

Application Story

Industry: Food & Beverage / CPG

Products: Control Systems

Bayernland eG dairy company in Regensburg



Reference project
Bayernland eG dairy company
in Regensburg

 **mitsubishi electric** Group
ME-Automation Projects GmbH

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

Mitsubishi Electric Europe B.V. / FA – European Business Group / Gothaer Straße 8 / D-40880 Ratingen / Germany
Tel. +49 (0)2102 486-0 / Fax +49 (0)2102 486-1120 / info@mitsubishi-automation.com / eu3a.mitsubishielectric.com



Reference project
Bayernland eG dairy company
in Regensburg

Customer:	Bayernland eG
Plant:	Regensburg dairy
Processing of:	270 million kg of milk per year
Project value:	about 0.5 million Euro
Project duration:	2010–present (in discrete construction stages)

Description

Every year, some 1800 producers deliver 270 million kg of milk to the Bayernland Regensburg dairy for the production of drinking milk, curdled milk, yoghurt, desserts, cream cheese, butter, and skimmed milk & whey powder.

Automatic receiving stations with a capacity of 250.000 liters for the delivered milk are fitted with inductive flowmeters and temperature measurement. From the receiving stations, the raw milk is pumped into a storage tank that can hold up to 820.000 liters. The milk is then pumped to the processing hall as required, where it is separated, pasteurized, and cooled. Finally, the milk and cream are passed to the individual processing stations via a pipework system. The processing stations consist of individual storage tanks, various sizes of ripening containers, and machines for producing the end products. All pipework systems, storage tanks, and containers are connected to an automatic cleaning installation. Cleaning is carried out automatically at defined intervals.

Due to the outdated process control equipment and the associated problems regarding the procurement of spare parts, Bayernland eG decided to renew the entire process management system.

The aim of this migration project was to achieve significantly higher plant availability, an increase in productivity, and the implementation of a modern, flexible, and future-oriented process management system.

By means of the PMSX[®]pro process management system, all the processing installations can be operated and monitored from the central control room or via the decentralized operating stations. Moreover, PMSX[®]pro permits the efficient and automatic production of various dairy products, all of which must meet the high quality demands of the consumers.

The main challenge of this migration project was the extremely short time frame. Within just 3 days, roughly 4.200 field signals had to be reconnected, tested, and the PMSX[®]pro system commissioned, so that normal production could be resumed at the start of the next week. The work was carried out successfully as planned, because all relevant processing stages had been simulated and tested in advance during a comprehensive factory acceptance test. Moreover, a specially designed adapter system was used to reconnect all the field signals.





Technical requirements

- System migration within a very short plant shutdown period
- Retention of the operating concept
- Process management and sequence control of entire plant from a central location
- Operation and monitoring of entire plant from all distributed operator stations
- Stepwise migration from the existing control & automation system to PMSX[®]pro
- Vertical and horizontal data consistency
- Conversion and expansion during normal operation without retroactive effects
- System-wide engineering from a central engineering workplace
- Long-term storage of data and messages
- Strict data consistency in all software tools
- Availability of all process values for further processing
- Standardized software tools in accordance with IEC 61131-3

Scope of delivery

- ▮ Process management system PMSX[®]pro
- ▮ Automation equipment
- ▮ Network using switch technology
- ▮ Large-screen displays
- ▮ Engineering
- ▮ Programming according to IEC 61131-3
- ▮ Documentation
- ▮ Factory acceptance test (works test)
- ▮ Installation / commissioning / trial operation
- ▮ System training

Process management characteristics

- | | |
|-----------------------------|-----------------------|
| ▮ Process management system | PMSX [®] pro |
| ▮ Topology | distributed |
| ▮ Automation system | Mitsubishi System Q |
| ▮ Data points | about 5000 |
| ▮ Automation stations | 2 |
| ▮ Operating stations | 4 |
| ▮ Process servers | 2 |
| ▮ Large-screen display | 4 LCD monitors |

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 Fuldabrück

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