Sound decisions for the future through topical reports

SPPA-M3000 Business Performance Monitoring

is an IT-solution to support business decisions on the management level. It provides consistent, role-based, real-time information on the current business performance of the power plant. It is part of the SPPA-M3000 Energy Management Suite and consists of the modules “Technical, Maintenance and Business Reporting” and “Key Performance Indicators”.

The Task

The unbundling of trading floor on the one hand and grid and generation business on the other hand was accompanied by an optimization process for generation companies targeting cost reduction. Over the same period the need for greater flexibility to increase competitiveness became evident. In the course of this process, energy providers acquired production assets (power plants) at various sites and in different countries. These facilities usually rely on non-uniform reporting and decision support systems.

Central business decision making demands centralized, real-time and uniform monitoring combined with integrated analytical functionalities across the entire fleet. Current optimization strategies to cope with this challenge are either focused on business management relying on ERP systems or on plant operation relying on the DCS system. The challenge is to bridge the gap between the two worlds of commercial and technical systems in order to optimize the fleet’s overall performance.

Our Solution

SPPA-M3000 Business Performance Monitoring integrates information from various systems and provides topical, structured and comprehensive reports from which forecasts can be derived. This enables the Siemens solution to support decision-makers and performance controllers on fleet or plant level with reliable data in a compact form. It provides the information needed to come to a sound decision – on a technical or commercial basis – to optimize revenue in the respective area.

All information stems from integrated data generated from various systems, such as the DCS, other technical systems and the ERP system. Reports are delivered promptly and to the responsible personnel to whom they are made available on a standardized screen. Based on best practices from our many projects, a set of standard screens and more than 50 Key Performance Indicators (in accordance with the requirements of NERC and VGB) are included. In combination with the optional prognostic tools for Maintenance and Economic Dispatch Business, Performance Monitoring enables forecasts on future economic figures. The user is thus informed about the impact of each upcoming decision on business performance.

Answers for energy.
The Modules

Technical, Maintenance and Business Monitoring

Functionality overview
- Multi-level reporting and trending so that people can gain instant views of operations they need to monitor and easily drill down for more information if something requires attention
- Current, YTD and forecast figures for business-related information to make the right decisions. Combining technical data, maintenance information and financials
- One common, transparent data source for all personnel
- Allows analysis of details because relevant data is recorded immediately
- Management are alerted to items that require attention based on what the business deems critical. More time is spent on the most important improvements.

Seamless ERP integration, showing financials and maintenance work.

Combining those views with prognosis gives a picture of the future.

Drill Down: From the fleet overview to the corresponding screen and from there to the individual KPI

Key Performance Indicators

Functionality overview
- The module is capable of monitoring the performance of electric generating units and major plant components and also reports the key plant performance indicators. Its operating mode is based on two prominent standards:
  - The North American Electric Reliability Corporation’s (NERC) standard described in the Generating Availability Data System (GADS) which includes the Institute of Electrical and Electronic Engineers’ (IEEE) Standard 762, “Definitions for Reporting Electric Generating Unit Reliability, Availability and Productivity”
  - The VGB standards (Teil B: Elektrizität und Fernwärme, Heft 3: Grundlagen der Systematik der Verfügbarkeitsermittlung für Wärmekraftwerke)

Data sourcing
The underlying basis for all these calculations are documented events from generation or maintenance work. The input can come from an external data source via ODBC, OLEDB or csv file or it can be directly drawn from the Load Capability, Availability & Events Module of the SPPA-M3000 Energy Management Suite.

Implementation & Use
By choosing suitable Key Performance Indicators and defining appropriate value limits, business strategy can be controlled efficiently. Siemens helps with identifying the appropriate Key Performance Indicators and provides support during their implementation in the power generation company.