostic software features diagnostic algorithms that combine observations on multiple individual sensors

to pinpoint failure effects. A fault priority is assigned based on the number of deviating sensors and the degree of that deviation. The Shield software is written to not only predict equipment failures, but also to find the cause of a failure.

The CycleWatch software was developed specifically to monitor starts in combustion turbines. It analyzes the variable conditions of start-ups and detects subtle deviations that are visible only to high-stress and transient conditions. During the start-up cycle, CycleWatch is programmed to determine when thermocouples begin to drift, fuel valves begin to act up and nozzles begin to plug, in addition to indicating low temperatures from contaminated fuel.

CycleWatch is also designed to provide advanced notice to prevent a compressor stall; and when vibration at critical frequencies increases, the program allows operators to address bearing, coupling and casing issues during the next scheduled maintenance, preventing problems from getting more significant in the future. 🐼