

**RELIABLE SOLUTIONS**

PROFESSIONAL APPROACH

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**PRESENTATION OF THE COMPANY**

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**2023**

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JSC Nefteavtomatika is an engineering and production company specializing in the development and introduction of automated process and production control, measurement and IT systems, manufacture of packaged process equipment, automation and measurement facilities.

The company was founded in 1969, it is a legal successor of VPO Soyuznefteavtomatika, a head company in the petroleum industry for automation and metrology. Today JCS Nefteavtomatika holds a confident position in the market among producers of measurement and automation systems for oil and gas enterprises.

The company undertakes projects for the manufacture and supply of equipment, comprehensive turnkey projects, possesses a geographically distributed state-of-the-art production base with a total area of more than 70 thousand m<sup>2</sup> and has an effective organizational structure.



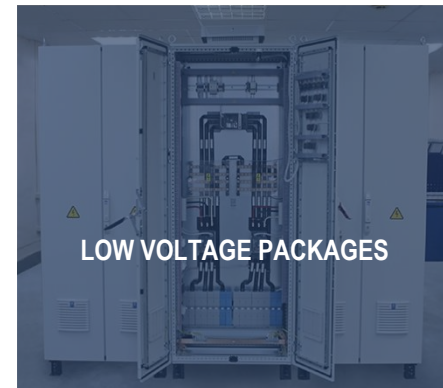
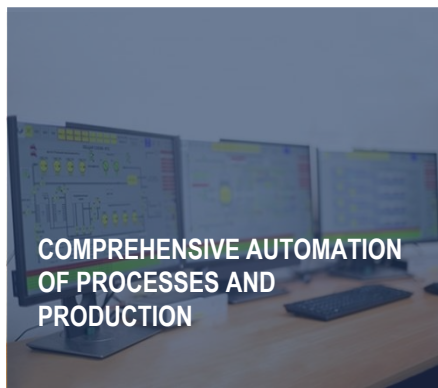
As of today, more than 2,500 people are employed by JSC Nefteavtomatika. Managers, engineers and qualified workers compose a solid united team with a target to complete projects in a timely manner and with a good quality, develop new solutions. The company's employees constantly advance their qualification, improve knowledge and undergo versatile training programs.

- Quality management system meeting the requirements of **GOST R ISO 9001-2015 (ISO 9001:2015)**.
- Quality management system meeting the requirements of **STO Gazprom 9001-2018**.
- Industrial safety and occupational health management system meeting the requirements of **GOST R 54934-2012/OHSAS 18001-2007**.
- Environmental management system meeting the requirements of **GOST R ISO 14001-2016 (ISO 14001:2015)**.



STO Gazprom 9001 certification confirms the quality and functional characteristics of the manufactured products, taking into account the requirements of the gas industry.

JSC Nefteavtomatika has all necessary resources and approved permit documents for the manufacture, supply, adjustment and maintenance of automation systems and facilities, hydrocarbons and utilities metering systems, process packages.

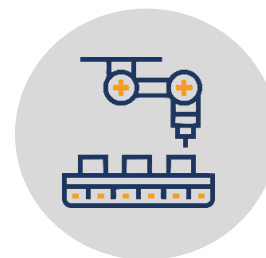




50 years of operation in the market of automation and metrology



Over 2,500 employees



Powerful production capabilities, over 70 th. m<sup>2</sup> of production facilities



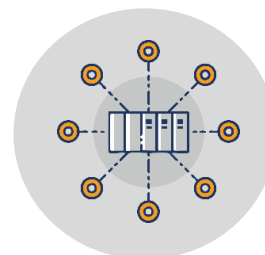
Possible automation for all levels of oil and gas enterprises and enterprises of other sectors



Extensive business geography – 18 adjustment and stand-alone subdivisions in all oil-producing regions of Russia



Large-scale comprehensive turn-key projects by our own resources



Development and manufacture of our own automation facilities, PLCs, intrinsic safety barriers, etc.



Quality management system as per ISO 9001-2015 and STO Gazprom 9001-2018

To carry out its activities, JSC Nefteavtomatika possesses its own geographically distributed production bases equipped with state-of-the-art equipment and technologies, as well as well-developed warehouse premises.



## WORKSHOPS PRODUCING PACKAGED EQUIPMENT AND MEASUREMENT SYSTEMS

**Location:** Serafimovsky settlement, Tuymazy district of the Republic of Bashkortostan in the territory of the Serafimovskya automation and telemetry pilot plant  
**Area:** 44,000 m<sup>2</sup>.  
**Products:** process packages and hydrocarbon metering systems.



## AUTOMATION AND LV PACKAGE CABINETS ASSEMBLY WORKSHOP

**Location:** Mudarisovo village, Ufa district, Republic of Bashkortostan.  
**Production base area:** over 4,000 m<sup>2</sup>.  
**Products:** Automation and power supply cabinets, low voltage packages.  
The production base includes a warehouse complex with a total area of 1,100 m<sup>2</sup>.



## AUTOMATION SYSTEMS TESTING WORKSHOP



## ELECTRONIC EQUIPMENT ASSEMBLY WORKSHOP

**Location:** Mudarisovo village, Ufa district, Republic of Bashkortostan.  
**Area:** 1400 m<sup>2</sup>.  
**Products:** PLCs of *MKLogic-500*, *MKLogic200* series, IS barriers *MIB 200 Ex* and other automation facilities

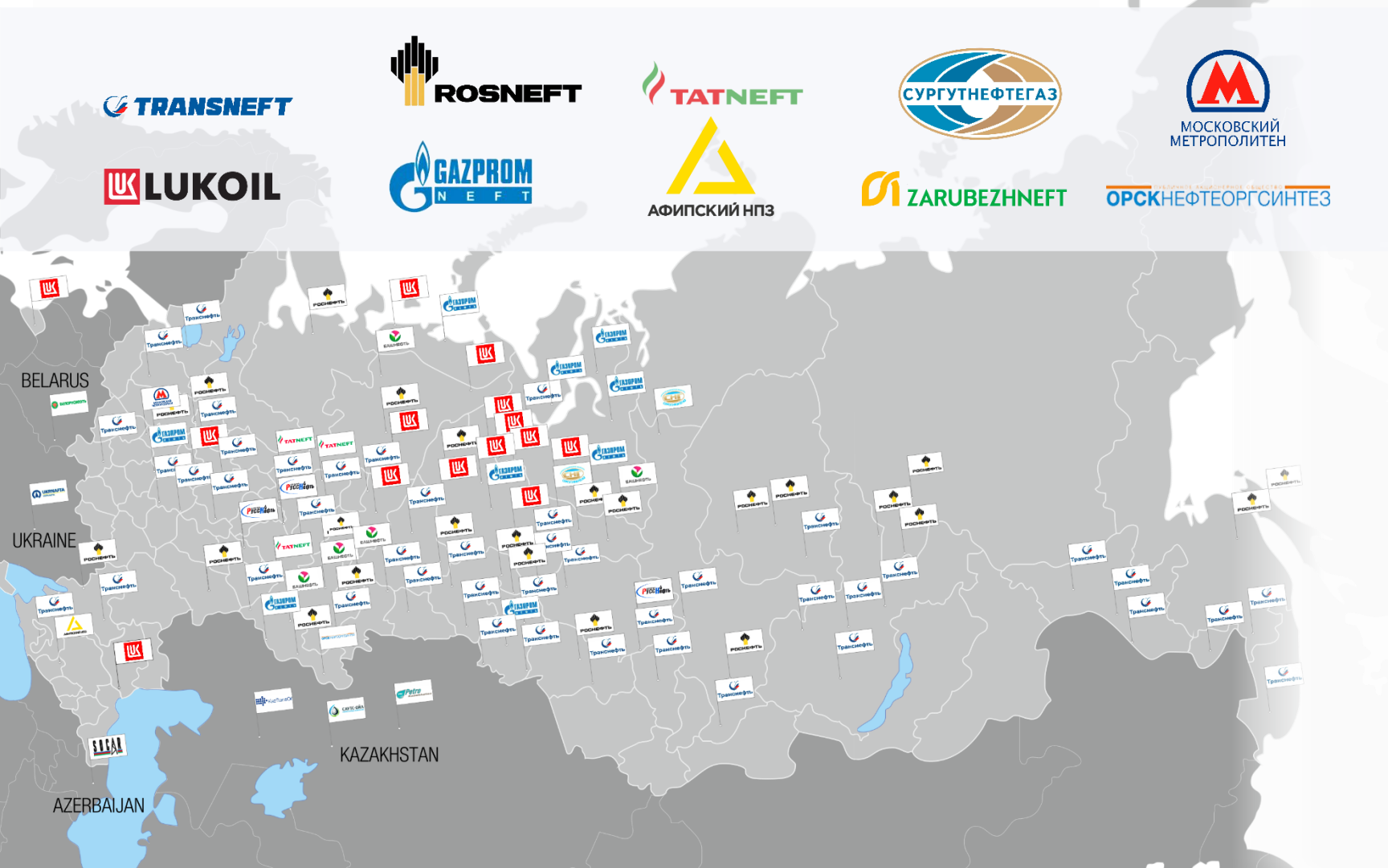
## WE ARE ALWAYS CLOSE TO THE CLIENT!

1. Central office of JSC Nefteavtomatika in Ufa;
2. Head scientific metrological center, stand-alone subdivision, located in Kazan and in Ufa;
3. Engineering and production center, standalone subdivision, located in Ufa;
4. Construction and installation department, standalone subdivision, located in Ufa;
5. Standalone subdivision in Nyagan;
6. Standalone subdivision in Omsk;
7. Standalone subdivision in Bryansk;
8. Standalone subdivision in Moscow;
9. Ufa adjustment department:
  - Krasnodar division of Ufa adjustment department;
  - Pokachi division of Ufa adjustment department;
  - Kogalym division of Ufa adjustment department;
  - Langepas division of Ufa adjustment department;
  - Izhevsk comprehensive section of Ufa adjustment department;
  - Khanty-Mansiysk division of Ufa adjustment department.
10. Almeteyevsk adjustment department;
11. Serafimovsky automation and telemetry pilot plant (SOZAIT, LLC).



# CLIENTS AND COMPLETED PROJECTS GEOGRAPHY

Our Clients are the largest companies in the oil and gas and related sectors of industry in the Russian Federation and CIS:  
Transneft, Gazpromneft, Rosneft, Lukoil, Tatneft, Orsknefteorgsintez, Afipsky Oil Refinery, Moscow Subway, Zarubezhneft,, Surgutneftegaz, Socar, PetroKazakhstan, etc.





Start of activities related to automation of oil production facilities. Creation of Soyuznefteavtomatika, All-Union production enterprise, in Ufa

**1969**



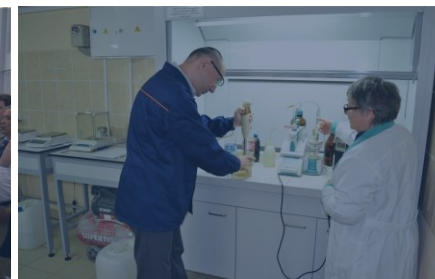
Development of control systems for oil and gas production facilities, oil transportation, development of information systems. The enterprise includes 8 trusts, 15 installation and adjustment areas from Baku to West Siberia and Sakhalin

**1980**



Reorganization into OJSC Nefteavtomatika, preservation of the multidisciplinary structure of activities with affiliates and adjustment departments

**1993**



Creation of Head Scientific Metrological Center. Start of packaged pump stations production

**2009**

**2023**

**1970**

Implementation of dynamic oil metering, start of oil custody transfer stations production

**1988**

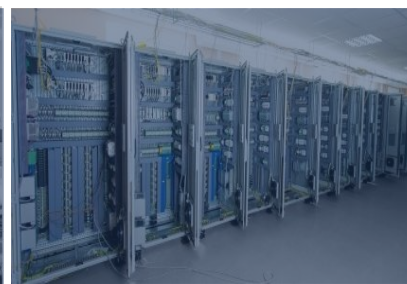
An affiliate of the enterprise, TsNTO Signal, started to carry out adjustment and maintenance activities for automation systems at the largest fields of the country

**2002**

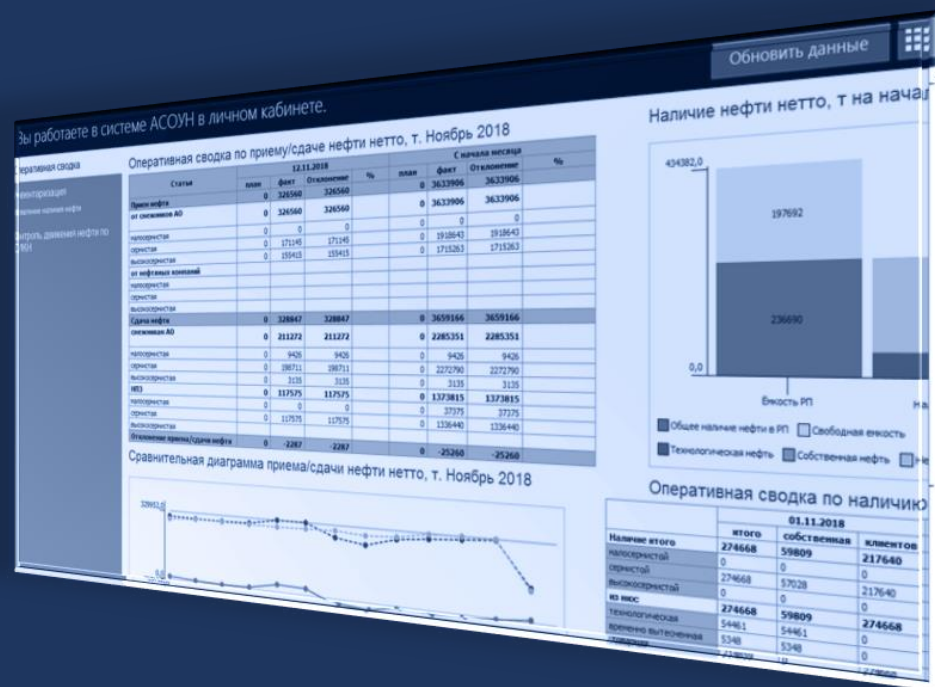
Growing scope of work for the supply of measuring instruments, development of comprehensive automation systems for oil and gas production, wider range of facilities for main oil pipelines, creation of MES-level systems

**2018-2020**

Construction of new production facilities for the assembly of packaged equipment. Opening of an engineering production center for serial production of PLCs



# DIGITALIZATION, INTELLECTUALIZATION AND INTEGRATION OF CONTROL SYSTEMS FOR OIL AND GAS ENTERPRISES



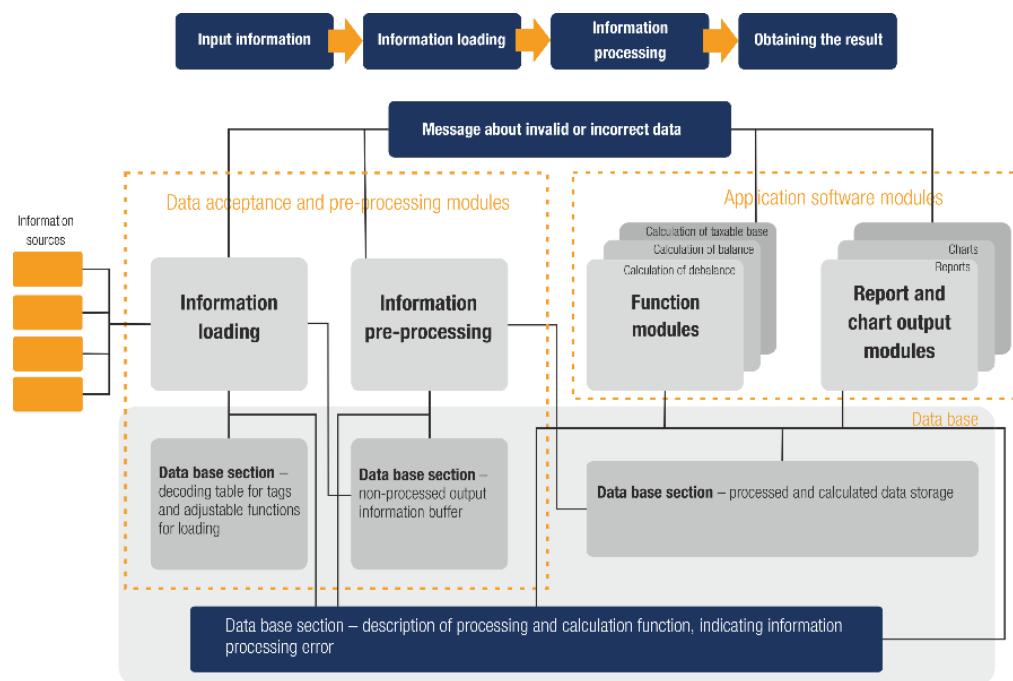
The company performs a full range of works on the creation of automated production control systems: inspection, development of technical assignments and design documentation, implementation of the developed software at the Client enterprises, testing, commissioning.

## INSTRUMENTATION: SOFTWARE AND INFORMATION PLATFORM FOR CREATION OF AUTOMATED PROCESS CONTROL SYSTEMS «Nafta MES Platform»

The platform meets all state-of-the-art requirements:

- Multidisciplinary (ability to configure the information model of various processes);
- Integration with existing informational measuring systems and availability of an interface to transfer information to external systems;
- Configuring of information processing and calculation the specified parameters for a system, ability to bring the data of existing automated systems to comparable conditions of calculations;
- Data verification;
- Verification of reliability for the processed measurement results;
- Configuring of screen forms and report documents, calculation and visualization of key production performance indicators for heads of enterprises and other decision-makers;
- Information security requirements;
- Metrological support of the system;
- System operability monitoring.

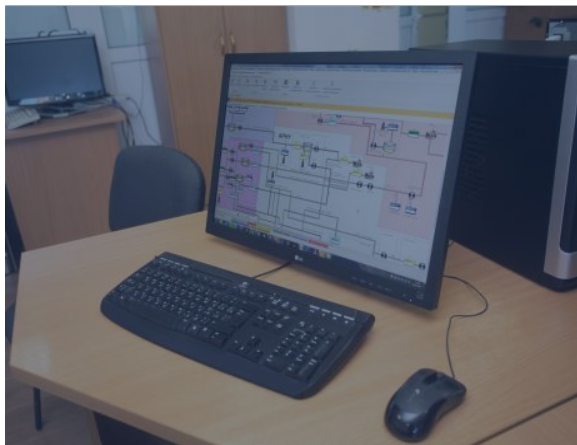
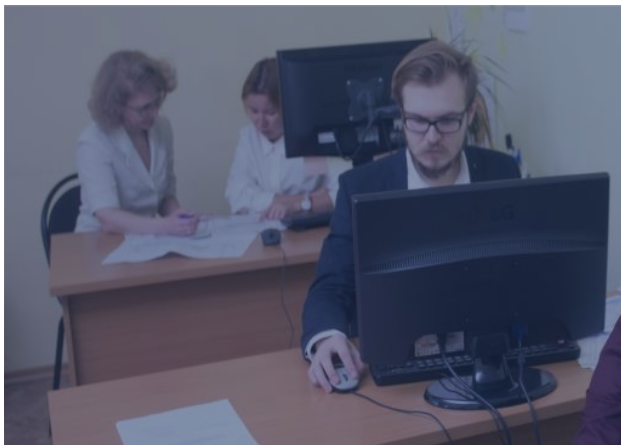
## TARGET: EFFECTIVE PRODUCTION CONTROL



**Certificate of state registration**  
**No. 2021668869 dated 22.11.2021**



The software and information platform of JSC Nefteavtomatika is an effective tool used to create optimal digital twins of enterprises with the possibility to introduce intelligent technologies, their integration, and ensure work with big data.



JSC Nefteavtomatika pays great attention to the development of "automated conveyor for the production of integrated ACSs", namely:

- Automation of the simultaneous work of a team of system analysts, designers, programmers, testers and other specialists;
- Version control for software and databases that are in development and at the client's facility;
- Creation of operational documentation and keeping it up to date;
- Follow-up/technical support of previously created systems at the client's facility.

## **Advantages of work on the creation of production control systems directly with the platform developer:**

- Flexibility of the created systems;
- Independence from other software providers;
- Ability to carry out research work and search for new solutions to control problems together with the client, thereby increasing the level of system intellectualization .

## «Nafta MES Metrological Management»

Software complex used to control metrological support processes of the enterprise.

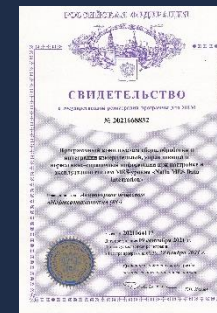
It operates on the Nafta MES Platform software and information platform and is designed to control metrological support processes of the enterprise.



## «Nafta MES Data Integration»

Software complex used to collect, process and integrate measurement, control and reference information when setting up and operating MES-level systems.

It operates on the Nafta MES Platform software and information platform and is designed to collect, process and integrate measurement, control and reference information when setting up and operating MES-level systems.



## «Nafta MES Leak Detection»

Software complex for pipeline leak detection systems.

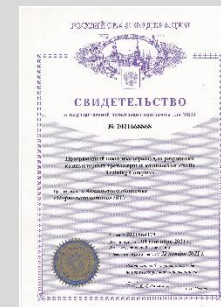
Designed for automation of works when monitoring and controlling the integrity of a diagnosed pipeline section, with predetermined characteristics in terms of time of detection, size and accuracy of leak detection in all modes of pipeline operation.



## «Nafta Training Complex»

Software complex (environment) for the development of computer simulator complexes. The environment for the development of computer simulator systems is a set of software tools designed to create computer simulator systems on its basis to train the operational and maintenance personnel of the enterprise for the work on real process equipment, maintain

and evaluate their qualifications, develop skills for safe and economical equipment control in complex transitional and emergency modes, etc.



# MONITORING, ANALYTICAL, MANAGEMENT AND INFORMATION AND METERING AUTOMATED CONTROL SYSTEMS FOR ENTERPRISES OF THE OIL AND GAS INDUSTRY AND RELATED INDUSTRIES

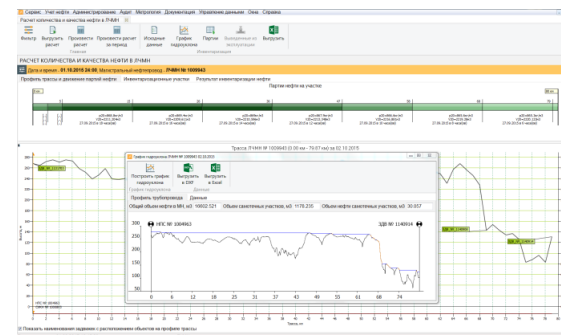
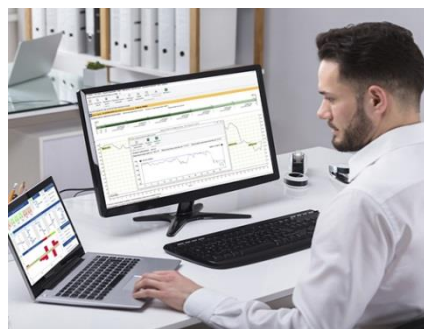
Solutions of JSC Nefteavtomatika were developed for Russian and joint ventures in the oil and gas industry.

Using the software of JSC Nefteavtomatika, the following production control systems have been implemented:

- Information and metering systems at a level of an enterprise used to keep a real-time record of quantities and quality of produced and treated oil, gas, water, as well as oil and oil products transported via in-field and main pipelines;
- Monitoring and analytical control systems for production and processes;
- Real-time dispatcher control systems;
- Control systems for production assets;
- Control systems for projects, works, personnel;
- Control systems for regulatory engineering documentation and documentation support.



The greatest effect from the creation of automated enterprise control systems on the platform of JSC Nefteavtomatika is achieved in vertically integrated companies (VICs), geographically distributed production facilities and sparsely populated remote automated oil fields.



# COMPREHENSIVE AUTOMATION OF PROCESSES AND PRODUCTION



## INDUSTRIES OF APCS:



The company carries out the whole package of activities for the development and introduction of new APCSs for industrial operation, as well as revamping and upgrade of the existing control systems or separate subsystems, and their integration in a single process automation system.

## KEY ACTIVITIES:

- Design of APCS and communication systems, development of detailed design and vendor documentation.
- Development of application software.
- Outfitting and assembly of automation cabinets at our own production area.
- Acceptance tests at the manufacturer's plant and comprehensive tests at the facility.
- Installation and commissioning activities.
- Start-up of systems and their integration in the existing ACS of the upper level.
- Guarantee and service maintenance.

## SYSTEM KINDS:

- APCS for process and production facilities.
- Local control systems.
- Auxiliary systems: process communication, video surveillance, safety systems.
- Fire safety systems.
- Systems of industrial automation manufactured in house.

## OUR OWN MANUFACTURE – AUTOMATION AND LV PACKAGE CABINETS ASSEMBLY WORKSHOP AUTOMATION SYSTEMS TESTING WORKSHOP



**AUTOMATION CABINETS ASSEMBLY WORKSHOP** and a warehouse complex with a total area of more than 4000 m<sup>2</sup> are located in the Ufa region of the Republic of Bashkortostan and are part of the Production base of the enterprise.

- The automation cabinets assembly workshop produces more than 600 cabinets per year.
- The areas of the assembly workshop are divided into zones that correspond to the stages of production and allow the assembly of both wall-mounted and floor-standing cabinets, consisting of several panels.
- The workshop uses equipment from the world's leading suppliers of components (Schneider Electric, Phoenix Contact, RITTAL, ABB, etc.).
- All work is carried out in accordance with the Client's ready-made documentation or according to our own developed engineering and design documentation on the basis of a technical assignment.

### WORKSHOP ACTIVITIES:

- Automation and LV package cabinets assembly;
- Design and engineering support;
- Making packages from products and materials;
- Packing and shipment.

**TESTING WORKSHOP** is equipped with all necessary test benches and samples to simulate the parameters of real automation facilities, and it can test 15 automation systems at a time.

All carried-out activities meet the requirements of industrial safety and quality management standards. Thanks to comprehensive tests during production, time required for commissioning and startup activities for automation systems is significantly smaller.

# AUTOMATION OF OIL AND GAS PRODUCTION FACILITIES

An automated process control system for oil and gas production and treatment includes APCSSs for individual process and on-site facilities. All APCSSs are independent and functionally complete systems. At the same time, their creation involves solutions ensuring information integration in a united oil production, treatment and transportation system.

- APCS for well pads;
- APCS for booster pump stations;
- APCS for oil treatment units;
- APCS for gas treatment units;
- APCS for gas compressor stations;
- APCS for gas turbine / gas engine power plant;
- APCS for oil custody transfer stations;
- APCS for reservoir pressure maintenance subdivision;
- APCS for tank farms;
- ACS for firefighting;
- Local control systems;
- Leak detection systems.



## EXAMPLES OF COMPREHENSIVE PROJECTS

**APCS and dispatcher control center** for Pyakyakhinskoe oil and gas condensate field infrastructure. Lukoil-West Siberia, LLC  
Facilities: Oil delivery and acceptance points, compressor/pump stations, waste treatment facilities sewage, oil treatment units, reservoir pressure maintenance shops, de-ethanization and stabilization units, gas treatment units, linear telemetry, well pad telemetry  
Over 15,000 signals

**APCS for FWKO unit No. 1** of Samotlorskoe oil field JSC Samotlorneftegaz  
Over 3,000 signals

**APCS of Chernushka delivery and acceptance point** for Lukoil-Perm, LLC  
Over 3,000 signals

**APCS of fuel gas treatment unit, automated firefighting system and communication system, APCS of methanol, propane butane, stabilized condensate pump station** at South Kislovskoe gas condensate field for Bykovogaz, LLC  
Over 3,000 signals

**Integrated APCS of the central gathering station and security system of Kharyaginskoe field** for Zarubezhneft-Kharyaga Production, LLC  
Over 4,000 signals

**APCS of oil and gas production unit and telemetry system** LUKOIL-Usinskneftegaz, Territorial Production Enterprise, Lukoil-Komi, LLC  
Over 15,000 signals

**APCS for oil treatment package** Gazpromneft-Development, LLC  
Over 5,000 signals

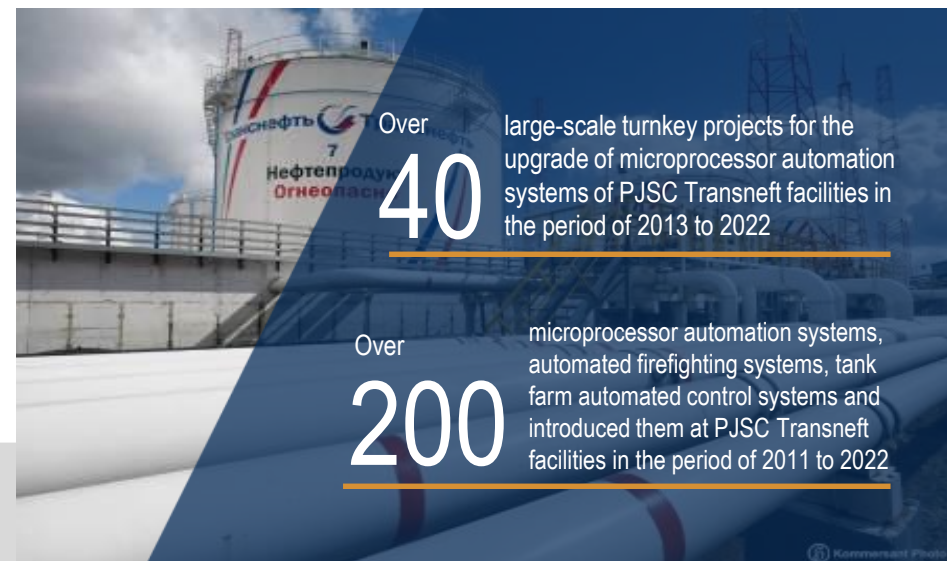
# AUTOMATION OF PIPELINE TRANSPORTATION FACILITIES

JSC Nefteavtomatika renders services for the creation and manufacture of process control systems for oil and oil products transportation facilities by implementing the whole scope of works for the development, supply of various compositions and implementation. The company has gained vast experience through its completed projects, and it fully complies with requirements for APCS in terms of safety, reliability, resistance to climatic factors. The projects are implemented in strict compliance with requirements of PJSC Transneft.

- APCS for oil pump stations;
- Automatic pressure control systems;
- Rated control parameters monitoring systems;
- APCS for oil custody transfer stations;
- Distributed APCS of tank farms;
- Automatic firefighting systems;
- Systems monitoring APCS engineering status in a real-time mode.

**The listed control systems were introduced for the following affiliate subdivisions of PJSC Transneft:**

- |                                  |                              |                                     |
|----------------------------------|------------------------------|-------------------------------------|
| ■ Transneft-Privolga, JSC        | ■ Transneft-Ural, JSC        | ■ Transneft-Port Primorsk, LLC      |
| ■ Transneft-Prikamye, JSC        | ■ Transneft-Diaskan, JSC     | ■ Mostransnefteprodukt, JSC         |
| ■ Transneft-Siberia, JSC         | ■ Transneft-North, JSC       | ■ South-West Transnefteprodukt, JSC |
| ■ Transneft-Central Siberia, JSC | ■ Sibnefteprodukt, LLC       | ■ Transneft-East, LLC               |
| ■ Transneft-Western Siberia, JSC | ■ Transneft-Upper Volga, JSC | ■ Transneft-Druzhba, JSC            |
| ■ Chernomortransneft, JSC        | ■ Transneft-Baltika, LLC     | ■ Transneft-Far East, LLC           |



# AUTOMATION OF OIL REFINERIES AND PETROCHEMICAL FACILITIES

JSC Nefteavtomatika renders services for the design, manufacture, supply, commissioning of process control systems for oil refineries and petrochemical facilities.

## APCS FUNCTIONS:

- Operational monitoring of parameters for oil refineries and petrochemical plants;
- Programmable logic control of equipment;
- Automatic control of equipment operating modes;
- Accounting of equipment operation time and consumption of raw materials and utilities (water, steam, gas, etc.);
- Long-term storage of operational information;
- Preparation of reporting documentation;
- Diagnostics of APCS equipment.

## EXAMPLES OF COMPREHENSIVE PROJECTS

### APCS for catalyst production

**Gazpronmeft-ONPZ, JSC**

Over 3,500 signals

### APCS for crude pump station and APCS for diesel fuel hydrotreatment and paraffin removal

**Gazpronmeft-ONPZ, JSC**

Over 2,200 signals

### APCS for oil delivery and acceptance station at Novoshakhtinsk oil products plant in order to increase the throughput up to 5.5 mtpa

**Novoshakhtinsk oil products plant, JSC**

Over 2,200 signals

### APCS for paraffin removal unit No. 39/1-2

**Gazpromneft-Lubricants, JSC**

Over 3,500 signals



### APCS and field instrumentation, analytical instruments and heated instrumentation cabinets for the Hydrocracking unit

**Orsknefteorgsintez, PJSC**

Over 5,000 signals

### APCS and instrumentation for hydrogen production unit

**Orsknefteorgsintez, PJSC**

Over 4,000 signals

### APCS for bitumen rail tanker loading rack

**Gazpronmeft-ONPZ, JSC**

Over 1,200 signals

## INDUSTRIAL AUTOMATION FACILITIES AND SYSTEMS



JSC Nefteavtomatika has an Engineering and Production Center, a subdivision for the development and production of tools and systems for industrial automation

## DEVELOPMENT

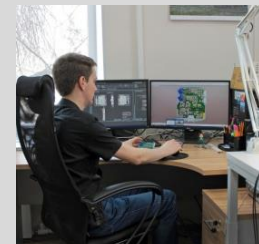
The Engineering and Production center employs a team of qualified specialists: programmers, designers, managers. We are constantly working on improving serial products, expanding the existing ranges of equipment. The specialists of the center create and develop new software and hardware products. Project management department is responsible for the high-quality equipment supplies to Clients.

## PRODUCTION

The Engineering and Production Center includes a Workshop for the installation of radio electronic equipment, with an area of 1,400 m<sup>2</sup>, equipped with high-tech equipment and warehouses for components and finished products. This allows the company to provide a full production cycle for the release of products and to carry out timely deliveries. Engineering and Production Center is responsible for the high-quality equipment supplies to Clients.

### PRODUCTION INCLUDES THE FOLLOWING PROCESS UNITS AND AREAS:

- Surface-mount line by Juki. The line includes:
  - Automatic screen printer GKG GL;
  - Automatic mounter JUKI KE-3020VAL, capacity of 21,000 components per hour;
  - Conveyor-type reflow oven JUKI RS-600;
  - Automatic mounter/dismounter of printed circuit boards;
  - EVO CAM quality Full-HD vision system.
- Manual assembly area.
- Automatic jet cleaning unit for printed circuit boards miniSWASH - 3.
- Selective moisture protection unit PVA Delta 6.
- Exhaust hood LK-900 ShV-MET and industrial drying cabinet 35/350-250-P.
- High voltage electrical safety tester GW Instek GPT – 79804.
- Verification and calibration area.
- Heat and cold cabinet used to test products for compliance with climatic indicators from +50 to -40 degrees.
- X-ray control unit YXLON Cougar used for input and output control of printed circuit boards and products using X-rays.



## TECHNICAL SUPPORT

The company's professionals can consult on all issues of applying the equipment, as well as can help in the setup and connection of PLCs and IS barriers.

## TRAINING

Training on setup and operation of equipment is provided for service personnel and technical specialists of the Clients in the format of consulting seminars and practical classes.

## PLC *MKLogic-500*®

Creation of large-scale general-purpose information and control complexes, distributed control systems (DCS) and emergency shutdown systems (ESD)



## PLC *MKLogic200*®

Creation of telemetry systems, as well as APCS of medium and low complexity for enterprises of various industries



## IS barrier *MIB*®

Ensuring intrinsic safety in electrical circuits of devices located in an explosive zone, as well as in alarm and emergency shutdown systems



## Media converter *T100E*

Conversion of data transfer medium using SFP modules for different media and interconnection of geographically dispersed network segments with an optic fiber communication channel



## Terminal modules *MT-500*

Simplification of control systems creation based on *MKLogic-500* series programmable logic controllers



## Direct current instrument converters *PTN-E2N-01*

Linear conversion of direct current into a unified output signal of constant voltage



We have all the necessary licenses and certificates for use in the territory of the Customs Union: certificates of type approval for measuring instruments; certificates of conformity to the requirements of CU TR 020/2011 Electromagnetic compatibility of technical means; certificates of conformity CU TR 012/2011 On equipment safety for operation in explosive media.

## NaftaProcess®

A distributed control system (DCS) NaftaProcess is a software and hardware complex used to control processes at enterprises of chemical, petroleum and oil refining industries.

## NaftaVision®

NaftaVision SCADA system is a software package designed for the development of information gathering, processing, displaying and archiving systems for a monitored or controlled facility and ensuring their operation in real time.

## NaftaSystem®

NaftaSystem - software and process complex used to perform the functions of measurement, monitoring and calculation of process parameters, control of the main and auxiliary processes and equipment, including at hazardous production facilities.

**DCS NaftaProcess** is designed with the understanding that the enterprise may need to solve the following tasks:

- Process a large quantity of process parameters (over 1000);
- It is undesirable or prohibited to stop the process;
- The process shall be displayed in a lot of operator workstations.

**NaftaProcess DCS** is developed in such a way that it does not have a unified data processing server which breakdown could lead to a loss of process visualization data.



We understand the importance of information security and created the following possibilities in **NaftaVision**:

- Data are coded starting from the level of controller to the level of integration into the upper-level systems;
- Authorization and limitation of access to data protect all system levels from unauthorized actions.

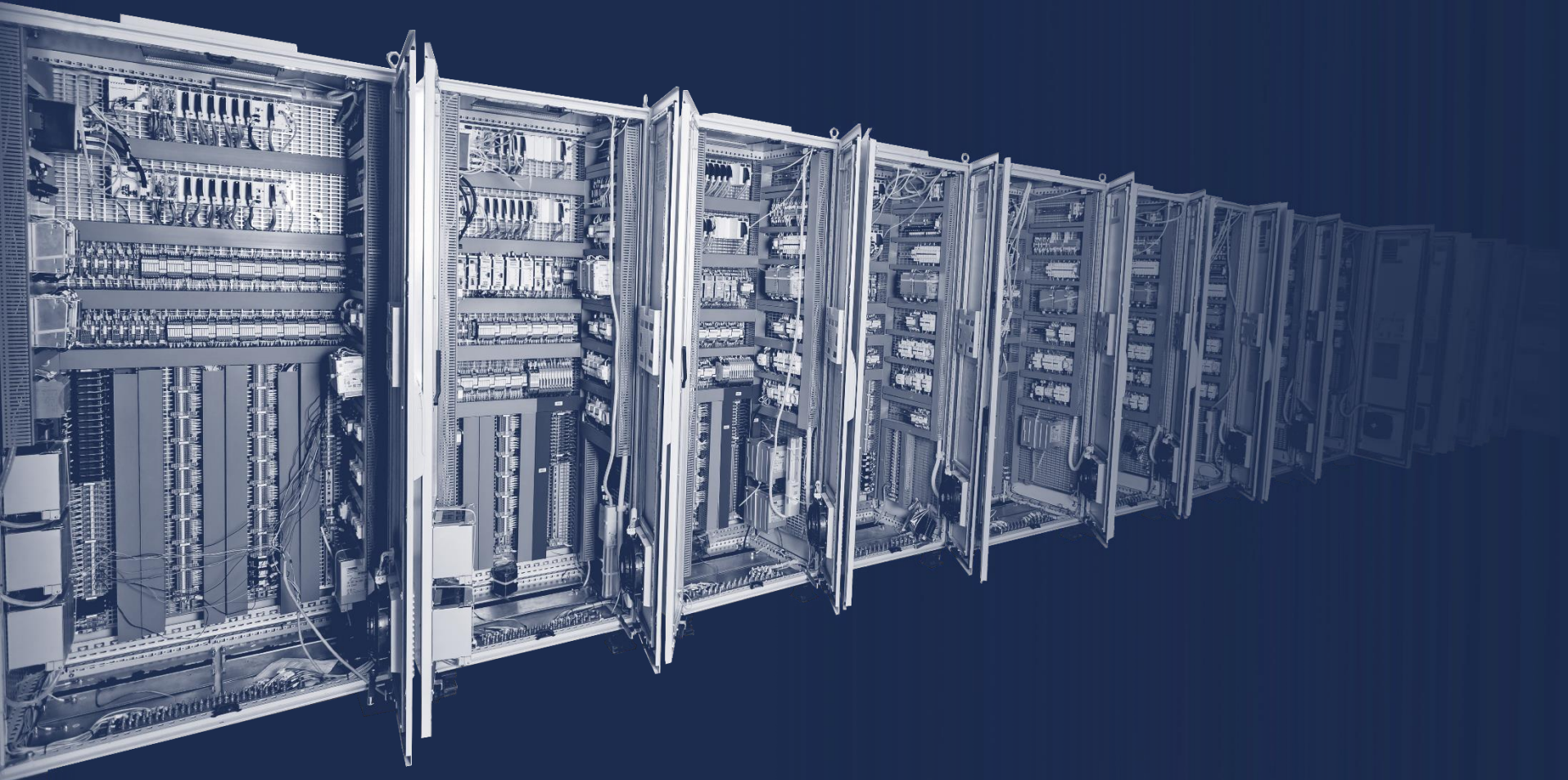
**SCADA NaftaVision** is created taking into account all experience of our company gathered for 50 years in the sphere of industrial automation.



The principle of the **NaftaSystem** software and hardware complex operation is based on analog-to-digital conversion of the measured value, followed by processing by the built-in microprocessor and data transmission through the respective interfaces, as well as digital-to-analog conversion. Features of the complex:

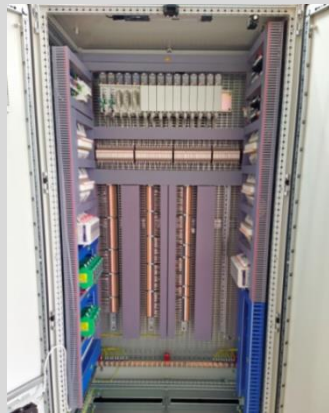
- conversion of input electrical signals into digital format;
- collection and special processing of information about the progress and parameters of the process in real time, display of all the necessary process parameters on the workstation of operators and dispatchers;
- remote and programmable logic control of actuators;
- automatic control of process parameters;
- automatic emergency shutdown of process equipment, control of protections and interlocks tripping.

# AUTOMATION AND TELEMETRY CABINETS, LOW VOLTAGE PACKAGES



## LIST OF PRODUCTS:

- Controller cabinets designed to create a control system functioning according to the algorithms described by process engineers and programmers.
- Telemetry cabinets designed to collect, process and transmit information about the functioning of the main and auxiliary equipment of a facility in the electric power industry.
- Process interface unit cabinets designed to execute a process control program, exchange information, receive signals from field instruments, issue commands to controlled facilities.
- Automatic control system cabinets designed to control various processes, monitor the specified operating modes and monitor the values of process parameters;
- Distributed control system cabinets designed to control processes, display monitored parameters, their registration and reporting.
- Fire extinguishing system cabinets designed to automate actions related to highly reliable detection of fire, its fast and efficient containment and suppression.
- Emergency shutdown cabinets designed to prevent emergency situations when the process parameters go beyond the permissible values.
- Server cabinets designed for close-together arrangement of server and network equipment: system units, modems, routers, switches, telephone exchanges.



JSC Nefteavtomatika develops and manufactures a wide range of low voltage packages designed for distribution, control and protection of equipment for currents up to 4000 A in networks with a rated voltage of up to 1000 VAC, with a frequency of no more than 60 Hz, with various grounding systems.

## LOW VOLTAGE PACKAGES:

- Power control cabinets and control panels designed to accommodate distribution equipment, switching and protection devices, frequency converters, start-control gear and power equipment;
- Distribution cabinets and panels designed to receive and distribute electrical power;
- Automatic transfer switch cabinets designed to restore power to consumers by automatically connecting a backup power source when the main (operating) source is disconnected. ATS control circuits can be implemented based both on a relay logic and on a controller.



Own production, located on the same territory with warehouses, a wide range of necessary equipment in warehouses and prompt execution of orders allow you to get a high-quality product in a short time.

JSC Nefteavtomatika performs a full cycle of production for automation and telemetry cabinets, low voltage packages, as well as design, engineering and assembly according to the Client's technical assignment, delivery, installation supervision and commissioning at the facility, guarantee and post guarantee maintenance.

Automation and telemetry cabinets, low-voltage packages are manufactured according to the following specifications:

- TU 27.12.31-004-00137093-2020 Low voltage packages of series KDSA.656;
- TU 3430-045-00137093-2016 Automation and telemetry cabinets of series KDSA.42;
- TU 4252-020-45857235-2014 Software and hardware complex of the microprocessor-based automation system for oil pump station by Schneider Electric;
- TU 4371-021-45857235-2014 Software and hardware complex of the microprocessor-based firefighting automation system by Schneider Electric;
- TU 4552-001-99682424-2016 Software and hardware complex of the microprocessor-based process automation system by B&R;
- TU 4371-002-99682424-2016 Software and hardware complex of the microprocessor-based firefighting automation system by B&R.

LV packages are manufactured according to for compliance with the requirements:

- CU TR 004/2011 Technical Regulations of the Customs Union «On the safety of low-voltage equipment»;
- CU TR 020/2011 Technical Regulations of the Customs Union «Electromagnetic compatibility of technical means».

## TYPES OF CABINETS:

### For automation and telemetry cabinets:

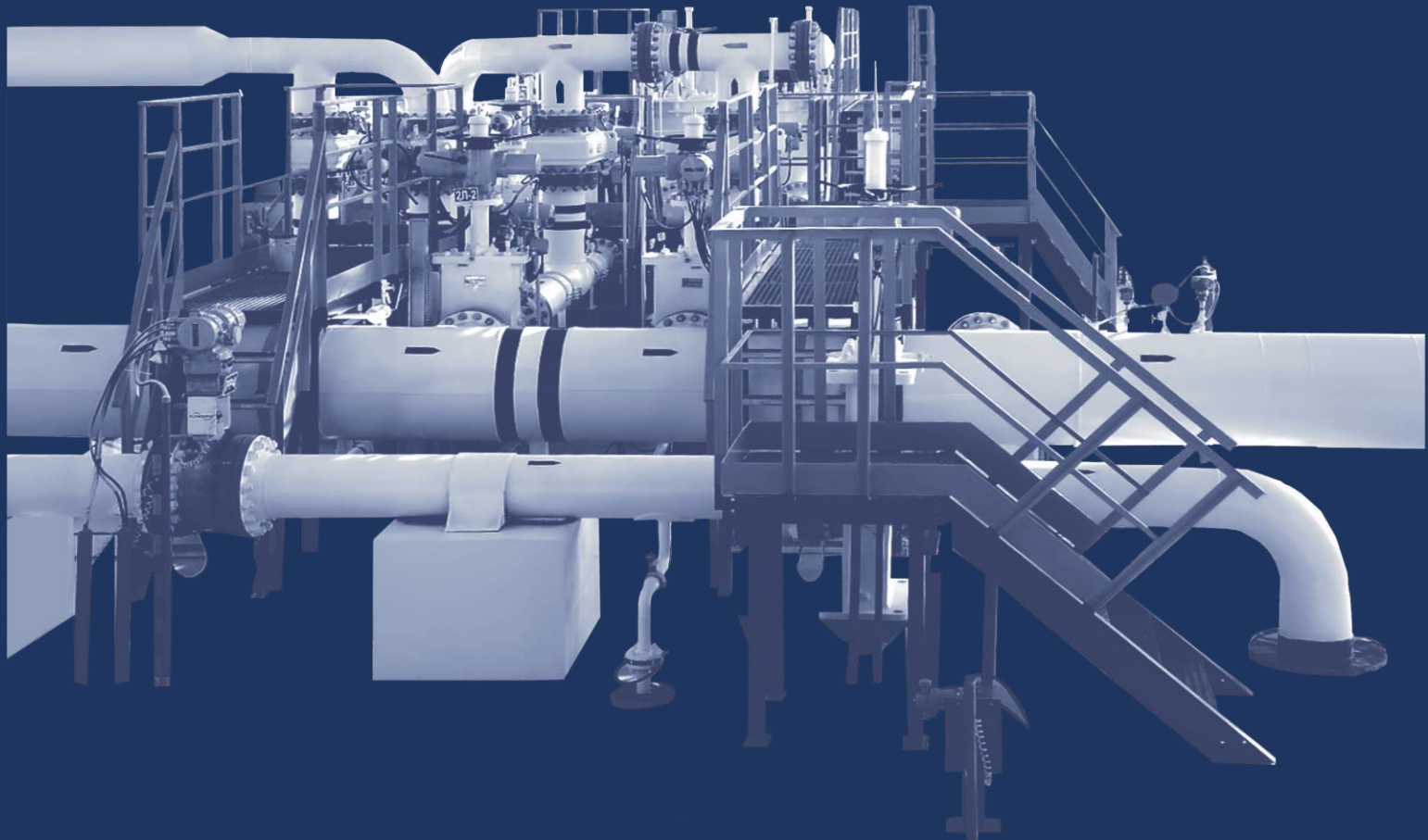
- Structural design: cabinet;
- Installation conditions: for indoor installation;
- Service conditions: one-sided; double-sided;
- Enclosure type: metal cabinet, providing the required degree of protection;
- Methods for installing components: fixed; removable; draw-out.

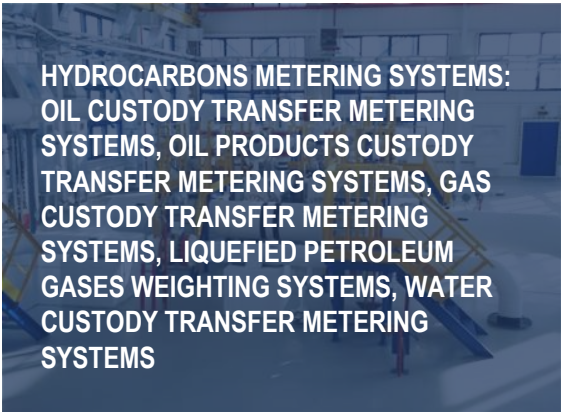
### For low voltage packages:

- Structural design: cabinet; multi-cabinet; box; multi-box;
- Conditions of installation - for indoor installation;
- Possibility to move: fixed;
- Conditions of maintenance: one-sided; two-sided;
- Type of enclosure: metal cabinet, providing the required degree of protection;
- Method for installing components: fixed; removable; draw-out;
- Kind of internal separation: 1;2a;2b;3a;3b;4a;4b;
- IP protection: up to IP65.



## PACKAGED OIL FIELD EQUIPMENT AND METERING SYSTEMS






HYDROCARBONS METERING SYSTEMS:  
OIL CUSTODY TRANSFER METERING  
SYSTEMS, OIL PRODUCTS CUSTODY  
TRANSFER METERING SYSTEMS, GAS  
CUSTODY TRANSFER METERING  
SYSTEMS, LIQUEFIED PETROLEUM  
GASES WEIGHTING SYSTEMS, WATER  
CUSTODY TRANSFER METERING  
SYSTEMS



OIL/GAS TREATMENT UNITS



PACKAGED OIL PUMP STATIONS  
PACKAGED CLUSTER PUMP STATIONS  
PACKAGED FIREFIGHTING PUMP STATIONS  
PACKAGED WATER PUMP STATIONS



AUTOMATED GROUP METERING  
STATIONS



MOBILE WELL DEVELOPMENT  
AND SURVEY PACKAGES



MOBILE CALIBRATORS

JSC Nefteavtomatika offers engineering solutions for the creation of:

- **OIL CUSTODY TRANSFER METERING SYSTEMS;**
- **CRUDE OIL CUSTODY TRANSFER METERING SYSTEMS;**
- **OIL PRODUCTS CUSTODY TRANSFER METERING SYSTEMS;**
- **GAS CUSTODY TRANSFER METERING SYSTEMS;**
- **WATER METERING UNITS.**

JSC Nefteavtomatika:

- Designs, manufactures, provides equipment for, supplies, commissions and starts up new metering systems;
- Revamps existing metering systems and manufactures separate process units;
- Provides guarantee and post-guarantee, service maintenance of the supplied equipment and systems;
- Ensures full automation of all elements of the system, integration into the upper level APCS, into dispatcher control and management systems;
- Provides metrological support: verification and calibration of metering systems, inclusion in the Unified State Register;
- Produces metering systems in modular containers and in open design;
- Produces metering systems taking into account the specific requirements of the Client;
- Provides training and briefing for service personnel.



Over

# 250

oil metering units were  
supplied and brought into  
operation in the period of  
2012 to 2022

**The production capacity allows the company to simultaneously manufacture up to 10 different systems in less than 6 months.**

**All manufactured metering systems undergo mandatory control and tests both at the place of manufacture and at the facility, they are equipped with spare accessories and tools, and are certified.**

## **CUSTODY TRANSFER METERING SYSTEM FOR OIL PRODUCTS, QUAYS 1-6, NAKHODKA SEA TERMINAL**

**RN-Nakhodka Sea Terminal, LLC**, the system consists of 38 process units. It was manufactured and shipped to the Client.  
Throughput: 40-1,800 m<sup>3</sup>/h  
Max. pressure: 1.6 MPa.



## **ONLINE METERING UNIT FOR MISCIBLE AGENT. GAS (MISCIBLE AGENT) CUSTODY TRANSFER METERING SYSTEM.**

**Gazpromneft-Yamal, LLC**  
Max. flow rate of miscible agent through the custody transfer metering system: 102,500 m<sup>3</sup>/h  
Max. design pressure: 32 MPa.



## **MOBILE OIL PRODUCTS CUSTODY TRANSFER METERING SYSTEM**

**Transneft– Upper Volga, JSC**

Throughput: 30-500 m<sup>3</sup>/h.  
Max. pressure: up to 6.3 MPa.



## **LIQUEFIED PETROLEUM GAS WEIGHTING SYSTEMS**

**Gazpromneft-ONPZ, JSC**

Throughput – 7-120 m<sup>3</sup>/h

It was possible to implement a project on fiscal metering of the LPG liquid phase weight within the permissible error.



## **OIL AND GAS CUSTODY TRANSFER METERING SYSTEM AT THE CENTRAL PROCESS PLATFORM OF V. FILANOVSKY FIELD**

**PJSC Lukoil**

The system is located on an offshore platform in the Russian sector of the Caspian Sea. Oil custody transfer metering system throughput: 418-979 m<sup>3</sup>/h Gas custody transfer metering system: 28,250-90,417 sm<sup>3</sup>/h



## **OIL CUSTODY TRANSFER METERING SYSTEM AT VTOROVO INTERMEDIATE PUMP STATION, JSC Ryazantransnefteprodukt**

Throughput: up to 1,250 m<sup>3</sup>/h  
Max. pressure: up to 6.3 MPa



JSC Nefteavtomatika offers services for the design, manufacture and supply, including on a turnkey basis, of the following modular pump units:

- **PACKAGED OIL PUMP STATIONS;**
- **PACKAGED CLUSTER PUMP STATIONS;**
- **PACKAGED FIREFIGHTING PUMP STATIONS;**
- **PACKAGED WATER PUMP STATIONS**

The manufactured products are certified and meet the requirements of CU TR 010/2011 On the safety of machinery and equipment

**EXPORT AND ON-SITE PUMP STATION.  
INFRASTRUCTURE DEVELOPMENT FOR  
PESTSOVOE OIL, GAS AND GAS  
CONDENSATE FIELD, CENTRAL PUMPING  
UNIT. Gazpromneft-Zapolarye, LLC**

Pumps – 5 pcs  
Capacity – 321 m<sup>3</sup>/h, head – 225 m.



**Pump stations are assembled:  
in fully prefabricated modular containers,  
supplied with a full set of operational and  
permit documentation**

## EXAMPLES OF PRODUCTION AND SUPPLY OF PUMP STATIONS

**Gazpromneft-Yamal, LLC**

**First stage central gathering station at  
Novoportovskoe oil, gas and gas condensate field**

Manufacture, supply, erection supervision and  
commissioning of a water pump station

Pumps – 3 pcs

Capacity – 250 m<sup>3</sup>/h, head – 75 m.

**Oil delivery and acceptance station at  
Novoportovskoe oil, gas and gas condensate field**

Manufacture, supply, erection supervision and  
commissioning of booster pump station

Pumps – 4 pcs

Capacity – 540 m<sup>3</sup>/h, head – 212 m.

**RN-Yuganskneftegaz, LLC**

**Ombinskoe oil field**

Manufacture, supply, erection supervision and  
commissioning Packaged cluster pump station

Pumps – 3 pcs

Capacity - 240 m<sup>3</sup>/h, head – 1900 m

**Srednebalykskoe oil field**

Manufacture, supply, erection supervision and  
commissioning Packaged cluster pump station 4

Pumps – 10 pcs

Capacity - 720 m<sup>3</sup>/h, head – 1900 m.



**Lukoil-Komi, LLC**

**North Kozhva rotational camp**

Manufacture, supply, erection supervision and  
commissioning of a water pump station

Pumps – 3 pcs

Capacity – 81 m<sup>3</sup>/h, head – 64 m.

# OIL/GAS TREATMENT UNITS AND MOBILE WELL DEVELOPMENT AND SURVEY PACKAGES



Oil treatment package for Tazovsky oil, gas and gas condensate field of Gazpromneft-Development, LLC Oil capacity, t/year: up to 2,200,000; Liquid capacity, t/year: up to 6,000,000; GOR, nm<sup>3</sup>/t: no more than 10

**Oil treatment units are used to separate well fluids into oil, associated petroleum gas and produced water, and treat them to meet the required conditions.**

A modular principle of equipment manufacture is used for the production of oil treatment units. Standard design solutions that take into account various geological and climatic conditions of the unit are used when developing engineering documentation.

**JSC Nefteavtomatika has an open, equipped site, which makes it possible to carry out control assembly of large components of oil treatment units in the territory of the manufacturer and significantly reduce the time of construction and installation work at the facility.**



Mobile well development and survey package for East-Okhteurskoe oil and gas field, Slavneft-Megionneftegaz, PJSC

**Mobile well development and survey packages are used for automated measurement of wells flow at various wellhead pressures, definition of formation productivity, as well as physical and chemical properties of produced hydrocarbons.**

Advantages of the oil development and survey packages:

- Small footprint of the unit, mobile and easy to move due to installation on wheels;
- Able to measure well fluids;
- Flexible system of selecting parameters and composition of the package;
- Transportable units ready to operate;
- Quick installation of the unit at the facility on conditions of no infrastructure and with minimum requirements for territory preparation;
- Possibility to take separate units from the process train and dismantle them for multiple use at other facilities.

# PRODUCTION FACILITIES FOR MANUFACTURE OF PACKAGED EQUIPMENT AND HYDROCARBON METERING SYSTEMS

Location: production facilities of the SOZaIT, LLC, plant, Serafimovsky settlement, Tuimazy district, Republic of Bashkortostan.  
Production area of the workshops is **44,000 m<sup>2</sup>**.

The plant includes workshops connected in one process train enabling the manufacture of products of high quality on a tight schedule, in compliance with occupational health and safety requirements

- Mechanical workshop
- Oil equipment workshop
- Electromechanical workshop
- 3 workshops for process unit manufacture and assembly
- Open area, 6,000 m<sup>2</sup>.

The enterprise can manufacture products in a closed process cycle, starting from the incoming inspection of components and materials and ending with all the necessary tests.

The following is used in the production workshops for manufacture:

- High lifting capacity davits;
- Equipment for surface bead-blasting and painting;
- Equipment for electrical work and for all necessary checks and tests;
- Equipment for manual and semi-automatic welding, with accessories;
- Metalworking machines, equipment for preparatory work.

There are warehouse buildings: heated warehouses for equipment, accessory materials and cold warehouses for metal.



- **MAINTENANCE:** APCS, hydrocarbon metering systems, mechanical displacement provers, automated group metering stations, instrumentation, equipment of software and hardware complexes, local automation systems, automated dispatch management systems, heat and water metering stations and devices.
- **INSPECTION, REPAIRS, VERIFICATION, CALIBRATION:** flow meters, secondary equipment instruments, oil and oil products quality instruments, process parameters monitoring instruments and other instruments within APCs, hydrocarbon metering systems.
- **GRADUATION:** aboveground and underground tanks, vessels and tank trucks for liquid oil products and food, both by geometrical and volumetric methods.
- **MAINTENANCE AND REPAIR OF SAFETY INSTRUMENTS:** fire alarm for production and household facilities; security alarm; video surveillance; automated firefighting systems; access control systems.
- **INSTALLATION AND COMMISSIONING ACTIVITIES.**



The company's maintenance area includes more than 4,000 facilities in the main oil-producing regions of Russia, including oil refineries and energy facilities.

### Ufa adjustment department

Over 200 facilities under maintenance at 50 fields in the Western Siberia, as well as facilities in the Republic of Bashkortostan and Krasnodar Territory.

#### Important oil refining and gas processing facilities:

Refinery, LUKOIL-West Siberia, LLC, Kogalym  
Refinery, LUKOIL-West Siberia, LLC, Uray  
Gas processing plant, LUKOIL-West Siberia, LLC, Langepas

### JSC Nefteavtomatika, standalone subdivision in Nyagan

Over 700 facilities under maintenance at the Krasnoleninsky arch of the Khanty-Mansiysk Autonomous District, oil refining facilities.

#### Important facilities of the companies:

RN-Nyaganeftgaz, JSC  
Krasnoleninsky refinery, LLC.

### Almetyevsk adjustment department

Over 100 facilities under maintenance in the Republic of Tatarstan, Ulyanovsk, Penza, Orenburg and Samara regions.

#### Important facilities of the companies:

Tatneft, PJSC  
Orenburgneft, JSC  
TAIF-NK, JSC

## LEVEL GAUGES OF SERIES

U-1500



U-1500 M



Level gauges of the U1500 and U1500M series are designed to monitor the level of various liquid products and the interfaces of multiphase liquids (oil, emulsion, water, etc.), determined by the position of the float sliding over the sensitive element of the sensor.

Scope of level gauges: crude tank farms and process vessels (bullets) at oil treatment, storage and refining facilities, main oil pump stations, as well as tank farms for storage of oil products and water.

### DESIGN TYPES:

The level gauge consists of one or two rigid sensors and a meter.

The level gauge has the following design types:

- Single channel with 2/4 signaling levels, 1 float.
- Double sensor (double channel), 2 sensors, 1 float on each sensor.
- Double float (single channel, double level), 2 floats.

## ETALON CALIBRATOR FOR SECONDARY EQUIPMENT



Etalon, secondary equipment calibrator, is a mobile multifunctional calibrator of reference signals. It is used for calibration and verification of secondary equipment.

The device ensures the formation of current and frequency signals, bursts of pulses and time intervals (imitation of mechanical displacement prover operation).

The Etalon calibrator has a pattern approval certificate.

The Etalon calibrator is produced in a portable, small-sized instrument case, it is controlled using a built-in keyboard, a 4-line LCD display is used to display information.

The metrological service of JSC Nefteavtomatika is accredited for the right to provide services to test metering instruments to approve their type, certify measurement techniques (methods), conduct a metrological examination of documentation, for the right to verify and calibrate metering instruments.

## The metrological service has:

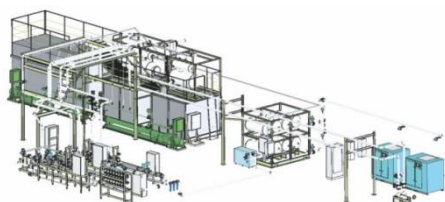
Stock of reference equipment – 213 pcs;  
Certified verification officers – 48 specialists;  
Its own laboratory and laboratories of affiliates, with a total area of over 1,000 m<sup>2</sup>.

The metrological service of JSC Nefteavtomatika includes Head Scientific Metrological Center in Kazan and Ufa, as well as metrological subdivisions of adjustment departments in Almetьевsk, Nyagan and Kogalym.

## FOCUS AREAS:

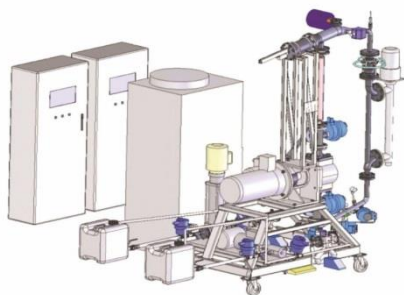
- Development of operating and reference metering systems, test equipment;
- Development of regulatory engineering documentation, interstate and national standards, company standards;
- Verification and calibration activities, both in our laboratories, and during visits to the facilities of the Clients;
- Development and qualification of measurement procedures for flow rate, quantity and level of liquids and gases, quality parameters of oil and oil products;
- Development of metering procedures for oil, oil products and crude hydrocarbons;
- Metrological expert review of engineering documentation;
- Tests of metering systems to approve their type;
- Finding the reasons of debalance between a supplier and a consumer;
- Development and qualification of algorithms and software in the area of flow rate and quantity measurement for liquids and gases, as well as for other spheres;
- Keeping an industry-specific register of metering systems (for oil, crude and oil products), issuing certificates of registration and assigning a number to them;
- Scientific research in the area of precision methods development for measurements of flow rate, quantity and quality parameters for hydrocarbons.





## TESTING AND CALIBRATION BENCH

The reference for gas-liquid flows of the 1st category in accordance with GOST 8.637-2013 is designed to transfer units of liquid mass flow rate and gas volumetric flow rate to the reference of the 2nd category and conduct research, verification (calibration) and testing of downhole measuring devices and flow metering instruments.



## UNIT FOR VERIFICATION OF INLINE INSTRUMENTS MEASURING MOISTURE CONTENT, DENSITY, VISCOSITY OF OIL AND OIL PRODUCTS

Designed to test, verify (calibrate), graduate, and carry out experimental research of operating inline measuring instruments for moisture content, density, viscosity of oil and oil products in laboratory conditions in an automated mode.



## REFERENCE MOBILE UNIT

The reference for gas-liquid flows of the 2nd category in accordance with GOST 8.637-2013 is designed for precision mass measurements for crude oil and petroleum gas extracted from wells during oil production in case of research, verification (calibration) and testing of downhole measuring devices without dismantling.

## FLOW STRUCTURE INDICATOR



Designed for certification of sampling systems by monitoring the homogeneity of the water-oil flow transported through a pipeline with a diameter of 100mm, 150mm, 200mm and 250mm at an operating pressure of 4.0 MPa at the place of the sampling device installation.



## NAFTA APN, CRUDE OIL AUTOMATIC SAMPLER

Designed for automatic collection of a combined sample of crude oil transported through a pipeline by compiling it from point samples of a given volume, collected based on an external control signal.



## NAFTA-SKAN, METERING UNIT

Designed to meter the mass flow rate and the mass of crude oil (well fluid), the volumetric flow rate and the volume of non-associated petroleum gas reduced to standard conditions, the mass flow rate and the mass of crude oil (well fluid) with no regard to water.

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