S.C. Johnson Corporation, Kiev, Ukraine

Process automated control system

S.C. Johnson - Customer details

The company is considered as one of the leading producers of aerosol cans on the Ukrainian market, which finished the year 2004 with the increase in working capital from 28,7 to 36,34 million USD (26,6%).

Project implemented by CSC-Automation:

Control system

Number of subsystems	2
Number of AI/AO	60
Number of DI/DO	320
Number of PID-loops	4
Number of SCADA-variables	500
Number of operator's work stations	2
Project implementation period	6 months
Start-up date	April 2006
Line capacity	40 million cans per year

Application:
- receive and storage of hydrocarbon propellant;
- outfeed of hydrocarbon propellant for can production;
- explosion proof operation.

In addition, the control system ensures collection and display of data; historical and real-time trending of processing and result information, shift reports development.

Short description of a process

The process includes the following process lines and equipment:

- Automatic drain point of hydrocarbon propellant, designed for a tank truck of 10 m3 and equipped with an automatic sprinkler system for fire fighting;
- Underground storage for hydrocarbon propellant (5 underground tanks / vol.25m3 each) with manifold pipe system;
- Compressor plant (compressors FAS, Germany);
- Pump house (impeller Travaini, Italy);
- Molecular post-treatment for hydrocarbon propellant (Sieco, Italy)
- Combined outfeed and infeed air ventilation system
- Control box and production line, which contains automatic treatment, filling, testing and packing of aerosol cans.

Main technical solutions:

- Two control subsystems: main engineering process control PLC1 and emergency protection PLC2 based on PLCs by Mitsubishi Electric Q-System (Q02HCPU);
- Mitsubishi Electric FRA-540 frequency inverters for three-phase motors to maintain pressure in hydrocarbon propellant, put into production line by means of programmed PID –control loops;
- 100% redundant operator's interface based on Citect-SCADA (Australia) software;
- Using of high precision instrumentation and control for measuring temperature, pressure, product level in tanks, product mass flow (JUMO, KROHNE, Turck (Germany), United Electric (USA));
- Using of intelligent gas detectors by Drager (Germany) to ensure explosion proof operation;
- Using of the intrinsic safety barriers by Pepperl&Fuchs;
- Connecting to the control system of packaging line via optic data processing network;
- Data processing for the Manager Clients and communication via Ethernet;
- Local control systems for packaging machines based on Mitsubishi Electric FX-2N PLCs and GOT operator's panels.
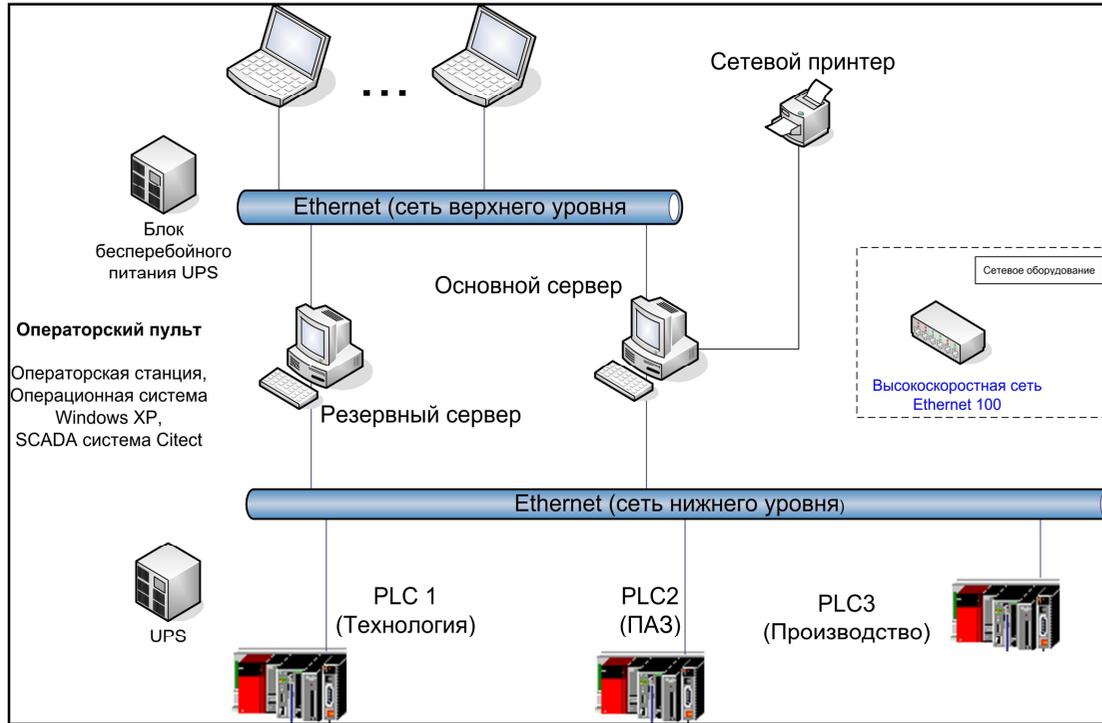
System structure
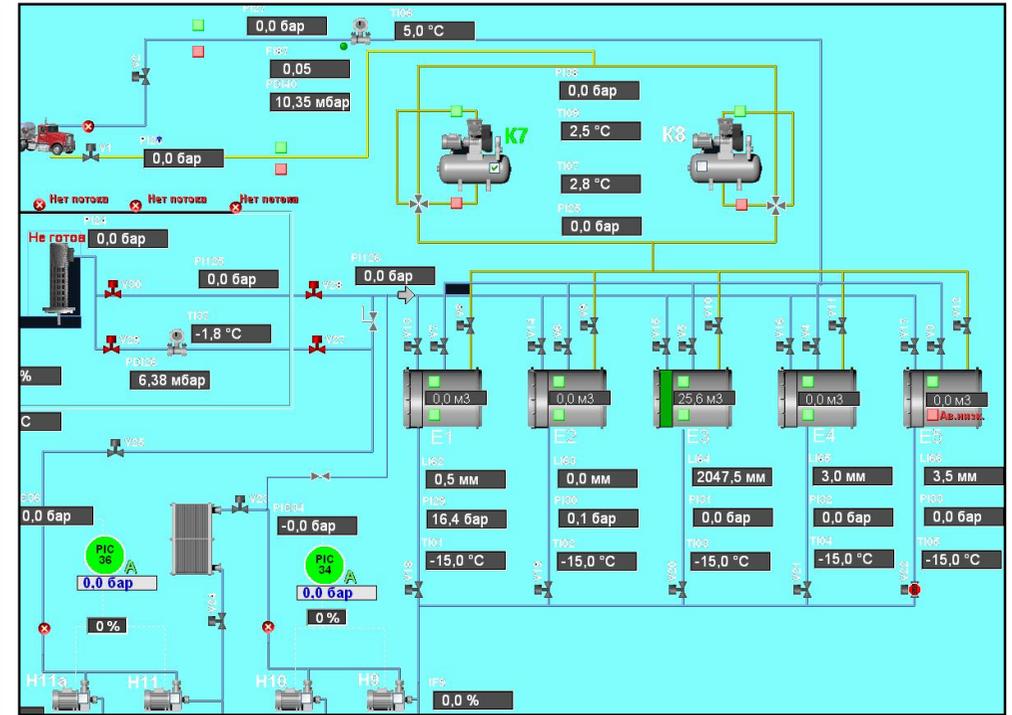
Operator interface example