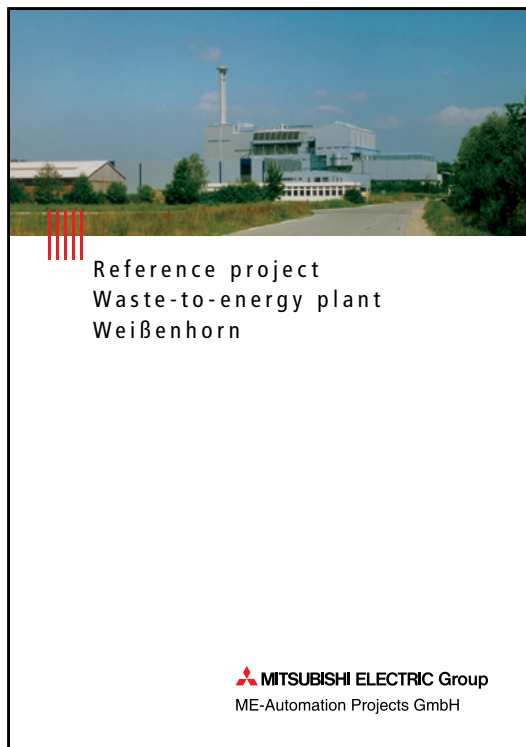


Application Story

Industry: Power / Process

Products: Control Systems

Waste-to-energy plant Weißenhorn



Project of ME-Automation Projects GmbH, a member of the Mitsubishi Electric Group. First published in June 2014.

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Reference project
Waste-to-energy plant
Weißenhorn

Customer:	AWB - Landkreis Neu-Ulm
Plant:	Waste-to-energy plant Weißenhorn
Plant capacity:	2 lines, 100 000 tons/a
Project value:	~ 6 million Euro
Project duration:	1995 – present (in discrete construction stages)

Description

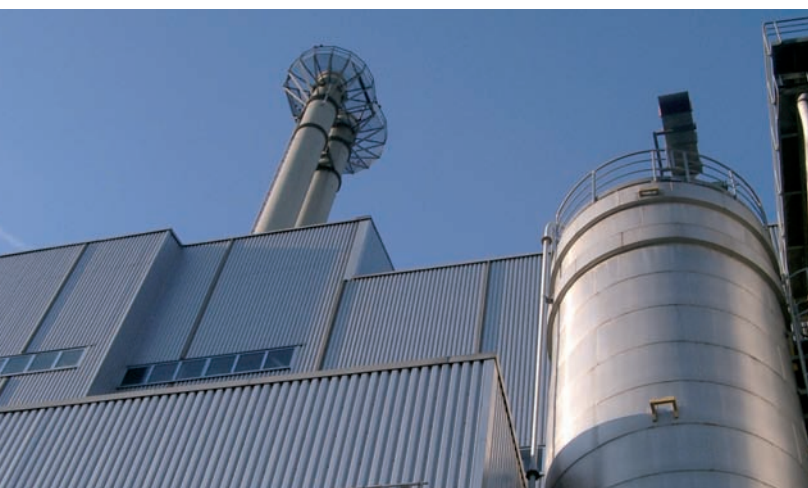
In order to handle all the waste disposal tasks in the rural district of Neu-Ulm, the municipal company "Abfallwirtschaftsbetrieb" (AWB) was founded in January 1995. The present plant's design capacity is 100,000 tons per year, whereby incineration is carried out in two lines with a throughput of 6 t/h each.

But already in 1991, ME-Automation Projects, back then Philips Automation Projects received an order to supply the measurement & control equipment for the waste incineration plant. At that time, the PMS 68000 process management system with its distributed architecture fulfilled all the requirements for overall plant control reliably. With the aim of maintaining the waste disposal operations at a high technical level, and to meet tighter environmental regulations, the plant was retrofitted and upgraded in several stages during the following years.

In 1995, the waste-gas cleaning system was extended with an active charcoal filter and a downstream SCR stage, and water-cooled grates were installed in 1998. After many years of reliable operation, and due to increasing difficulties in obtaining spare parts, the maintenance costs required to ensure continued operational safety had increased significantly. It was therefore decided to renew the entire process management & automation system.

The municipal company AWB commissioned ME-Automation Projects, formerly known as KH-Automation Projects, to upgrade the existing control & automation systems by means of modern, powerful and innovative technology that was to be installed with the help of an efficient migration concept. For this purpose, the distributed architecture of the PMSX[®]pro process management system proved to be ideal. It enabled the project to be implemented very flexibly in several stages. Instead of making a high single investment within a short period, the construction and modernization measures were spread over several years.

This concept enabled previous investments to be preserved, expansions had no retroactive effects, and the work was carried out without interrupting normal operation. During assessment of the new process management system, the distributed architecture of PMSX[®]pro, its data consistency, and its high availability and reliability were decisive factors. Moreover, distribution of the process control & automation tasks in several process servers, together with redundant data storage, ensure utmost operational safety and highly efficient plant operation.





Technical requirements

- Process management of entire plant from a central point
- Vertical and horizontal data consistency
- Highly available automation stations
- Distributed system architecture with local process servers
- Data acquisition via distributed I/O modules
- System-wide engineering from a central engineering workplace
- Archiving of all incoming alarms & messages
- Archiving of all relevant measurement values in appropriate compression stages
- Strict data consistency in all software tools
- Function plan documentation
- Standardized software tools
- Combustion control
- Access to all process values from the office environment

Scope of delivery

- ▮ Process management system PMSX®pro
- ▮ Automation equipment
- ▮ Combustion control
- ▮ Fail-safe boiler protection system
- ▮ Network using switch technology
- ▮ Field instrumentation
- ▮ Installation & wiring
- ▮ Target specifications / engineering / programming
- ▮ Factory test / documentation
- ▮ Commissioning / trial operation / training

Process management characteristics

- ▮ Process management system PMSX®pro
- ▮ Topology distributed system
- ▮ Network Ethernet fiber optic – single-fault tolerant
- ▮ Automation system Mitsubishi System Q (highly available)
- ▮ Data points about 10 000
- ▮ Automation stations 10 (redundant)
- ▮ Operating stations 4
- ▮ Process servers 3

Excerpt from our reference list

				
Waste incineration plant Frankfurt	Waste incineration plant Iserlohn	Waste incineration plant Weißenhorn	Wastewater treatment plant Erdinger Moos	Wastewater treatment plant Bad Homburg Ober-Eschbach
				
Milk production Regensburg	Energy supply center Dresden	Energy supply center Oberhausen	Pellet production plant Offenbach	Biomass CHP plant Wiesbaden
				
Energy supply center Munich Airport	Waste incineration plant Frankfurt	Drinking water plant Haltern	Sewage network and wastewater treatment plant Hamburg	Pellet production plant Dotternhausen
				
Wastewater treatment plant Düsseldorf-Nord	Waste incineration plant Frankfurt	Waste incineration plant Hamm	Waste incineration plant Frankfurt	Facility Management Control System Dresden
				
Facility Management Control System Nijmegen	Tank terminals Rotterdam	Barthel Pauls Söhne AG Biomass CHP plant	Wastewater treatment plant Stuttgart-Mühlhausen	Wastewater treatment plant Nuremberg
				
Wastewater treatment plant Nidderau	Wastewater treatment plant Landshut	Drinking water plant Friesland		
				
Tank terminal Botlek	Sewage network Wuppertal			

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