

SIEMENS
Ingenuity for life

**DCS from power plant
engineers ...**





...in more than 3,000 units around the globe

Biomass Power Plants Kaidi, China

Wuhan Kaidi Electric Co. Ltd.

Control systems for 16 Kaidi Biomass Power Plants enable central monitoring and operating

”As our new biomass power plants are built in rural areas, it is important for us that they run with a reliable control system and that we can access data from all plants at our central control room at Kaidi. SPPA-T3000 Control System fulfills all these requirements.”

Zheng Tao, I&C Director
Wuhan Kaidi Electric Co. Ltd.

Initial situation and objectives

- For the 16 newly constructed biomass power plants, Wuhan Kaidi needed a reliable supplier for the DCS for 18 units. As the biomass power plants are mostly built in rural regions, on-site service for these locations is inconvenient and costly. Therefore Kaidi needed a reliable control system that can also be accessed remotely

Solution

- Installation of SPPA-T3000 control system in all power plants
- Operation via an intuitively structured interface from a central room at Kaidi
- Software upgrades can also be implemented remotely

Benefits

- ▶ Central control and monitoring of isolated small biomass power plants
- ▶ Reliable state-of-the-art control system with remote access
- ▶ High quality operator control due to easy user-interface with multiple functionality and uniform control systems across several plants

Geothermal Plant Hellisheidi, Iceland

Orkuveita Reykjavíkur

**Hellisheidi Geothermal Plant:
A new DCS designed to last**

“We are happy with its functionality, programming flexibility and smooth implementation in the construction phase.”

Ingólfur Hrólfsson, Head of New Power Projects
Orkuveita Reykjavíkur

Initial situation and objectives

- New control system required for new units for one of the largest Geothermal Plants in the world, that are compatible with the existing PCS7 system. The new control system should be future-proof and able to run on hardware-independent software

Solution

- Installation of Siemens market leading DCS SPPA-T3000 control system
- Allows applications to be executed and delivered virtually without operating system restrictions or hardware platform compatibility issues
- Communication to other control systems possible

Benefits

- ▶ Lasting DCS that never goes obsolete during power plant lifetime due to the hardware-independence of the software
- ▶ High programming flexibility thanks to online configurations and the drag and drop system

Steam Power Plant Pątnów II, Poland

ZE PAK SA

Pątnów II – maximum availability from minimum fuel input

”When building our latest power plant, Pątnów II, we wanted to make sure that the unit would operate on a fully automatic basis by using state-of-the-art technology. Thanks to the SPPA-T3000 control system, we now have a power plant that offers maximum availability from a minimized resource input.”

A. Grudzień, Power Plant Manager,
ZE PAK SA

Initial situation and objectives

- Creation of an overall concept which would allow the unit to be operated fully automatically, including the associated ancillary facilities and flue gas cleaning plant, but also to incorporate external systems manufactured by other suppliers. The control system should enable the plant to be operated economically with a long durability and guarantee maximum availability for all load scenarios

Solution

- Automation of the unit and auxiliary systems by implementing SPPA-T3000 control system
- Modern I&C system, which monitors and optimizes the use of fuel
- Operator control and monitoring system for decentralized process control and archiving of data

Benefits

- ▶ Maximum plant availability thanks to automated procedures and integration of all technological components
- ▶ Increased economic efficiency thanks to the optimized use of fuel and extended durability

Waste Incineration Plant Harlingen, Netherlands

REC B.V.

Comprehensive and cost-effective solution for new plant in Harlingen

” We are very pleased with the whole project – a comprehensive and cost-effective solution tailored to our plant. In particular the multi-unit concept and the Siemens policy ‘SPPA-T3000 never goes obsolete’ were convincing.”

Seerp Bosch, Power Plant Director
REC B.V.

Initial situation and objectives

- A supplier and manufacturer of electrical and control systems with experience in waste incineration plants was needed for the new plant in Harlingen. The specific requirement was to offer a solution that could also be integrated into the existing control system of the power generation plant in the salt production facility

Solution

- SPPA-T3000 control system offers full integration via a multi-unit concept for both the waste incineration plant and the power generation plant of the salt production facility
- Service from a single source was the key for a successful and most cost-effective project from engineering, installation and commissioning to maintenance

Benefits

- ▶ Comprehensive, most cost-effective solution
- ▶ Full integration into existing control system through a multi-unit concept
- ▶ High availability due to optimized interface, process and system redundancy and a full service package

Biomass heat and power plant Sandreuth, Germany

N-ERGIE Kraftwerke GmbH

High availability for the Sandreuth biomass heat and power plant, thanks to modern Siemens solutions

”For us, being able to obtain the complete electrical and I&C package for our biomass heating power plant from a single source was exactly the right solution.”

Norbert Egner, Manager Electricals and Controls
N-ERGIE Kraftwerke GmbH

Initial situation and objectives

- The objectives of the project included the generation of 35 million kWh of green electricity per annum and the integration of the plant into the existing infrastructure of the power plant complex by usage of a state-of-the-art instrumentation, controls and electrical engineering solution

Solution

- Installation of Siemens electrical solutions for the complete electrical scope, adoption to the existing infrastructure
- SPPA-T3000 unit control system allows monitoring and optimization of the plant's operation from various workstations

Benefits

- ▶ High availability thanks to reliable, cutting-edge instrumentation, controls and electrical engineering supplied from a single source
- ▶ Operation of the biomass heating plant via on-site workstations and in parallel with the control room of the existing power plant
- ▶ Significant savings in auxiliary power consumption achieved by use of frequency converters on drives

Waste-to-Energy Plant Langmosseberg, Finland

Vantaan Energia Oy

State-of-the-art DCS for the Langmosseberg Waste-to-Energy Plant



Initial situation and objectives

- The WtE-plant is of unique design, having also a natural gas-fired gas turbine and HRSG for superheating delivered Valmet Power. The low temperature steam produced in the grate-fired boilers delivered by Hitachi Zosen Inova improves electrical efficiency

Solution

- Complete DCS solution for the entire WtE-plant including integrated fail safe system
- Integration of gas and steam turbine control system, various black box systems as well as the entire electrical systems
- Key components for the plant's electrical system as Medium voltage & Generator circuit breaker

Benefits

- ▶ State-of-the-art DCS with uniform user interface to control and monitor the entire WtE facility

Get more information

Comprehensive information concerning the control system for power generation:

www.siemens.com/sppa-t3000

Email: sppa-t3000.energy@siemens.com

Siemens AG
Process Industries and Drives
Automation and Engineering
Östliche Rheinbrückenstr. 50
76181 Karlsruhe
Germany

© Siemens AG 2018

Subject to change without prior notice

T3_B_Customer-References_e_V1-0

AL: N ECCN: N

The information provided in this technical description merely contains general descriptions or characteristics of performance which in actual use do not always apply as described or which may change as a result of further development of the products. An obligation to provide the respective characteristics shall only exist if expressly agreed in the terms of contract. Availability and technical specifications are subject to change without notice.

All product designations may be trademarks or product names of Siemens AG or supplier companies whose use by third parties for their own purposes could violate the rights of the owners.

Security information

Siemens provides products and solutions with industrial security functions that support the secure operation of plants, systems, machines and networks.

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens' products and solutions only form one element of such a concept.

Customer is responsible to prevent unauthorized access to its plants, systems, machines and networks. Systems, machines and components should only be connected to the enterprise network or the internet if and to the extent necessary and with appropriate security measures (e.g. use of firewalls and network segmentation) in place.

Additionally, Siemens' guidance on appropriate security measures should be taken into account. For more information about industrial security with regard to SPPA-T3000, please visit the Siemens Customer Portal. Due to the character of the information provided, the Customer Portal is exclusive to registered Siemens customers using SPPA-T3000. If you are a SPPA-T3000 user, but not registered yet, please approach your local Siemens partner or apply for registration by using the "Register" function on the Customer Portal website: <http://www.siemens.com/cp4ic>

If you are also using other Siemens systems in addition to SPPA-T3000, please make sure to check this website, which includes all of the information and the procedures recommended by Siemens: <http://www.siemens.com/industrialsecurity>.

Siemens' products and solutions undergo continuous development to make them more secure. Siemens strongly recommends to apply product updates as soon as available and to always use the latest product versions. Use of product versions that are no longer supported, and failure to apply latest updates may increase customer's exposure to cyber threats.

To stay informed about product updates with regard to SPPA-T3000 please refer to the above mentioned Customer Portal, with regard to other Siemens systems please subscribe to the Siemens Industrial Security RSS Feed under <http://www.siemens.com/industrialsecurity>.

Java is a registered trademark of Oracle and/or its affiliates.



All other product or company names mentioned in this document are trademarks or registered trademarks of their respective owners and are used only for purposes of identification or description.