

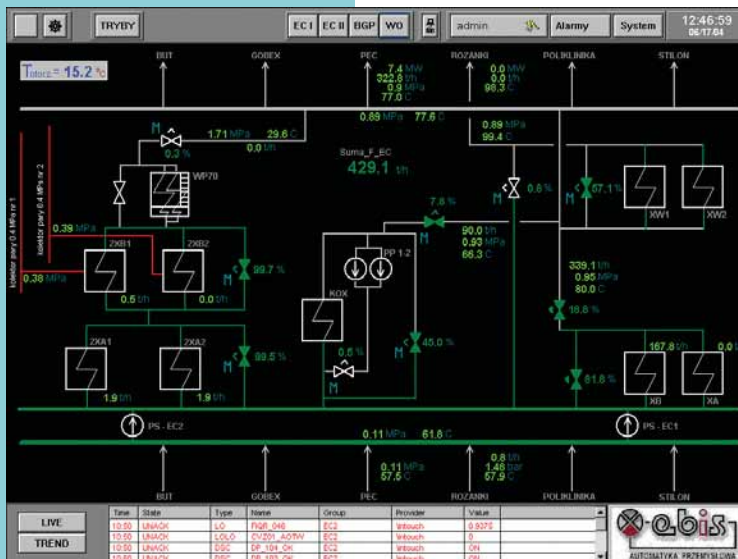
**“Fast and precise results analysis of heat and electric energy production influences the economical results of the whole company.**

**Moreover the system assists the company with monitoring of sale contracts realization on the Energy Balance Market.”**

**Andrzej Sz wajkowski, Chief of Automation & Heat Measurement Dept., Thermal Electric Power Station Gorzów Inc**

## Thermal-Electric Power Station Gorzów Inc.

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**Fig. 1: InTouch software screen-heat exchanges screen**

Wonderware Solutions applied in Thermal-Electric Power Station Gorzów Inc are very important component of production management and effective tool for production quality definition. Fast and precise results analysis of heat and electric energy production influences the economical results of the whole company. Moreover the system assists the company with monitoring of sale contracts realization on the Energy Balance Market.

Thermal-Electric Power Station Gorzów Inc is the producer of heat and electric energy functioning in the west part of Poland. Visualization, adjusting and controlling system was implemented as an investment, helping to maintain quality parameters of produced heat and electric energy, according to clients requirements, and enabling production process monitoring, which allows optimization of production costs.

Introducing the technological processes control system, based on modern software and hardware solutions, is first of all economically justified. Data recording server completely displaces analog measuring apparatus, which operating costs are onerous; savings are also connected with the lack of pannel elements. Reducing to minimum the relay-contactor equipment in control and safeguard systems (these functions are implemented in PLC controllers' logic) results not only in radical costs decreasing (including operating costs), but also in whole installation safety.

In a year 2000 conception work began, then stage-implementation of visualization, data storage and controlling system for heat and electric energy production technology. It was assumed, that the whole system communication would be accomplished over the Ethernet network, with separate

**Company Overview**

Thermal-Electric Power Station Gorzów Inc  
 Gorzów Wielkopolski, Poland  
 The main goal of Elektrociepłownia “Gorzów” SA is production of electric energy, production of heat (steam and hot water), distribution of heat (steam and hot water). The company is situated in western part of Poland delivering heat and power for city of Gorzów. The company was one of the first in Poland putting into operation the gas-and-steam production unit.

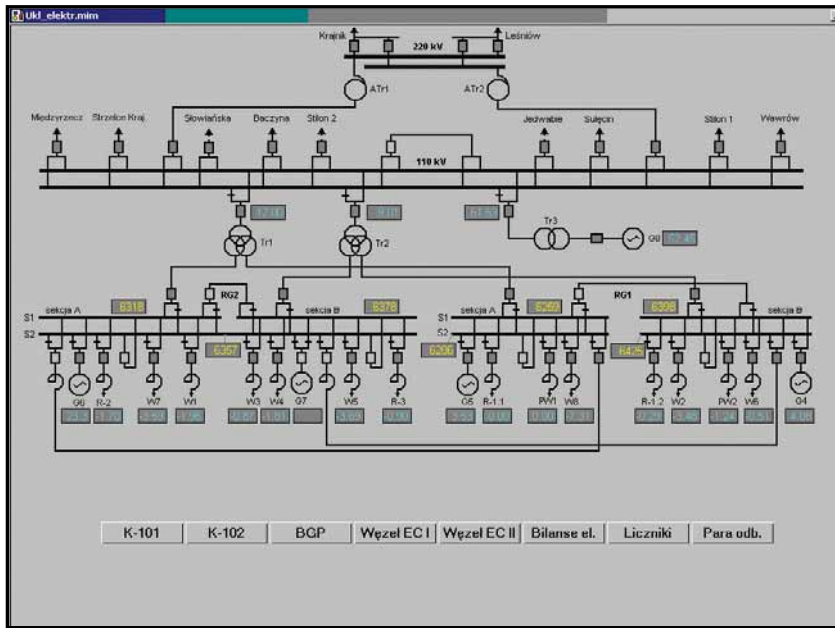


Fig. 2: Power Station - main electric diagram

industrial network, and with taking into consideration current and historical data distribution to the office network.

Basing upon opinions of many companies, which have implemented controlling and monitoring systems in

power industry, users' experiences, and many months of individual tools testing, **Wonderware software was chosen.** Visualization was implemented in Wonderware InTouch and Wonderware IndustrialSQL Server industrial database was used for the purpose of data storage.

Some time later, in a range of visualization and recording important data, a necessity of integration the system with other external systems emerged. Successive areas of production and commercial activity were connected to the system, thanks to the possibility of unbounded development of visualization. One of the challenges was Electric Energy Balance Market introduced in second half of the year 2000, in which Thermal-Electric Power Station Gorzów Inc. indirectly participates from the very beginning. To fulfill growing requirements imposed by this market, a tool assisting production devices, and current deviations monitoring in area of electric energy contracts realization, was created according to self-elaborated conception.

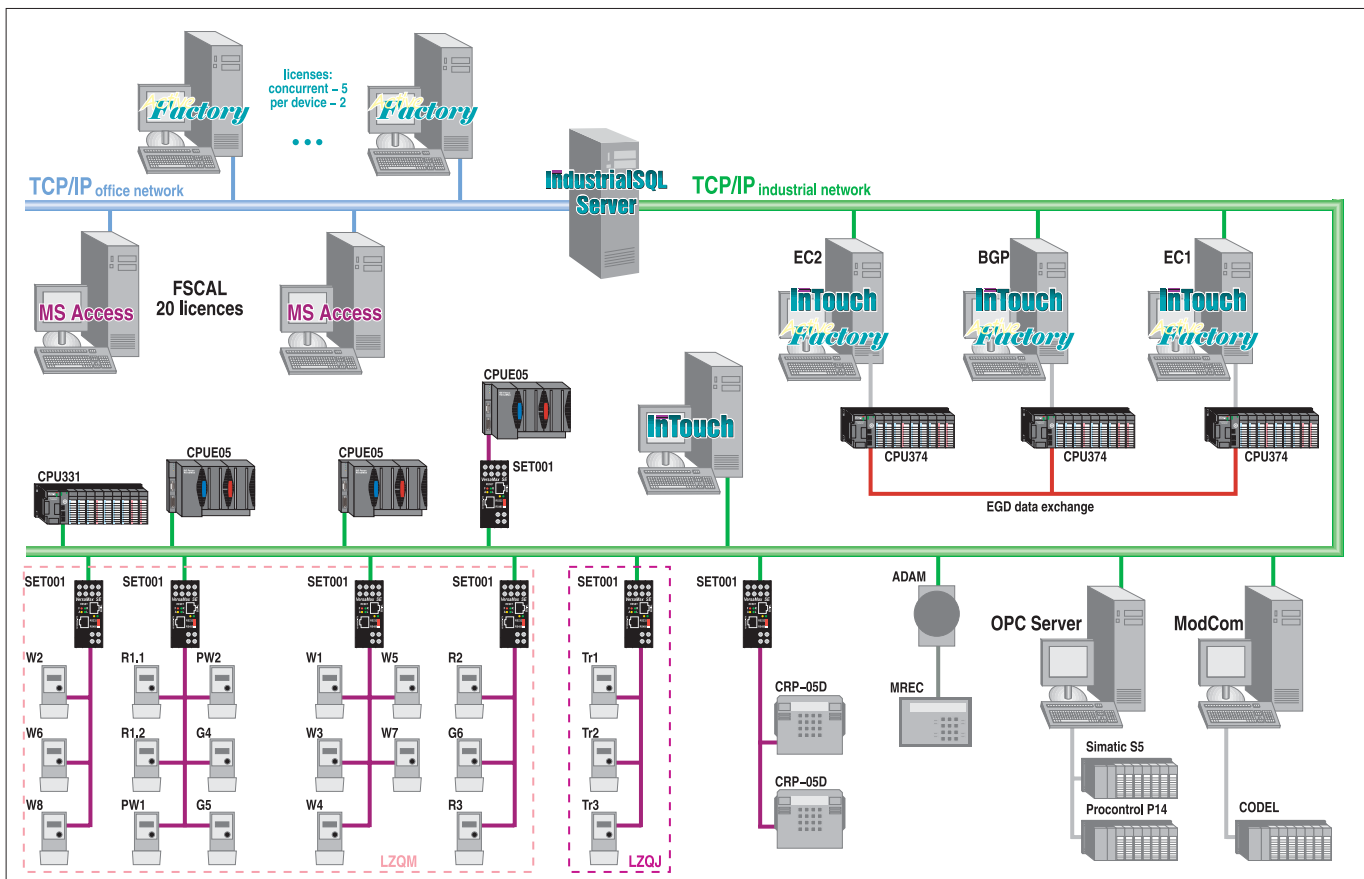


Fig. 3: Production management and retail of energy diagram in Gorzów

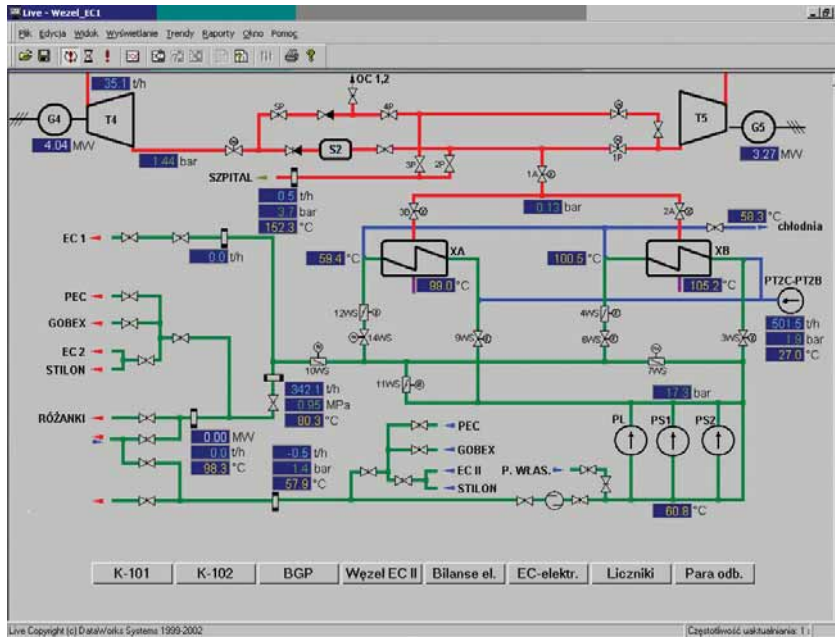


Fig. 4: EC 1 technology

Electric energy counters with a function of remote data transmission to the IndustrialSQL Server were used for this purpose (simultaneously with Distribution Network Operator). Once a day data readout and time synchronization of 20 electric energy counters is made. Thermal-Electric Power Station Gorzów Inc. owns a gas-steam block, supervised with Procontrol system. Confidence in developed visualization system and growing operating demands caused a decision about coupling Procontrol system with IndustrialSQL Server database.

Wonderware solutions applied in Thermal-Electric Power Station Gorzów Inc are very important component of production management, and effective tool for production quality definition. Fast and precise results analysis of heat and electric energy production influences the economical results of the whole company.

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The system was developed during the last investment, connected with a modernization of method of transferring heat into a heat distribution network. According to assumptions, three parallel operator stands were created, with an access to every heat water source each. System was built and started by Abis company. It contains 3 InTouch nodes, 3 ActiveFactory applications and 3 GE Fanuc 90-30 PLC controllers.

System data is stored in IndustrialSQL Server, while office network computers have ActiveFactory software installed. IndustrialSQL Live module contains parameters visualization for all system measurements.