



# Principal wastewater treatment plant Vienna

Expansion and retrofit to the most modern European wastewater plant with SIMATIC PCS7



Source: EbS

## The requirements

New legal requirements demanded a comprehensive expansion and modernization of the principal wastewater treatment plant in Vienna, built in 1980.

After modification it should be guaranteed that the wastewater accruing in the city of Vienna can be completely biologically treated, and the legally stipulated nitrogen removal of at least 70 % can be secured. In order to comply with these environmental demands the process had to be reengineered and a secondary treatment had to be established.

Moreover the process control system of the existing plant should be modernized and extended by the new plant components. Since the principal wastewater plant Vienna treats 98 % of the sewage of Vienna, the plant has to continuously operate around the clock, 365 days a year. Herein was the biggest challenge of the project: Expansion and modernization of the

plant must be executed without interruption and reduction of operation.

## The solution

Since its completion in 2005 the principal sludge plant Vienna is considered the most modern plant of its type in Europe. The process control system SIMATIC PCS 7 has an essential part in a safe and economic operating control which renders the fully automatically control and regulation possible.

The plant was upgraded in several steps from SIMATIC PCS 7 V5.2 to SIMATIC PCS 7 V 6.1. Thus it was assured that powerful function upgrades, such as i.e. Asset Management for system diagnosis from version 6.0 onwards, can be re-fitted without problems during the course of the project. All building activities were executed during ongoing operation – without reduction of the treatment capacity.

## Water and Wastewater

Answers for industry.

**SIEMENS**



Source: EbS

The configuration comprises 42 automation systems SIMATIC S 7-400 – thereof 14 in redundant design. For the process visualization 18 control stations and one large screen wall were made available. For the communication a partly redundant Profibus was applied.

#### The benefits

With SIMATIC PCS 7 an automation solution was realized based on the innovative and, at the same time, proven SIMATIC platform. Therewith the process control system serves for the transparency of the process which is indispensable for a safe and reliable process control. Moreover, the longterm product support guarantees to the customer a high degree of investment protection. Engineering tools, part of the delivery scope of SIMATIC PCS 7, permit an economic project handling and consequently a noticeable saving of time and costs for system integrators. The plant-wide uniform operation with 290 intuitively operable process diagrams decreases the risk of faults and increases safe disposal. At the same time operating costs are reduced because of the reduced need for training. For technical questions the customer support, with experienced automation specialists, were available day and night.

#### The Operator

Entsorgungsbetriebe Simmering GmbH (EbS)  
(Technical and economical administration of the plant since 1986)

#### The System in brief

The principal wastewater plant treats 98% of Vienna's sewage. The expansion and modernization of the plant started in 2000 and was completed in 2005..

- Construction size: 4.0 Mio PE
- Throughput: 500.000 m<sup>3</sup>/d -1,5 Mio m<sup>3</sup>/d
- Treatment performance >95%
- Nitrogen removal >70%

#### The System Integrator

Cegelec Anlagen- und Automatisierungstechnik GmbH & Co. KG  
(www.cegelec.de)

#### Products installed

- Process control system SIMATIC PCS7
- 18 control stations and 1 large-format screen
- 42 SIMATIC PCS 7 -AS thereof 14 redundant
- Profibus, partly redundant, with 4.600 clients

#### Facts and Figures

- 180 control loops
- 290 process diagrams
- 520 diagnostic pictures
- Construction and migration without interruption of operation

#### Benefits at a glance

- Investments protection through longterm product support
- Time and costs saving through economic project handling
- Secure disposal and fault minimization through uniform operator guidance

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