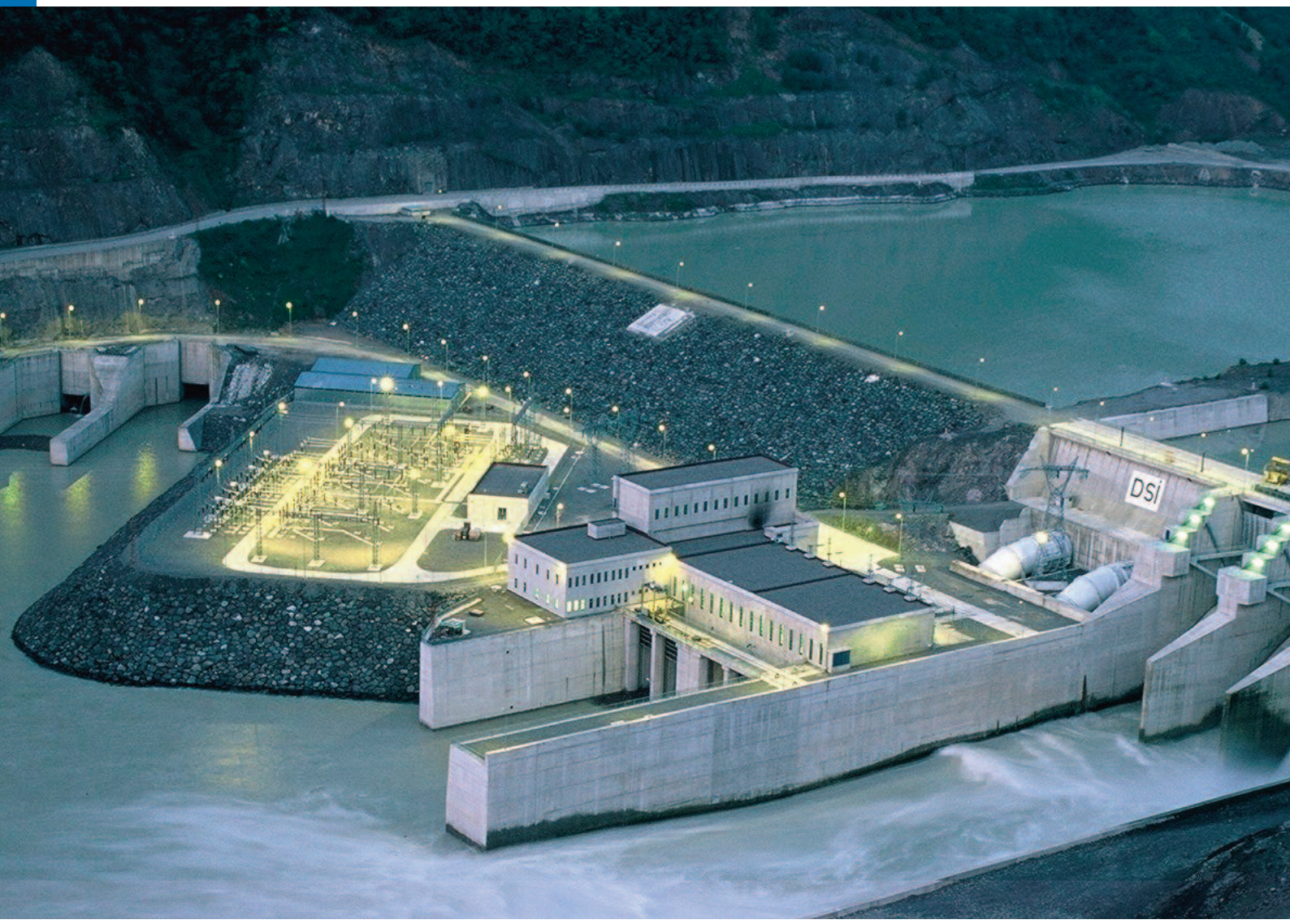
ANDRITZ Hydro

250 SCALA
Control Center System



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250 SCALA Control Center System

Innertkirchen, Switzerland

Optimized Process Control with 250 SCALA

The state-of-the-art SCADA system 250 SCALA provides all functions for operation, supervision and control of the whole technological process. Its scalability allows the use in all automation levels - starting at turbine controller and unit control up to large control- and dispatch- centers.

Optimized ergonomic control- and display-concepts guarantee quick and reliable process overview. The product line extends from the touchpanel of the turbine- or machine-controller through the singular compact system, continues with redundant compact systems up to distributed client / server configurations in multi-hierarchical systems.

Microsoft Windows and UNIX (Sun Solaris) are available as server operating systems, whereas each desired system performance can be achieved.

Bischofshofen, Austria

Markersbach, Germany

Range of Application

Turbine Controller - Gate Control

With a data volume of 500 process signals 250 SCALA suits here in its midget shape: as a tiny, compact 6" touchpanel. The general waiver of rotating components allows usage under harsh ambient conditions.

Unit Control

Touchpanels from 6" to 19", preferably without rotating parts, are used there. Control and display functions for the turbine- respectively machinecontroller are integrated. A built-in online transition-recorder provides the display of the history for the last hours in curves of all analogue or digital values. Thereby fault record analyses with up to 1 ms resolution are possible without additional engineering-efforts.

Power Plant Control

The scalability of 250 SCALA starts there with DIN rail PCs (without rotating parts) or standard PCs equipped with 1-2 screens and extends to large power plant control rooms with an arbitrary number of workplaces. The integrated engineering concept with its centralized parameter administration allows the automatic distribution of process-parameters and process views to the related control panels.

The innovative human-machine interface offers efficient power plant operation:

- Multiwindow / Multiscreen
- Context menus
- User-friendly forms
- Multiple selection
- Drag & drop

Central Control Rooms and Generation Dispatch Centers

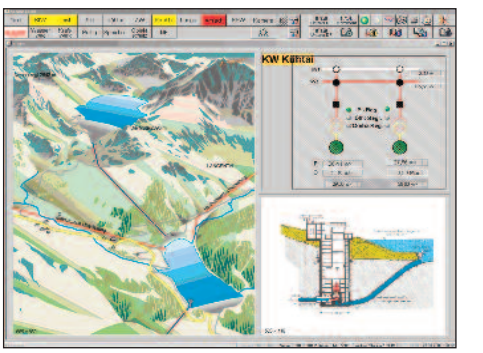
Due to the capability of processing high telegram rates without time delay 250 SCALA is also especially suitable for the usage in large control centers with an virtually unlimited amount of process data. For example - with a given data volume of 200,000 process signals a continuous load of up to 3,000 telegrams / second can be processed.

Database interfaces, web services and the control of video walls are taken for granted. Specific concepts allow both the operation as central servers and the communication with various self-sustaining power plant servers even with different program releases.

World views with an integrated navigator display allow the well arranged operation of power plant cascades. Power plant and cascade optimization is an integral part of the control system.

In addition to the current SCADA standards a lot of higher functions are available, such as:

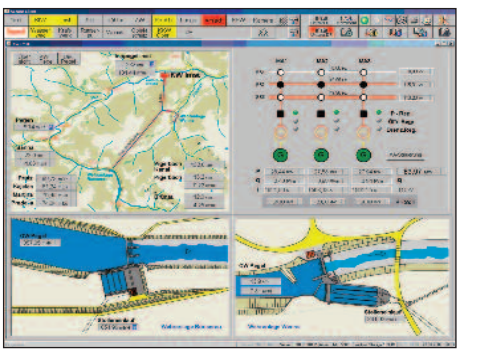
- Topological coloring and interlocking for the switchyard and auxiliary power
- Video surveillance
- Remote alerting via SMS
- Monitoring of network infrastructure
- Remote monitoring and diagnosis



Redundant Power Plant Control

Without additional engineering efforts an existing 250 SCALA system can be made redundant just by simply duplicating the computer-hardware.

For increased security demands the redundant computers can be located even distributed.



Functions

Configurations

- Windows XP Embedded
- Windows XP
- Windows 7
- Windows Server 2008
- UNIX (Sun Solaris 10)
- Redundant server (optional with regional distribution)
- Additional Server (test- & fall back system)
- Unlimited number of workplaces
- Web server and secure VPN
- Video wall control

Expanded functions

- Integrated presentation of EXCEL ® Reports PDF- and HTML-files
- Remote alarming via phone, pager or cell phone (SMS)
- Network management via SNMP
- SQL database interface (ORACLE ®, MySQL ®)
- Forecast and optimization with SAT PROPHET
- Power plant simulation with CAEx plus

Communications:

- IEC 60870-5-101
- IEC 60870-5-104
- IEC 61850
- Industrial interfaces: Modbus Profibus, etc.
- OPC Client
- OPC Server
- API for Visual Basic and C++

Basic functions

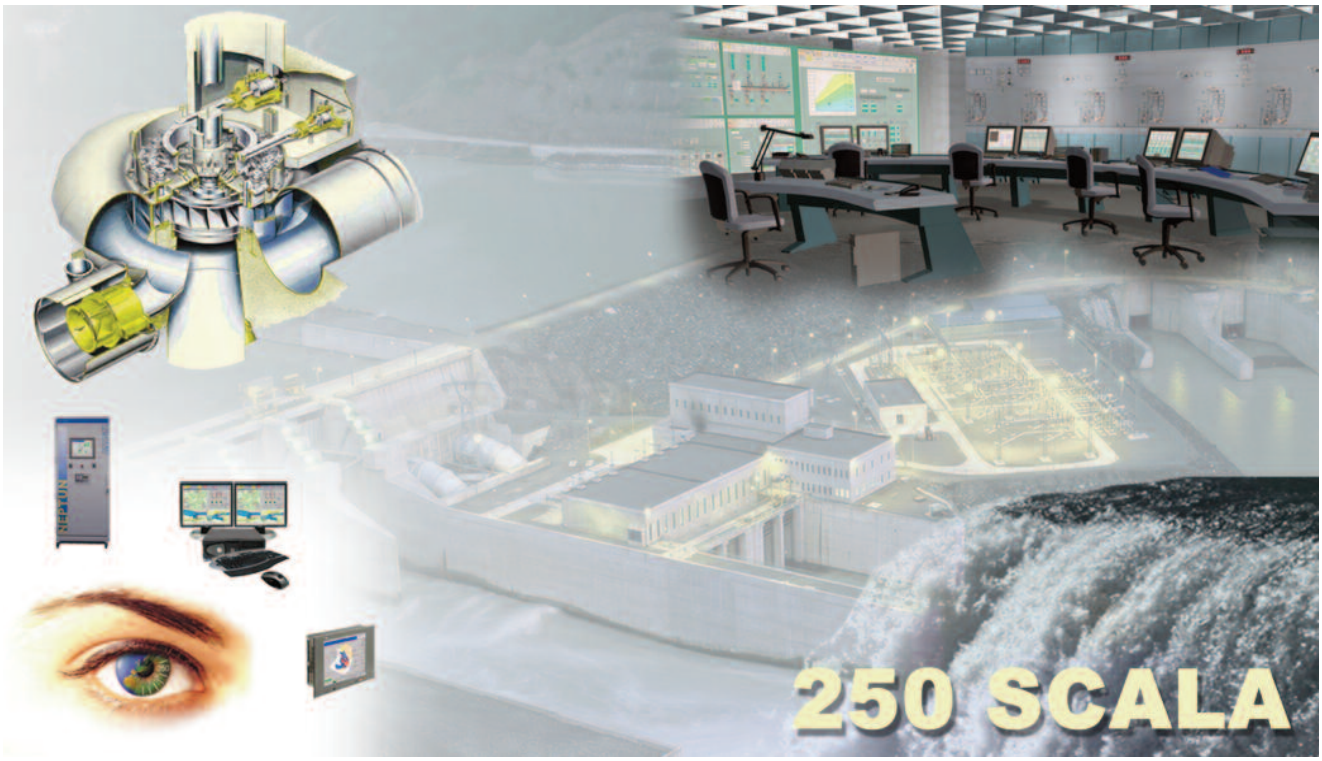
- Archiving of 1 msec transitions
- Chronological, spontaneous and post-mortem archives
- Curves with dynamic limits
- Drag & Drop between logs, curves and process views
- Flexible alarming concept
- Multilingualism - including unicode

Engineering

- Joined parameterization of multi hierarchical systems with automated parameter transfer
- Integrated engineering tool for SICAM 1703
- Object oriented
- Logbook of the engineering activities
- Standard library

Scalability

- Turbine controller
- Unit controller
- Power plant control system
- Central control rooms
- Dispatch center
- Control centers for municipal utilities
- Substations
- Switchgears



Your Benefit

Optimal use by:

- **Program-revision independency of unit control panels, powerplants and control centers**
- **Innovative human-machine interface with ergonomic operation- and display concepts**
- **Excellent scalability - from the local unit control up to dispatch center**
- **High operational availability - integrated redundancy option**
- **Flexibility for further enhancement - such as databases, remote alarming, etc**

Cost reduction by:

- **One and the same product - from touchpanel up to server**
- **Object oriented engineering**
- **Remote diagnosis and access from home office via intranet or Web**

Increase of proceeds by:

- **Easy maintenance by using same technology**
- **Automatic parameter distribution to all control system levels**
- **Power plant and cascade optimization**

250 SCALA
Simply made for you

NEPTUN - the integrated common solution for the secondary technology can offer notable advantages in course of plant expansion/refurbishment. That means integrated advantages in case of use of further systems (e.g. turbine governor, excitation, protection) additional to the existing benefits of your automation & control system.

- Powerful communication standard (IEC 60870-5-104)
- Common system concepts for remote functions
- Central engineering toolkit
- Simplification of the plant configuration
- Decrease of engineering- and documentation expenses
- Minimizing of additional infrastructure for signal intercommunication
- Minimizing of spare parts
- Liquidation of former fixed capital
- Reduction of local service and maintenance action

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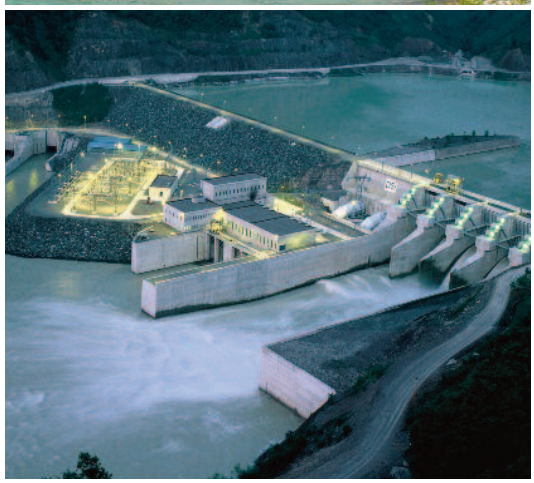
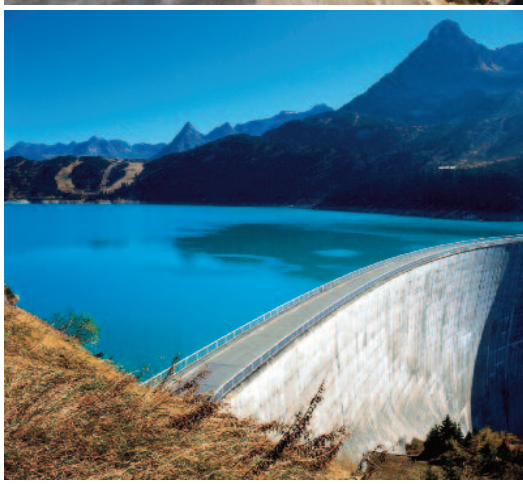

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ANDRITZ HYDRO GmbH
Penzinger Strasse 76
1141 Vienna, P.O.B. 5, Austria
Phone: +43 (1) 89100
Fax: +43 (1) 8946046
E-Mail: contact-hydro@andritz.com

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