

## ABOUT CONSORTIUM

The consortium "RUBIN-AUTOMATION" consolidates professional experience of key specialists in the field of automated control systems.



INVESTIGATION



DESIGNING  
AND INSTALLATION



MONITORING  
UTILITIES



UTILITIES



SCIENCE  
AND EXPERTISE



TRAINING  
AND PROFESSIONAL  
DEVELOPMENT



a pool of scientists, experts, designers, practical engineers, highly skilled workers as well as specialists in various fields of expertise connected with issues of providing effective control over automation objects.



An engineering centre engaged in a wide range of projects and services from making draft proposals, designing and coordinating the project appraisal to actualizing and maintaining automated systems.

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## CONSORTIUM RUBIN-AUTOMATION

*Professional solutions  
– basis for development!*



### Automatic Process Control System (APCS) for boiler houses



#### Control objects

- Individual (independent) boiler houses, peak-load boiler houses, boiler houses of industrial enterprises, local, block and district heating stations equipped with single-burner and multi-burner steam and hot water boilers using gaseous or liquid fuel.

#### Goals of introduction

- Introducing optimal heat supply modes.
- Preventing or reducing damage from accidents (with prompt localization).
- Displaying reliable and timely technological information on the monitors of the control station.
- Reducing production costs as well as nonmanufacturing costs due to "underestimation" and excessive consumption of energy resources.

## System functions

- Measuring key technological parameters of the boiler house in the scope of the requirements of Construction norms and regulations (SNiP) II-35 (temperature, pressure, consumption, level, etc.) and displaying them on the operator's console.
- Logging the status/position of actuating mechanisms and sensors and displaying them on the operator's console.
- Remote manual and automatic control of boiler units, a gas-air path, plenum-and-exhaust ventilation, chemical water treatment, a deaeration-feedwater and pressure-reducing and desuperheating station, main-line, circulating, boost, drain pumps.
- Warning lights and audible warning in case of going beyond the preset parameters values and detecting equipment failures.
- Automatic keeping the preset values of technological parameters of the boiler house in accordance with the requirements of SNiP II-35.
- Commercial/technical accounting of supplied heat energy and heat carrier, consumed fuel (gas/fuel oil/diesel fuel), chemicals, electric power, heat energy and heat carrier for the company's own needs.
- Calculating the boiler house equipment running time.
- Sending information on the equipment current status, parameters and status of the process to the district and (or) central control station.

## System features

- Modularity (modular principle of software structure).
- Openness (support of open communications protocols).
- Scalability and replication (option to increase the system information capacity without stopping its functioning).
- Using specialized fail-safe remotely controlled communication channel for unreliable, slow communication channels.
- An option of 100% redundancy of controllers, servers of collecting and storing data, users' automated workstations.
- A large drivers library for instrument gages.
- Implementation of all functions (measurement, recording, control, regulation) on the basis of a single software and hardware complex.
- Using certified software and hardware facilities including the ones entered in the State register of gages.

## Components

- Actuating mechanisms, incremental transducers, instrumentation transducers located in technological sections of the boiler house.
- Microprocessor controller DevLink-C1000 with modules for input/output of analogue and discrete signals which, depending on the task, maybe made according to the scheme of 100% "hot" sparing of controllers or 100% "hot" sparing of the controller processing (computing) part.
- Servers for collecting and storing data, users' automated workstations on the basis of SCADA KRUG-2000.

## Implemented projects

- "T Plus Teploset Penza", Penza.
- "T Plus SaranskTeploTrans", Saransk.
- "Teploservis", Saratov.
- "Airport Yamburg", Nadym district of Yamalo-Nenetsky Autonomous District.
- "Stimul", Novosibirsk.
- Municipal Unitary Enterprise "Pokrovsk-Teplo", Engels, Saratov obl., etc.