

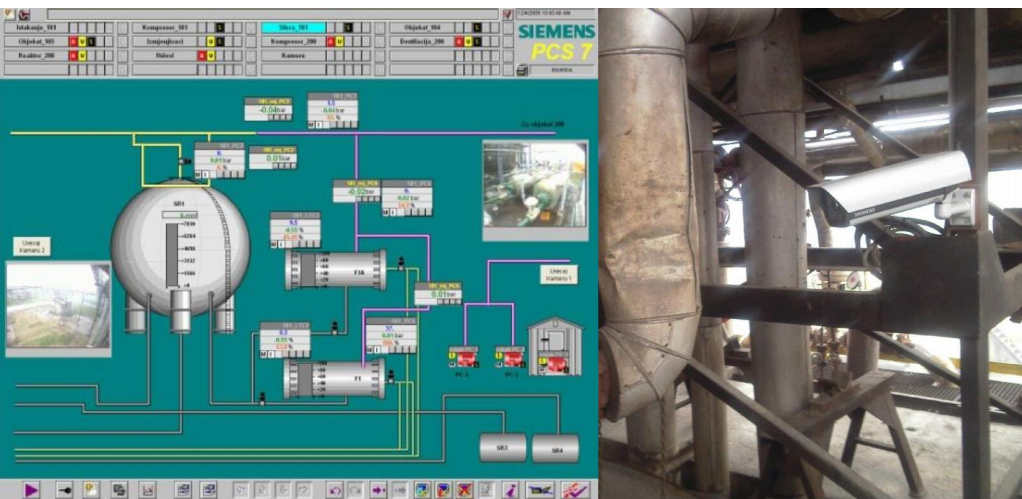
reference

ELCOM d.o.o. is specialized in Totally Integrated Automation (TIA), containing electrical engineering and software development for the automation of production processes and machines, production of MCC and control cabinets as well as onsite installation, commissioning and acceptance testing (FAT, SAT, SIT)



Automation solution for fertilizer production plant

Customer: Global Ispat Coke Industry Lukavac, BIH



Certificates

We have proven our competence as Siemens Solution Partner Automation in the following areas:

- Automation System SIMATIC
- Human Machine Interface SIMATIC HMI
- Process Control System PCS7

Process description

Gaseous ammonia, which comes from the plant 180 at a pressure of about 2.5 bar and temperature of about -14 °C is liquefied in the compressors and stored in the SR-1 with liquid ammonia, which comes directly from plant 180.

Nitric acid is produced by first mixing ammonia and air in a tank. In the presence of a catalyst, a reaction occurs which converts the ammonia to nitric oxide at plant 200. The nitric oxide is further reacted in the presence of water to produce 56% nitric acid.

Nitric acid and ammonia are used to make ammonium nitrate at plant 313.

The two materials are mixed together in a tank and a neutralization reaction occurs, producing ammonium nitrate. This material is then granulated with the other components. Method of granulation involves putting the solid materials from plant 311 into a rotating drum which has an inclined axis at plant 313. As the drum rotates, pieces of the solid fertilizer take on small spherical shapes. They are passed through a screen that separates out adequately sized particles. A coating of inert dust is then applied to the particles. Finally, the particles are dried, completing the granulation process.

Challenge

Implementation of a cost efficient and user friendly process control system with as less as possible classical cabling which have to result in a very fast and easier cabling, engineering and commissioning of a very high level.

A very detailed diagnostics and maintenance management for the components of the process control system was a must. Installation of a reliable fail-safe system to protect the plant in case of process malfunction.

Integration of SIVICON camera monitoring into PCS7 environment.

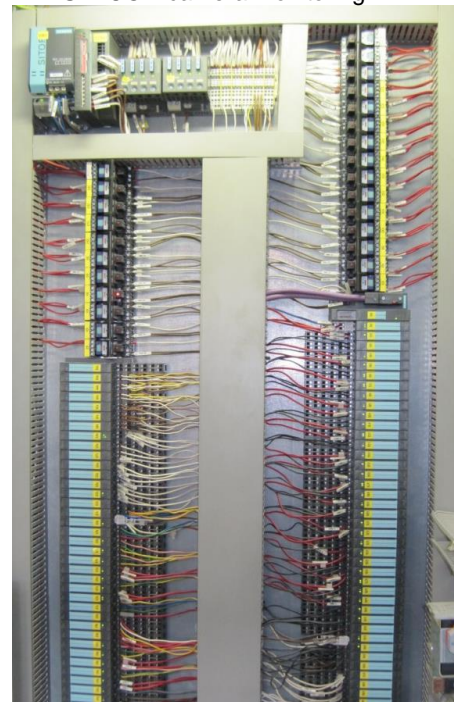
Solution

The solution is a PCS7 v7.0 SP1 architecture with a completely network based topology. 5 Clients and 2 redundant servers are connected via industrial Ethernet to 1 controller AS416-2. Process instruments are connected to the system via Ex barriers or Profibus PA. Installation of process instrumentation with HART capability enables fast commissioning and maintenance. Remote I/O cards are connected to system via ET200M and ET200S.

Project overview

- Sections in Atex zones
- 150 motors
- 50 on/off valves
- 50 control valves

- 250 analogue instruments
- 1500 digital signals
- Control system PCS7 V7.0 SP1
- process controller AS416-2
- 1 redundant OS server pair
- 5 OS clients
- ET 200M and ET200S
- Based on network topologies
- Industrial Ethernet and Profibus DP/PA
- Almost all instruments and control valves with HART capability
- SIVICON camera monitoring



Information about the Siemens Solution Partner Program

Under the Siemens Solution Partner Automation and Power Distribution Program, we join forces with our Solution Partner. By merging our product and systems expertise with the application and industry knowledge of our partners, we have created a common basis for the fast, smooth and highly efficient implementation of your requirement – customized solutions for your competitive advantage.

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