ANDRITZ Hydro

Power Plant Management

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Power Plant Management

Schwarzach-Wallnerau, Austria

Your goal

Both single power plants and power plant cascades have to maximize their energy production and minimize their costs. Modern power plant management systems must handle these tasks safely and efficiently.

In addition to the plant's operational requirements (e.g. maintenance cycles), global influencing factors (water resources management, electricity supply contracts, environmental regulations, and so on) must be taken into account. For the purposes of resources planning, a forecast is needed, as well as optimization modules.

All this information must be available to other (commercial) applications via standardized interfaces. These highly diversified requirements need an overall concept with a modular structure.

In addition to maximizing energy production, the plant management system must provide optimum support to the operating personnel under all operating conditions (normal operations, high water, and breakdowns). At the same time, the operating and maintenance costs have to be reduced to a minimum.

Building on the existing infrastructure, it must be possible to integrate the system easily into the power plant's environment.

Balambano, Indonesia

Braunau-Simbach, Austria

Strategic products

SICAM 1703 ACP
The SICAM 1703 ACP automation and control system meets all the requirements of modern power plant process control. State-of-the-art 32-bit multiprocessor technology provides a powerful basis for both centralized and decentralized control concepts. Optimum redundancy concepts guarantee highest availability of important process functions.

CAEx plus
CAEx plus is a graphical user interface for programming according to IEC 61131-3 that features easy operation and user-friendly programming.

HyNET
The HyNET product line forms the basis of safe communication inside and outside the power plant. At the same time, it clears the way for entirely new solutions through Internet/Intranet connections.

250 SCALA
The 250 SCALA product line provides all the features of a modern SCADA system for monitoring and controlling all of the technological processes.
At the same time, it enables integration of higher-order functions (such as projections and scheduling).

TOOLBOX II
By using the latest software, particularly for decentralized configurations, the TOOLBOX II product line provides optimum support to project management and service personnel. The main focus here lies on efficient concepts for data management, integrated project management, and comprehensive system diagnosis. The logic and control applications are compiled in TOOLBOX II with CAEx plus. This efficient tool satisfies every need with its fully graphical interface and intuitive operations, requiring only brief job training and minimizing the amount of instruction required.

Software application
By applying international standards, we are able to use a wide range of different software applications. This applies both to customer-specific applications and to standard software (MS Office packages).

Product range

The comprehensive solution

Typical tasks

Power plant control
- head water level control
- discharge control
- active power control
- reactive power control

Official and environmental protection requirements
- downstream water flow limits
- filling and discharging gradients
- water level limits
- flood alerts

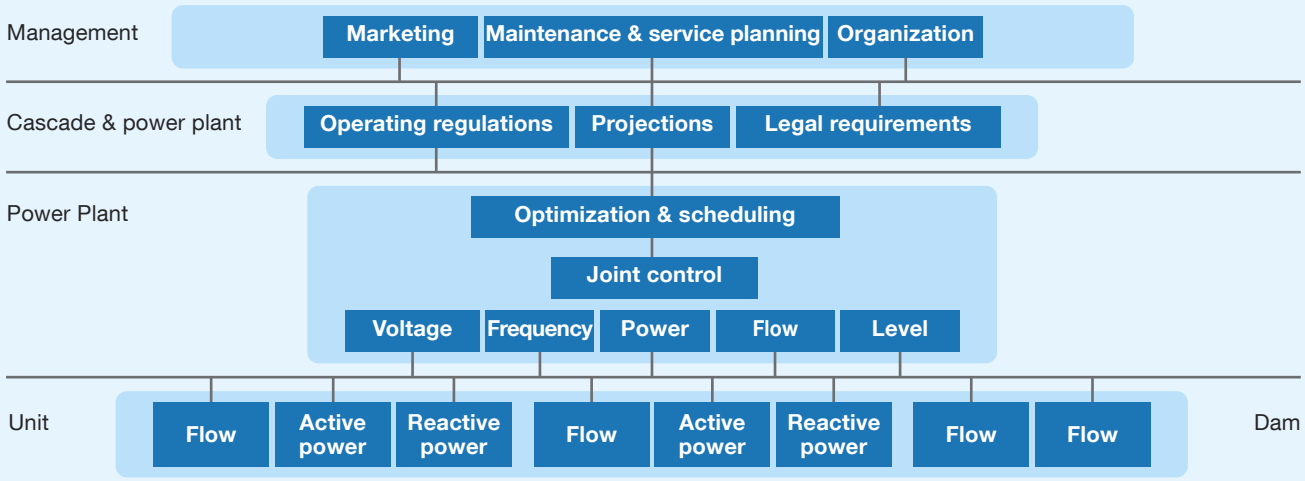
Forecast
- meteorological data (precipitation,temperature snow depths, water levels)
- calculation of expected hydrographic curves

Optimization
- electricity production
- reservoir capacity
- surge operation of power plant cascades
- production scheduling

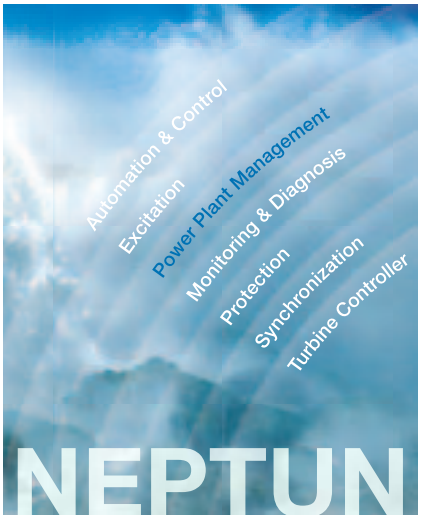
Data interfaces
- equipment and maintenance database systems
- commercial databases
- geographical information systems
- MS Office packages

Marketing and sales
- Internet (promotion)
- Intranet

Hierarchy



Project example



Your benefit

Optimal use:

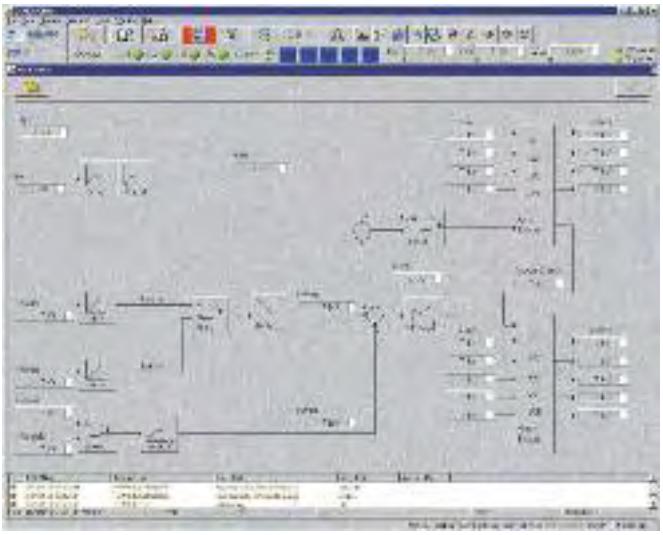
- **with the latest operating and control concepts**
- **through easy expansion**
- **by applying international standards**

Reduced costs:

- **with remote diagnosis and parameter assignment**
- **through easy integration into existing plants**
- **by having fewer different spare parts**

Increased earnings:

- **through optimum control modes and software library**
- **with optimum reservoir management**
- **by increasing system availability**



NEPTUN – the comprehensive solution for secondary systems can offer additional notable advantages in step-by-step expansion of your plant.
This gives you integrated advantages in addition to the current benefits of your power plant control system if additional components are used (for example turbine controller, automation and control).

- Efficient communication standard (IEC 60870-5-104)
- Comprehensive system concepts for remote functions
- Central engineering toolkit
- Simplified plant configuration
- Less engineering and documentation required
- Minimum of additional infrastructure for signal communication
- Minimum of spare parts required
- Liquidation of previously tied capital
- Fewer maintenance and service assignments on site

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