



Reference project Friesland drinking water system

Customer:	Vitens Fryslân
Plant:	Drinking water procurement and distribution
Project value:	about 3.5 million Euro
Project duration:	1993–present (in discrete construction stages)

Description

The Vitens Fryslân company supplies drinking water to about 250.000 households in the Dutch province of Friesland, and on the islands Vlieland, Terschelling, Ameland, and Schiermonnikoog. The households of the 31 communities are distributed across the entire province of Friesland, connected by a water pipeline about 6.200 km in length. A total of 19 substations pump about 45 million m³ of groundwater per year from depths between 50 and 130 meters, and convey them to four main pumping stations for treatment and distribution. The aim of the comprehensive modernization project was to ensure high-quality water treatment as well as a reliable supply to all the households for an acceptable price.

The individual stations are located all over Friesland, interconnected via high-speed DSL communication links and also coupled to a central control room. During normal working hours, the pumping stations are manned by a small force of operators. At night and during the weekends, system-wide process management is handled by the central control room. Usually, the unmanned substations are operated completely from the central control room or from the superordinate pumping stations. These key functions of the pumping stations and the central control room place very high demands on safety and availability of the process management and automation systems. Thanks to its distributed structure and multiple availability of functions in several operating stations, the PMSX[®]pro process management system is ideally suited for such a demanding task.

One distributed process management system is installed in each station, whereby hardware and software are designed for utmost system safety. Should a disturbance occur, redundant equipment and corresponding procedures ensure uninterrupted plant operation without loss of data.

Meanwhile, the existing local data communication via a ring-shaped wide area network (WAN) has been replaced by much faster DSL communication links. In each station, DSL routers handle the data traffic between the local Ethernet system bus and the DSL link. This enables all the stations to communicate freely with each other, and central process management is greatly accelerated. In order to increase operational safety, e.g. in case of disturbances in the DSL network, backup lines are provided, and in addition, all the process data are buffered locally. Signal paths and possible communication faults are monitored continuously in the central control room.

Moreover, data from critical plant sections and equipment are transferred to an OSIsoft central management information system. Apart from the province of Friesland, the OSIsoft system is also used for several other provinces in which Vitens has taken over the water supply during the past years. In Friesland, OPC interfaces have been installed in 25 PMSX[®]pro stations for linking them to the OSIsoft management information system via a local front-end computer.

The PMSX[®]pro process management system is an ideal solution for such widely distributed plant layouts. Thanks to the fully independent operation of the individual parts of the installation in combination with central process management and system configuration, a highly efficient overall system has been created, which meets all the requirements in terms of safety, availability, convenience, and flexibility.





Technical requirements

- Process management of the plant from a central location
- Redundant operator workstations
- Automation stations
- System-wide engineering from a central engineering workplace
- OPC coupling to the management information system
- Connection to the OPIR water demand prediction program
- Archiving of all incoming alarms & messages
- Archiving of all relevant measurement values in appropriate compression stages
- Strict data consistency
- Standardized software tools

Scope of delivery

- Process management system PMSX[®] pro
- Automation equipment
- Network using switch technology
- Telecontrol system using DSL technology
- Installation & wiring
- Target specifications / engineering / programming
- Commissioning / trial operation / training

Process management characteristics

- | | |
|---------------------------|------------------------------|
| Process management system | PMSX [®] pro |
| Topology | multiple distributed systems |
| Network | Ethernet, DSL |
| Automation system | Philips P8, Siemens S7 |
| Data points | about 30 000 |
| Automation stations | 50 |
| Operating stations | 20 |
| Process servers | 37 |

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