



Reference project
Gemeinde Söhrewald
drinking water system

Customer:	Gemeinde Söhrewald
Plant:	Drinking water procurement and distribution
Project value:	about 0.3 million Euro
Project duration:	2010–2011

Description

The town of Söhrewald in the rural district of Kassel provides drinking water for the neighbouring villages Wellerode, Wattenbach, and Eiterhagen.

Every year, the 5400 inhabitants are supplied with some 200.000 cubic meters of drinking water. The water comes from three wells, whose groundwater level is up to 150 m deep. Corresponding pumps at depths down to 230 m fetch the water to the surface and pump it into elevated reservoirs close by. The water is collected in these reservoirs, from where it is available for distribution to the consumers via a supply network with a total length of about 46 km.

To ensure a reliable water supply, a high degree of automation is necessary for the procurement and distribution processes. All 13 remote stations such as elevated reservoirs, wells, pumps, and pressure reducing stations must be monitored and controlled via a telecontrol network. Any component or equipment failure must be detected and signalled immediately. Moreover, possible leakages must be detected quickly.

Because parts of the existing control & monitoring system dated from the early 90's and no longer met today's technical standards after so many years of continuous operation, the entire telecontrol and automation system in the different locations and remote stations of the supply network were to be modernized and expanded.

Digital and analog signals from the remote stations in various locations across the municipality are processed by decentralized I/O systems connected via field bus controllers. The signals are

used to control pumps and valves, and to monitor levels, flow quantities, inflows & outflows, pressures, and supply voltages. The field bus controllers use DSL modems and dedicated lines to communicate with each other and with the central control room. As some of the remote stations do not have two-wire connections, communication with the central control room is done with GPRS/UMTS wireless routers and VPN tunnels.

What's more, the measurement and pressure reducing stations located underground in the supply network do not have a local power supply, so that special stand-alone recording systems have been installed. At regular intervals, the recorded data are transmitted to the control room via a GSM communication link and VPN.

All process data and alarm messages from the remote stations are received in the central control room in Söhrewald, where they are visualized, processed, and archived by the PMSX[®]pro process management system. Clearly structured process graphics display the measurement values together with the operating states. Status messages from the equipment are displayed graphically, as well as alarms and exceeded limits.

In addition, high-priority alarms that require immediate intervention are transmitted to the mobile phone of a permanently manned emergency service.

If the control room is not manned, a mobile station provides remote access to the process management system from anywhere. On-site process operation in the external locations – which are fitted with field bus controllers – puts the finishing touch to the PMSX[®]pro process management system. Direct switching operations can be carried out via "touch" operating panels in the out-stations.

For ME-Automation Projects – previously KH-Automation Projects GmbH – the project included supply of all the distributed systems, telecontrol, process control & electrical equipment required to modernize and expand the existing system, plus the associated engineering services for a turnkey-installation.





Technical requirements

- Central operation and monitoring of the plant
- Integration of remote substations
- Integration of the telecontrol system
- Remote alarming via SMS
- Archiving of all incoming alarms & messages
- Archiving of all relevant measurement values in appropriate compression stages
- Strict data consistency
- Ensuring the simple integration of future expansions
- Interface with the municipal data network

Scope of delivery

- Process management system PMSX[®] pro
- Telecontrol equipment
- Wireless and wired data communication
- Conversion of switchgear
- Installation & wiring
- Target specifications / engineering
- Programming
- Commissioning / trial operation
- Personnel training
- Documentation

Process management characteristics

- | | |
|---------------------------|-----------------------|
| Process management system | PMSX [®] pro |
| Topology | distributed system |
| Network | Ethernet, DSL |
| Telecontrol system | WAGO |
| Data points | about 1000 |
| Telecontrol stations | 8 |
| Operating stations | 1 |
| Process servers | 1 |

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			

www.me-ap.de

GERMANY
ME-Automation Projects GmbH

Kasseler Straße 62
34277 Fuldaabrück

phone +49 (0)561 58540
fax +49 (0)561 5854530

e-mail: info@me-ap.de
www.me-ap.de

NETHERLANDS
ME-Automation Projects

Science Park Eindhoven 5008 A
5692 EA Son

phone +31 (0)40 26 79 900
fax +31 (0)40 26 79 919

e-mail: secretariaat@me-ap.eu
www.me-ap.eu

 **MITSUBISHI ELECTRIC Group**
ME-Automation Projects GmbH