“PRIUS”, A SOFTWARE-HARDWARE SYSTEM FOR CREATING AN AUTOMATIC PROCESS CONTROL SYSTEM IN POWER INDUSTRY

Description
Programmed data-control system (PRIUS) is a complex of software - hardware tools permitting automatic process control systems (APCS) creation, which possesses a complete set of functions of control and monitoring of the by basic and auxiliary equipment of a power unit. The system allows one to collect and process data on the object and system status, to calculate generalized parameters, to analyze logic conditions, to represent and record data, to take control decisions and to issue commands for their implementation, to automatically regulate and control interlocks and protections, to change operating conditions of equipment and to form control algorithms in an on-line mode.

Technical specifications
- The total number of input and output signals reaches 12 thousand with a possibility of their continuous verification and diagnostics.
- The information-renewal cycle is smaller than 2 sec.
- The delay in reflection of discrete changes of the control-object status and the delay in transmission of operator’s instruction are smaller than 0.5 sec.
- The error of emergency event recording is smaller than 1 msec.
- The accuracy class of the software-hardware system as a measurement tool is 0.2.
- The basic equipment and intersystem buses are duplicated, and protections are tripled.
- The concept of bus redundancy - simultaneous work with the controller (two from two).

System implemented at the Surgut state district power plant No. 1

Technical appraisal and economic benefits
The system has the following distinctive features:
- Operation in the real time of basic processes.
- Distributed data processing.
• Open architecture.
• Adaptability.
• Portability
• Scalability
• Friendly object-oriented graphic interface.
• Visual support of APCS maintenance and adjustment operations.

Application area
The system is aimed at using in power industry, oil, gas and other branches of industry. Potential customers are power-producing enterprises, electrical networks, and oil and gas transport companies.

Development stage
The systems are in experimental and industrial operation at enterprises of the "Tumenenergo" open joint-stock company. An APCS project was developed an oil-pumping station for the "Kaztransoil" close joint-stock company.

Patent situation
Not available.

Commercial offers
Procurement contract.

Estimated cost
205 USD per parameters in a system for 3500 - 5000 parameters.

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