



# CSC-AUTOMATION



**Control system installed at the Milkovski oil-gas condensate field NGDU « Tchernigovnephtegaz»**



**Mitsubishi Q4AR  
Redundant process control**





**Customer:** Joint venture between ZAO « Internapftotrade» and NGDU «Tchernigovnephtegaz» Pryluki.

**Contractor:** «CSC-Automation» Ltd, Kiev.

## Specification:

The data acquisition - controlling system is designed for performing data acquisition and control functions with the following features:

- Control of the main process data, maintenance of the set control process;
- Diagnostics of the critical parts of the control system;
- Supervisory control of the valves, pumps and fans;
- Process loop control task;
- Permanent analysis of the parameter changes within the limit and critical values with the display of corresponding messages;
- A user – friendly display and acquisition of the data relevant to current process variables;

## Objectives:

The system has been developed to secure more efficient process control, which enables:

- Increase of the quality and reliability of the process control;
- Scope for future expansion of the system;
- Supply with high-end hardware;
- Improvement of the operator working conditions through the centralization of process control and management;
- Ensuring safety for the process operation and qualitative characteristics.

## Main process installations:

- gas separation area
- flare separator
- methanol equipment
- odorization and gas commercial accounting
- drainage tank
- effluent treatment plants
- compressed air area
- rear gas area
- condensate tank
- condensate pump station
- filling stand

All the process installations are approved accord. ATEX II ½G IIC.

## Technical solution:

- Application of the redundant PLC Mitsubishi Electric Q4AR using two redundant processors and power supply units, as well as a redundant device for communication with the object
- Use of redundant structure at the level of operation control (SCADA-level)
- Use of fail-safe power supplies for controllers, control station, and network equipment level
- Data acquisition of process parameters and events occurred in the system for their consequent reporting, analysis and control of the operator handlings;
- Industrial networks MelsecNet and Ethernet





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## The characteristic features of the controller:

- redundancy of processor and power supply modules, as well as redundant I/O cards;
- modular construction that enables an easy upgrading and modification of the controller configuration;
- «online-change» of the controllers programs during their operation mode without stopping the current process;
- high - speed process modules;

## **Control functions:**

- Remote control of the valve actuators;
- Automatic control of process parameters in single and cascade loops;
- Process control at the SCADA level.

## **Optional functions:**

- diagnostics of the system hardware;
- enhancement in safety – reliability and fail - tolerance;
- MES and ERP connectivity.

## **Reliability indexes:**

- mean life for data acquisition and control functions failure – min. 20.000 h;
- the same for safety protection – min. 120000 h.;
- mean recovery time for every function – max 0,5 h;
- life time of the system– min. 10 years

