The task

In the past monitoring the state of components and processes meant relying on systems which offered only limited capabilities despite complex engineering. Transient processes, for example, could not be covered due to slow processing speeds, excluding any genuinely continuous monitoring and analysis of operating behavior. Fast processing speeds and low engineering costs became the focus of new developments.

The solution

Through asset diagnostic technology, Anomaly Monitor provides deep insights into the conditions of plant assets and consolidate relevant information on fleet-wide monitoring screens. Anomaly Monitor uses machine learning algorithms to train the normal behavior of an asset or process from historical data of related measurements. For each asset to be monitored, one or more data based models can be created and trained. After models have been trained and learned the normal behavior of the respective asset, new measured data gets continuously compared with what is expected based on the training data. This happens within reasonable cycle times, normally in the seconds range. Consequently, the user is informed extremely fast in the case of any deviations from the normal values.

The unique operating and alarm concept of Anomaly Monitor is fully supported by any kind of DCS and historian.

Siemens Anomaly Monitor, part of the Omnivise Digital Services portfolio is a system for continuous monitoring of one power plant or a whole fleet in steady-state and transient operating condition. Early detection of faults prevents machine failures and avoids high repair costs.

Detailed information on the deviation itself as well as on related parameters enables further analysis and decision making (e.g. on change of operating mode or subsequent maintenance measures).
Anomaly Monitor enables real condition-based maintenance. Due to comprehensive, reliable monitoring repairs can be restricted to those that are absolutely necessary and spare parts can be ordered in time. Repairs can also be shifted to scheduled downtimes. Thanks to early warning on abnormal plant behavior maintenance and repair activities can be scheduled. Furthermore the operation mode can be optimized to minimize stress on machines and components.

Optimized, more targeted and truly condition-based maintenance improves plant economy and leads to a longer service life of machinery and components.

The benefits at a glance
Anomaly Monitor allows you to:
- Avoid unscheduled shutdowns
- Increase plant availability
- Avoid high repair costs
- Schedule long-term repairs

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