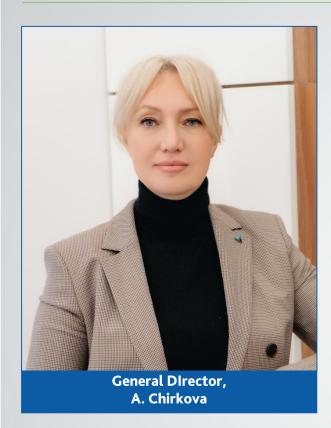
ENGINEERING AND DESIGN INDUSTRIAL SAFETY AND RISK MANAGEMENT PROCESS AND PRICE AUDIT

MANAGEMENT

General Director





Alena Chirkova – Doctor of Technical Sciences, writer of scientific monographs and a lot of articles in lead scientific and worldwide journals and guides. Co-author of topical unit "National safety" (coordinator S.K. Shoigu) of multivolume edition "Safety of Russia. Legal, socio-economic, scientific and technical aspects". Author and co-author of patents for unique inventions and processes. Certificated expert in industrial safety.

Professional experience

Having worked at the Department of "Machines and Apparatuses of Chemical Production" of Ufa State Petroleum Technical University, Chirkova A. in 2001 created the **Research and Production Center "Techproyekt"**, which over its 15-year history has implemented the largest projects at Ufa and other refineries, which have been successfully implemented with the achievement of warranty indicators.

One of the largest projects of Chirkova A. is the development of FEED and Project design documentation for **the Amur Gas** Processing Plant, implemented with **LINDE AG Gmbh, Germany**.

- ▲ Certificated expert in industrial safety
- ▲ International expert in the field of value engineering
- ▲ International expert in project management

The existing experience and competence in implementing the most complex and large-scale tasks of designing and constructing oil and gas processing facilities, including in the EPC format, allowed A. Chirkova to establish the **Research and Design Institute "Engineering NefteGazoChimiyi"** on the basis of **RPC "Tekhproyekt**, which involved the best specialists in the field of design and engineering of Ufa.

The next stage in the development of the institute was the maximum possible coverage of competencies in the implementation of projects under the EPC model, including process and price audit, as well as changing the name to **R&DI** "**PEGAZ**".

One of the current successfully implemented projects is the Amur Gas Processing Plant in terms of the UI&O facilities.

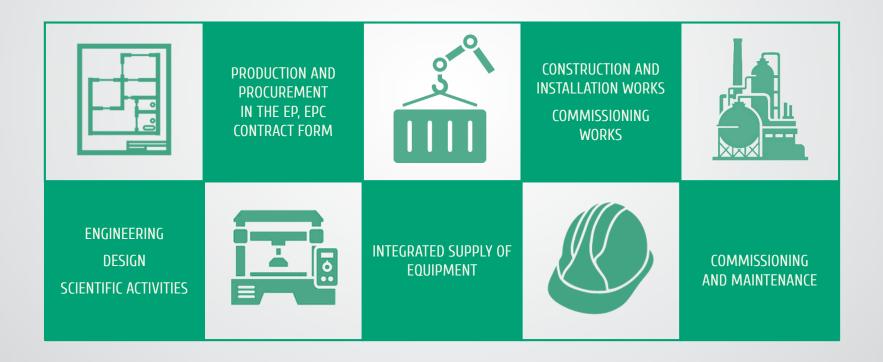
ABOUT COMPANY

General Information



R&DI "**PEGAZ**" is a technological engineering company that performs a full range of works on the design and development, production and supply, commissioning and start up of oil and gas production facilities, transportation, processing and storage in the oil, gas and chemical industries, as part of a full cycle of project implementation.

The effective work of specialists and the modern level of organization of business processes in accordance with international standards allows our company to implement projects of any scale and complexity in a timely and high-quality manner.



Engineering Department separation to an individual legal entity RPC "Energo Automation" The Department starts to develop a concept in engineering and systems integration in the space of automation, control and monitoring systems of industrial processes and electricity production.

2001

1995



Reorganization in R&D Institute "PEGAZ" Maximum possible coverage of projects implementation under EPC model, including process and price audit. Name change to R&D Institute PEGAZ Reorganization to Research and Engineering Design Institute "NefteGazoChimii" Competence extension – well infrastructure development, extraction and linear-tupe facilities. Reaching the full range of works as a part of the full project cycle. Start of a corporate program of development with leading Oil and Gas R&D Institutes of Ufa Corporate program of development with leading Oil and Gas R&D Institutes of Ufa Design of construction of all process units and facilities of the Amur Gas Processing Plant. 2007 2009 2015

Reorganization to Engineering NefteGazoHimii

Based on the existing background over 10 years experience, the institute began to actively develop the field of general engineering and PMC-management of projects, work together with foreign companies and began to take part in implementing of EPC projects.

Establishment of RPC "Tekhproyekt"

2006

A. Chirkova opened RPC "Tekhproyekt". Core competencies: Integrated design at hazardous industrial facilities in all areas. Industrial safety expert review of technical equipment, buildings and structures, other documentation.

Development of Scientific Research Laboratory of integrated subdepartment "Machinery and Equipment of Oil and Gas Offshore Facilities" of Ufa State Petroleum Technological University A.Chirkova created a nondestructive testing laboratory, development of the direction in safety expert review of technical devices and complex design of objects of oil and gas processing.

COMPETENCIES AND OPPORTUNITIES

Work performed



- Development of feasibility studies of investments for the reconstruction of existing and construction of new facilities. Process and price audit. Integrated Project Management (PMC). Value engineering. Implementation of EPC, EP contracts.
- Integrated engineering surveys for development of design and detail documentation.
- Development of Input Design Data (ID) and Basic Design (BD). Development of design and detail documentation for new construction, modernization and reconstruction of hazardous operations industrial facilities, projects for the conservation and liquidation of hazardous operations industrial facilities. Volumetric 3D design, 4D, 5D design. Inspection of building structures and facilities. Carrying-out of HAZID and HAZOP.
- Environmental support of pre-project and project work, risk management. Development of Emergency response plans, Oil spill prevention control and countermeasure plans, Industrial safety declarations, safety data sheets, technical regulations.

- Supporting, Russification and project expert review, including for foreign licensors.
- Development of technical projects of non-standard equipment, including furnace equipment.
- Obtaining of the required approvals, support of the project documentation expert review in the Main State Expert Review Board of Russia (GGE).
- Engineering, production and packaged supply of industrial equipment (electrical equipment, control systems, cabinets of automation and information processing, industrial electric heating systems) and materials (cable products).
- Construction of new facilities, revamping and technology upgrade of operating facilities in the format of EPC-contracts. Commissioning, Erection Supervision Works.

PERMITS & LICENSES

Certificates



R&DI "PEGAZ" has a full set of permits for its activities, and all business processes are implemented in full compliance with a certified quality management system.



SRO – Engineering Surveys



SRO - Engineering



SRO – Commissioning, construction and erection works



9001:2015 (TUV AUSTRIA) Quality Management System



Certificate – GOST R ISO 9001-2015

Quality Management System



Certificate –
GOST R ISO 14001–2007
Environmental management



Certificate –
GOST R ISO 21500–2014
EPC contract management



Certificate –
GOST R ISO 45001-2020
Occupational health and

Occupational health and safety management system



Certificate GOST R ISO
50001-2012 – Commissioning,
construction and erection works
Quality Management
System

PROCESS ACTIVITY

Oil Refining



The process activity of the company is based on the experience of numerical modeling of technological processes in various specialized software products and use of their own calculation methods. There is considerable experience on modeling of processes of rectification and absorption taking into account the selection of type of contact device or their joint application on the basis of practical data. The accumulated experience makes it possible to qualitatively calculate columns, capacitive, heat exchange equipment, etc. with the issue of data sheets for their further design.

Process activities in the oil refinery operations

In the field of oil refining, the company's capabilities are based on experience in increasing the efficiency of technological processes, namely:

- A primary distillation of oil and gas condensate, and their mixtures to obtain fuel fractions using "flows" between columns to reduce energy consumption and optimize the heat exchange scheme according to the original method;
- ▲ separation of gasoline into narrow fractions in order to obtain raw materials of the required quality for secondary processes;
- ▲ fractionation of gasoline fractions of secondary processes, including processes of debutanization, dependanization and dehexanization;
- increasing the efficiency of the processes of amine purification of off-gases with subsequent fractionation and use as raw materials for petrochemical processes;
- also there is significant experience related to the implementation of licensing processes of foreign companies (hydrocracking, alkylation, etc.).

PROCESS ACTIVITY

Gas processing, petrochemistry



Technological activity in the field of gas processing

The company's experience in the field of gas processing extends to the following processes:

- Separation and gasoline extraction from gas;
- ▲ purification of natural, associated and regeneration gases from impurities, in particular from H2S and CO2, in the process of liquefaction of natural and associated petroleum gas;
- ▲ low-temperature separation of natural gas and selection of ethane fraction up to 90% of the potential due to the use of the LTA process developed by specialists of our institute.

Technological activity in the field of petrochemistry

The possibilities of the company in the petroleum chemistry are based on experience of efficiency raising of technological processes and also development of technologies to getting out products with high (polymeric) purity:

- ▲ The technology of efficient and reliable (resistant to pollution and sharp fluctuations in the process) water or hydrocarbon washing of synthesis gas in the production of ethylene and propylene;
- clear fractionation of gases C1-C4;
- fractionation of fractions and, in particular, azeotropic drying and azeotropic fractionation of fractions for obtaining raw materials in the production of rubbers;
- ▲ obtaining products of high purity required for polymerization, in particular, the technology of obtaining DCPD with a purity of more than 99% wt.

PROCESS ACTIVITY

Licensed products of the PEGAZ Holding





TECHNOLOGIES

- Waste-free natural gas treatment
- ▲ Utilization of associated petroleum gas
- Deethanization of hydrocarbon gas
- ▲ Helium and LPG production
- ▲ Thermal pre-treatment of extra-heavy oil
- No-waste technology of blowing off hydrogen sulfide and mercaptans
- Hydrogen production
- Methanol production
- Production of aromatic hydrocarbons from C3, C4



OIL REFINING

- ▲ One-stage technology for producing top quality gasoline
- Production of ultra-low-sulfur diesel fuels
- ▲ Production of bitumen from paraffin raw materials
- ▲ Production of sulfur by direct oxidation
- ▲ Hydroconversion of oil residues
- Non-waste technology of complex oil treatment



EQUIPMENT

- Pumping and compressor equipment based on the Ryl rotary-piston machine
- ▲ Temperature-unloaded heat exchangers
- Highly efficient gas KO drums
- Fractionating columns with variable reflux ratio
- Reactors of catalytic and hydro-catalytic processes



BLOCK-MODULAR EQUIPMENT

- Pumpless/Flowless chemicals metering units
- Multiphase pump stations
- Associated petroleum gas methanation units

ENGINEERING SURVEYS





Engineering surveys are one of the directions of R&D Institute «PEGAZ» activities. To perform all kinds of engineering surveys, our company has all necessary equipment, programs and transport. The most part of employees has many years of experience in large surveys companies of Ufa and worked on projects for companies PJSC Gazprom, PJSC NK Rosneft, OAO AK Transneft, OAO LUKOIL, PJSC ANC Bashneft and other companies of the fuel and energy complex.

Engineering-Geodetic Survey



Personnel and technical resources of the company allow to perform a full range of geodetic works in the field of survey of linear type and site facilities. We accumulated a lot experience in carrying out works on various types of territories from difficult-to-reach muskegs and forests to permafrost soils, as well as territories of petrochemical plants loaded with underground and above-ground communications.

Geological engineering surveys



To carry out field geological engineering surveys we have a drilling unit and a mobile road laboratory.

The ground laboratory of the company has all necessary modern equipment for determining physical, mechanical, corrosive properties of soils, as well as chemical analysis of water and soils.

Engineering Ecological Survey



For an overall study of the environmental situation and to identify of the existence of conditions for living and conducting a variety of activities, as well as the impact of these activities on the environment, there is all the necessary equipment - a gamma radiation monitoring instrument, a gamma spectrometer, a noise meter, a gas analyzer.

Hydrometeorological survey



Hydrometeorological surveys provide to assess the state of the hydrological regime of the study area, climatic conditions and certain meteorological indicators, hazardous hydrometeorological phenomena and processes, as well as anthropogenic and technogenic changes in climatic and hydrological conditions.

FULL CYCLE EPC CONTRACT

KEY COMPETENCIES OF R&D INSTITUTE «PEGAZ» IN THE EPC FORMAT



- ▲ Development of design and detail design documentation in full scope, with early involvement of all participants and partners (design engineers, vendors and contractors) in the project
- ▲ Organizations of a common working information space on the basis of the 3D model
- **Equipment and material procurement**
- Integration of planning at all stages of implementation by method of target period of C-P-E (construction-procurement-engineering)
- ▲ Education of Customers process and operating personnel
- Warranty and post-warranty maintenance

1 Process and price audit.
2 Engineering of process solution
3 Design
4 Certification
5 Supply
6 Construction
7 Commissioning and start-up

8 Personnel training

9 Warranty and service of the facilities

PERSONNEL



The basis of the **R&DI** "**PEGAZ**" team consists of highly qualified specialists, employees of industrial oil and gas enterprises, design engineers, researchers, academics, managers with extensive experience in experimental work, implementations, execution of projects, including PhDs in engineering science and candidates of sciences, experts in the field of industrial safety, certified specialists in the quality management system.

Manpower of the Institute consists of more than **420 specialists**. The availability of the labour pool allows to mobilize **up** to **500 specialists** in the shortest possible time, for a specific task.

Specialists of engineering departments, application software developers and commissioning personnel of R&DI "PEGAZ" have sufficient experience in project implementation and are certified according to training programs of the largest manufacturers of industrial automation and engineering systems.

The company's staff is represented by of highly professional team specialists with unique experience in the actual operation of oil refining facilities, who have worked for a long time in the systems of PJSC Bashneft, PJSC Transneft, etc., as well as design engineers, including from the largest design companies Ufa in (Bashqiproneftekhim, Giprotruboprovod, BashNIPIneft, etc.).













HUMAN RESOURCES

Open offices of RD&I "PEGAZ"





ORGANIZATION STRUCTURE AND LOCATION

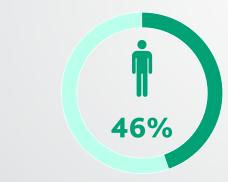


MAIN DESIGN DEPARTMENTS

- ▲ Engineering Surveys Department
- ▲ Process Calculation Department
- ▲ Piping and Process Department
- ▲ Mechanical Department
- ▲ Civil Structural Engineering Department
- ▲ Department of Plot Plan and Transport
- ▲ Electrical Department

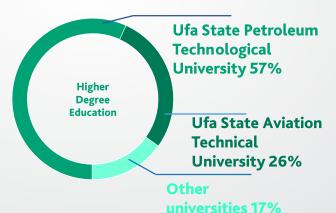
54%

- Department of Automation, Telemechanics and Communications
- ▲ Department for the design of water supply, drainage and heating, electricity supply.
- ▲ Department of Industrial and Environmental Safety
- Department for Design and Estimate Work and Construction Organization Plan



Chief Project Engineers Office Supporting Departments and Services

- ▲ Subcontracting Control Department
- ▲ CAD Implementation Department
- ▲ Information Technology Department
- ▲ Projects Release Department
- ▲ Translation Support Department
- Prospective Development Department
- ▲ Technical Department
- ▲ HR Department
- Administrative and Management Service



Office space

- ▲ Historical and business center of the city
- ▲ Total area of office premises in Ufa: 3,444 sq.m. (Office on the 4th floor of BC "Nesterov": 1,885 sq.m. Office on the 2nd floor of BC "Nesterov": 1,000 sq.m.)
- ▲ 420 employees
- ▲ Modern high-tech equipment
- ▲ Offices in Moscow, Salavat, Sterlitamak







3D DESIGN AND BUILDING INFORMATION MODELING (BIM)



Using of 3D design methods by process engineers and assembly process design specialists of R&DI "PEGAZ" LLC makes it possible to visualize in 3D format any elements and systems of the facility, allows to analyze and select the most optimal options for layout solutions.

Design based on 3D modeling methods allows:

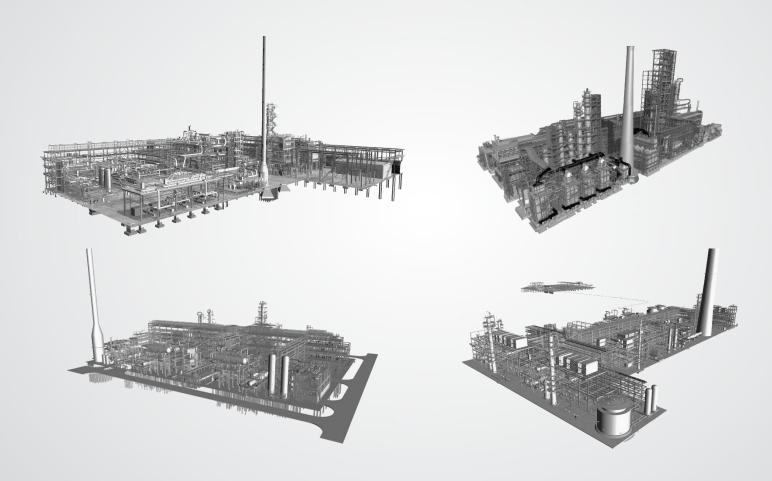
- create digital 3D models of objects, including equipment, piping, metal structures, etc., containing all the necessary information not only for mounting but also for further maintenance and operation
- within the framework of one project to develop P&ID and coordinate them with the 3D model
- to check for intersections and collisions at the design stage
- organize collective work on the project, enabling related specialists to work in parallel and use data losslessly, thereby increasing productivity and design efficiency



- Using of 3D design methods in the work is for R&DI "PEGAZ" a consistent step towards
 the implementation of the program of transition to design based on Building
 Information Modeling (BIM), which in turn will significantly reduce the development
 time of project design and detail design documentation and improve the quality and
 reliability of each of its parts, as well as combine design data on the scale of the
 entire facility and significantly reduce the total cost of implementing investment
 measures;
- The use of BIM-design technology at all life cycles of an investment and construction project: from investment justification to operation, modernisation.



R&DI "**PEGAZ**" carries out three-dimensional design of individual facilities and entire enterprises, which allows organizing a single working information space, when implementing EPC projects, based on a 3D model.



Software products

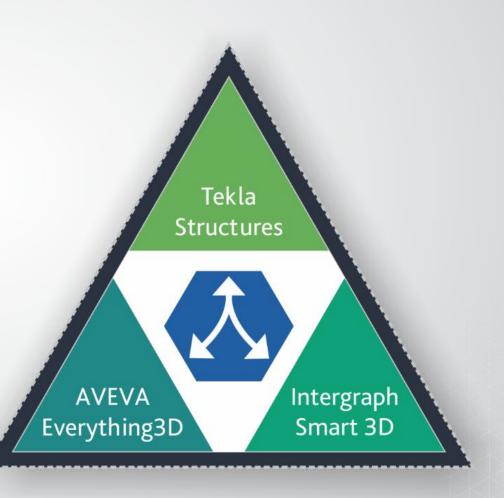


PEGAZ uses only specialized, modern and proven software to implement **projects** in **3D**. The software is fully integrated into the workflow. Databases, libraries and catalogs operate correctly for all programs, export and import of data is correctly configured. It is possible to **combine into a common 3D model from different software products**. At the moment, R&DI "PEGAZ" has implemented all software products for creating a common **3D model: Tekla Structures, AVEVA Everything3D, Integraph Smart 3D.**

Tekla Structures is a modern software package of the highest level, for effective information modeling of buildings and structures.

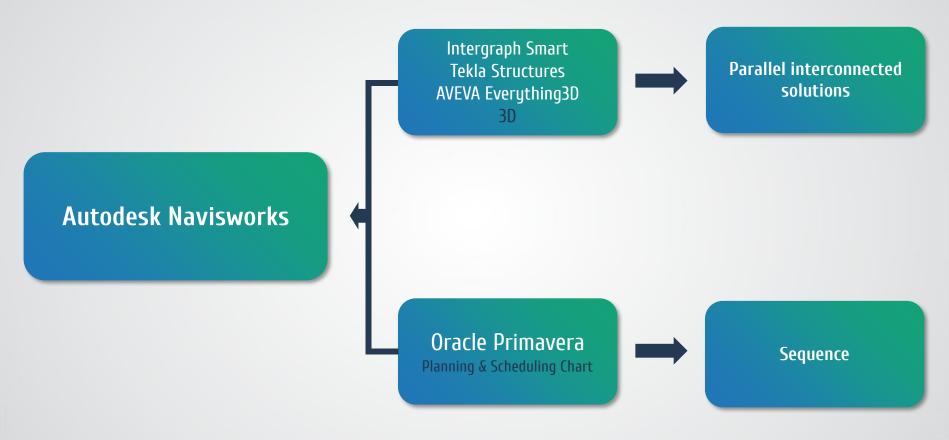
AVEVA Everything3D is a modern software product, which brings 3D design to a new level of efficiency and opens up many additional possibilities. The solution is fully compatible with all AVEVA technologies for scheme and drawing development, work in 3D environment and information management.

Intergraph Smart 3D is an industrial facility design system designed to support the work of a distributed group of specialists of various profiles on projects of industrial facilities of increased complexity. SmartPlant **3D** avoids the restrictions imposed by traditional design technology.



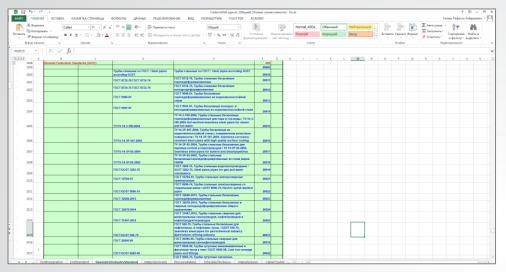


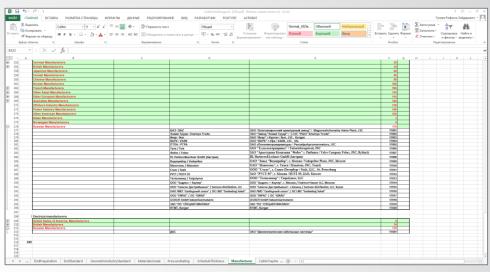
PROJECT IMPLEMENTATION ALGORITHM



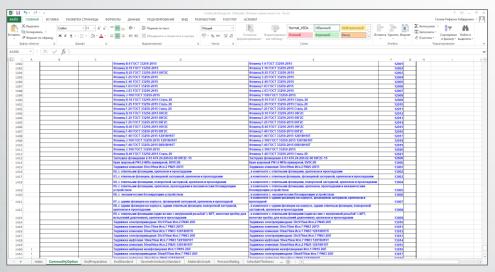


R&DI "PEGAZ" can implement projects according to both Russian and foreign standards. The catalogs of all software products are loaded with lists of manufacturers, goods items, equipment elements, materials, etc.

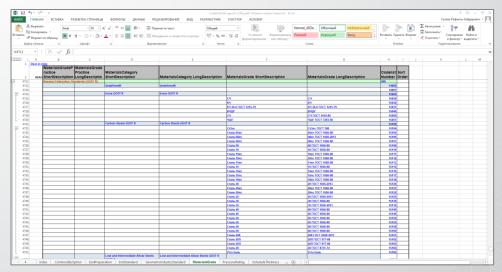




Standards



Manufacturers

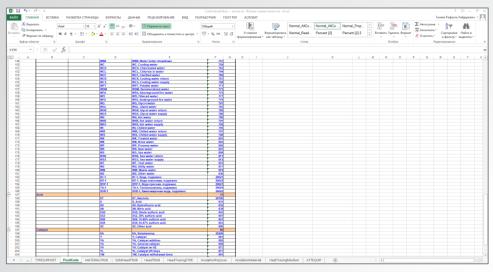


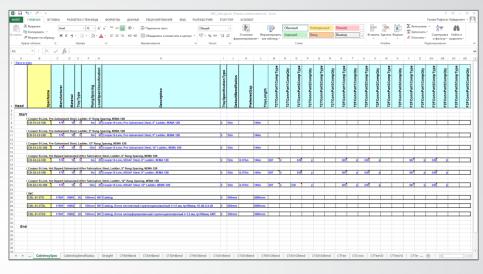
Goods items

Materials

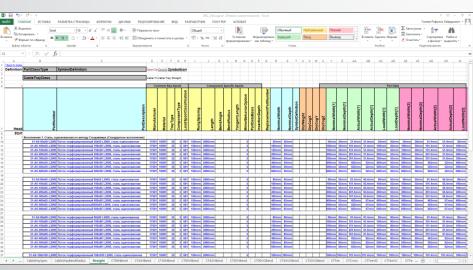


Administration of the model, training of design engineers, catalogs, settings for obtaining output documentation are produced by employees of R&DI "PEGAZ"

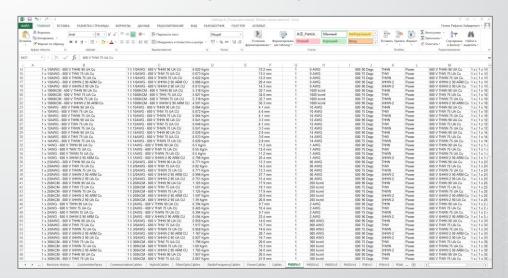




Products

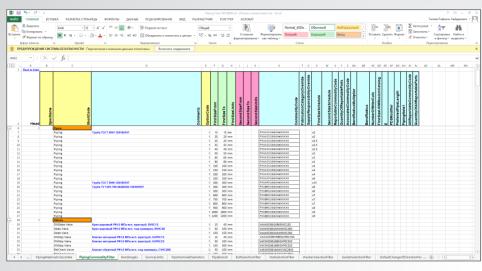


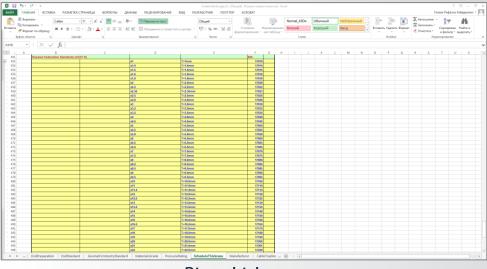
Types of trays



Tray sizes and sheets with elements (turns, tees, etc.)

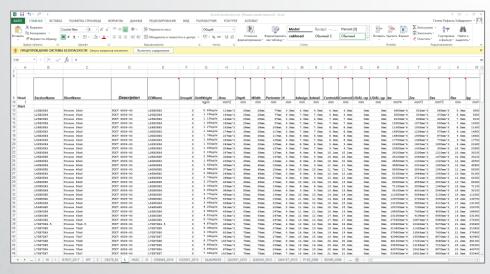


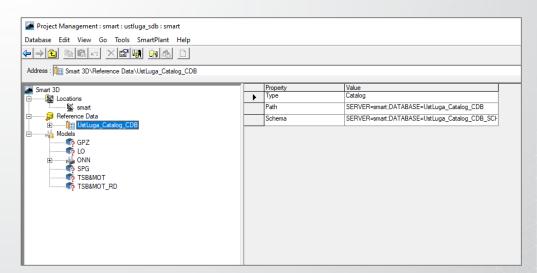




Pipeline elements

Pipe thicknesses





Construction assortment

The general database of the catalog for all models

List of regulatory and technical documents in software products



Section	NTD	st of normative and technical documentation Описание				
Construction	Nib	UINCONC				
	GOST R 57837-2017	Hot-rolled steel I-beams with parallel shelf faces. Specifications				
	GOST 103-2006	GOST 103-2006 Hot-rolled steel strips				
	GOST 19425-74	I-beams and special steel channels				
	GOST 19903-2015	Hot-rolled sheet metal Hot-rolled round steel products				
	GOST 2590-2006					
	GOST 2591-2006	Hot-rolled square steel products				
		Steel bent closed welded square and rectangular profiles for building structures. Specifications				
	GOST 30245-2003					
	GOST 8240-97	Hot-rolled steel channels.				
	GOST 8509-93	Equal-flange steel angles				
	GOST 8510-86	Hot-rolled nonequilateral steel angles				
	GOST 8732-78	Seamless hot-formed steel pipes				
	TU 14-2-685-86	Hot-rolled steel. I-beams and T-bars with parallel shelf faces				
Cable trays		7. () () () () () () () () () (
		Trays from manufacturers DKC, OBO Bettermann, Cooper B-Line				
Cables	COCT 1500 70	Control with the state of the first				
	GOST 1508-78	Control cables with rubber and plastic insulation				
	GOST 16442-80	Power cables with plastic insulation				
	GOST 31996-2012	Power cables with plastic insulation for a nominal voltage of 0.66; 1 and 3 kV				
Instrumentation ed	quipment					
	GOST 22826-83	Assembly units and pipeline parts				
Foreign standards	for pipes, pipeline parts and fittings:					
	ASME					
	ANSI					
	API					
	ASTM	Соединенные Штаты Америки, Стандарты				
	AWWA					
	MSS SP					
	DIN	Стандарты Германии (DIN)				
	BS	Стандарты Великобритании (BSI)				
	JIS	Стандарты Японии (JISC)				
	JPI					
	JWWA					

	GB	
	GB/T	Стандарты Китая (SACS)
	IS	Стандарты Индии (BIS)
	SMS	Стандарты Швеции (SIS, Шведский институт стандартов)
	SAB	Стандарты Южной Африки (SABS)
Domestic standards f	or pipes:	
	GOST 10704-91/GOST 10705-80	Electric welded longitudinal steel pipes / Electrically welded steel tubes
	GOST 20295-85	Steel welded pipes for main gas-and-oil pipelines. Specifications
	GOST 8732-78	Seamless hot-formed steel pipes
	GOST 8734-75	Seamless cold-formed steel pipes
	GOST 9941-81	Seamless cold- and warm-deformed tubes of corrosion-resistant steel. Specifications
	TU 1303-006.2-593377520-2003	HFC electric-welded oil and gas pipeline steel pipes with increased operational reliability, intended for the development of fields of TNK, JSC
	TU 1317-006.1-593377520-2003	Seamless oil and gas steel pipes with increased operational reliability for the development of of fields of TNK, JSC
	TU 1381-046-05757848-2009	Electrically welded steel gas pipelines of 530-1220 mm diameter, resistant to hydrogen sulfide cracking
	TU 1381-158-0147016-2001	Electrically welded spiral seam steel pipes, volumetrically heat-treated, intended for construction of field pipelines for media with increased corrosivity
	TU 14-161-148-94	Seamless hot-deformed oil and gas pipeline of high corrosion and cold resistance
	TU 14-162-14-96	Seamless hot-deformed oil and gas pipeline of high corrosion and cold resistance
	TU 14-3-1573-96	Longitudinally welded steel pipes of 530-1020 mm diameter with wall thickness up to 32 mm for main gas pipelines, oil pipelines and oil product pipelines
	TU 14-3-1963-95	Seamless hydrogen sulfide resistant pipes
	TU 14-3-1970-97	Electrically welded spiral seam steel pipes with increased corrosion and cold resistance made of carbon quality steel grade 20
	TU 14-3-1971-97	Seamless hot-deformed oil and gas pipeline pipes of increased corrosion resistance and operational reliability made of carbon steel (steel grade 20 and its modifications)
	TU 14-3P-1128-2007	Seamless cold-resistant steel pipes for gas pipelines, gas lift systems for oil production and gas field development
	TU 14-3P-21-96	Electrically welded longitudinal steel pipes
	TU 14-3P-54-2001	Seamless hot deformed pipes made of steel grade 20YUCH.
	TU 14-3P-77-2004	Seamless hydrogen sulfide resistant pipes
	TU 95.349-2000	Electrically welded longitudinal seam pipes made of 08X18H10T, 12X18H10T steel for nuclear power and thermal power plants

List of regulatory and technical documents in software products



	TU 14-158-115-99	Seamless hot-deformed oil and gas pipeline steel pipes of increased cold and corrosion resistance
Domestic standards fo	or pipeline parts	
	ATK 24.200.02-90	Steel flange plugs. Design, dimensions and specifications
	ATK 24.218.01-90	Weldolets, plugs and gaskets. Design, Dimensions and General Technical Requirements
	ATK-26-18-5-93	Steel spectacle blinds for valve flanges. Design, dimensions and specifications
	GOST 10493-81	Rigin and compensating lens-shaped seals for Pn 20-100 MPa (200-1000 kgf/cm) Specifications
	GOST 10494-80	Studs for flanged connections with lens-shaped seals for - 10-100 MPa (100-1000 kgf/cm). Specifications
	GOST 10495-80	Hexgonal nuts for flanged connections for Pn 10-100 MPa (100-1000 kgf/cm). Specifications
	GOST 33259-2015	Flanges for valves, fittings and pipelines for pressure to PN 250. Design, Dimensions and General Technical Requirements
	GOST 15180-86	Flexible flat gaskets. Main parameters and dimensions.
	GOST 17375-2001	Seamless welded pipeline parts from carbon and low-alloy steel. Sharply curved bends type 3D (R=1,5 DN). Design
	GOST 17376-2001	Seamless welded pipeline parts from carbon and low-alloy steel. Tees. Design
	GOST 17378-2001	Seamless welded pipeline parts from carbon and low-alloy steel. Reducers. Design
	GOST 17379-2001	Seamless welded pipeline parts from carbon and low-alloy steel. Elliptical plugs. Design
	GOST 18698-79	Rubber pressure hoses with textile base. Specifications
	GOST 22792-83	Assembly units and pipeline parts. Nozzles for Pnom. from 10 to 100 MPa (100-1000 kgf/cm2). Design and dimensions
	GOST 22815-83	Assembly units and pipeline parts. Flanged plugs for Pnom. from 10 to 100 MPa (100-1000 kgf/cm2). Design and dimensions
	GOST 22820-83	Assembly units and pipeline parts. Angles for Pnom. from 10 to 100 MPa (100–1000 kgf/cm2). Design and dimensions
	GOST 22822-83	Assembly units and pipeline parts. Reducing T-branches for Pnom.from 10 to 100 MPa (100-1000 kgf/cm2). Design and dimensions
	GOST 22826-83	Assembly units and pipeline parts. Fillets for Pnom. from 10 to 100 MPa (100–1000 kgf/cm2). Design and dimensions
	GOST 53279-2009	Fire equipment. Fire connecting heads. General technical requirements. Methods of testing
	GOST 6533-78	Ellipsoidaldished hedes, flanged made of steel for vessels apparatus and boilers. Main Dimensions
	GOST 9399-81	Threaded steel flanges for Pn 20 - 100 MPa (200 - 1000 kgf/cm2). Specifications
	GOST 34655-2020	Pipeline Valves. Oval, octagonal cross-section gaskets, steel lens gaskets for reinforcement flanges. Design, Dimensions and General Technical Requirements
	0ST 26.260.454-99	Spiral wound gasket. Types and dimensions. General technical requirements
	OST 26.260.460-99	Weldolets, plugs and gaskets. Design, Dimensions and General Technical Requirements
	OST 26.260.461-99	Oval and octagonal steel gaskets for valve flanges. Design, Dimensions and General Technical Requirements
per tour		

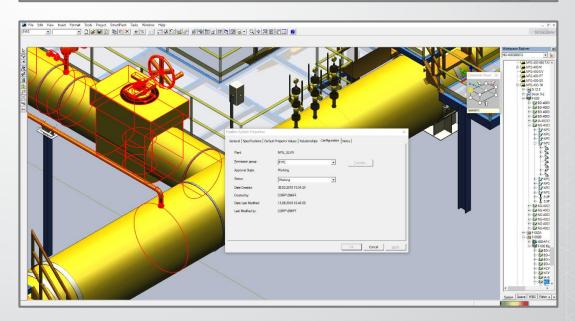
OST 26-2040-96	Studs for flanged connections. Design and dimensions
OST 26-2041-96	Nuts for flange connections. Design and dimensions
0ST 26-2042-96	Washers for flange connections. Design and dimensions
OST 36-42-81	Welded and bent details pipelines made of carbon steel with Dn up to 500 mm, for Pn up to 10 MPa (100 kg/cm2). Curved bends. Design and dimensions
TU 3680-001-04698606-04	Piping Support
TU 102-488-05	Connecting details and nodes of main pipelines. On Pp up to 10 MPa (100 kgf/cm2)
TU 1400-001-62226329-2012	Pipeline parts: bends, transitions, tees, plugs, flanges with diameters from 9 mm to 1420 mm with working pressure up to 100 MPa (1019 kgf/cm2).
TU 14-1-5598-2011	Pipeline parts steel connecting welded with increased corrosion and cold resistance
TU 1466-010-593377520-2003	Seamless welded steel pipeline connectors of high operational reliability designed for the development of fields of TNK, JSC
TU 1468-002-17192736-2003	Piping parts. Seamless welded transitions, plugs made of alloyed and high-alloy steel for
TU 1468-010-593377520-2003	Seamless welded steel pipeline connectors of high operational reliability designed for the development of fields of TNK, JSC
TU 1468-020-39918642-2003	Sharply-bent seamless welded bends with bending radius R=1,0Dnom, R=1,5 Dnom, with bending angle $45^\circ,60^\circ,90^\circ,$ outside diameter from 38 to 426 mm.
TU 1468-120-1411419-93	Seamless welded pipeline parts made of alloy steel for Pnom≤1.6 MPa
TU 1469-002-14946399-2006	Connecting parts and units of trunk, field and process pipelines for working pressure up to 16MPa
TU 1469-003-42039714-2004	Welded connection parts for trunk and field pipelines
TU 1469-005-58154529-2011	Connecting parts of pipelines for main gas pipelines with working pressure up to 9.8MPa and field pipelines with working pressure up to 31.4MPa, designed for operation in hydrogen sulfide-containing media
TU 1469-011-593377520-2005	Welded steel connecting parts for operation in oilfield media with increased corrosive activity
TU 1469-013-13799654-2008	Connecting parts for field and process gas and oil pipelines for working pressure up to 31.4 MPa (320 kgf/cm2)



At R&DI "PEGAZ", the following departments have completely switched to 3D design, with the possibility of unloading the project in 2D:

- ▲ Heating and Ventilation Department
- ▲ Civil Department
- ▲ Oil and Gas Field Department
- ▲ Electrical Department
- ▲ Water supply and sewage Department
- ▲ Department of Automation of oil and gas processing facilities
- ▲ Piping and Process Department
- Process Calculation Department
- ▲ Architecture and Construction Department



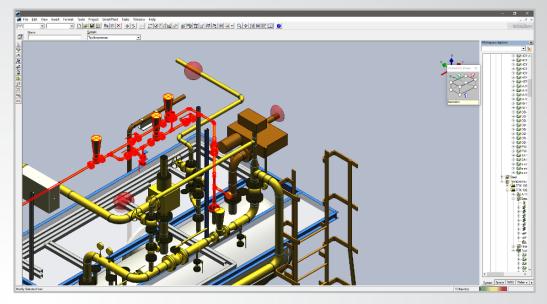


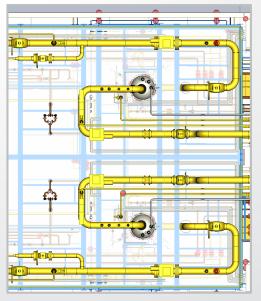
Advantages

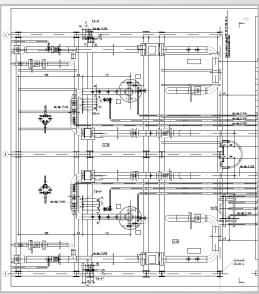


3D modeling allows:

- Automatically detect collisions made in the design
- Improve the quality of design solutions, accelerate the design process and analyze the progress in the implementation of the project
- Ensure the integration of developers across disciplines and the dynamics of interaction with remote departments
- ▲ 3D model is the central control element in engineering and the main source of structured information (obtaining comprehensive information about the object, equipment, etc.)
- Automatic unloading of bills and specifications eliminates the human factor when calculating bills and volumes
- In case of reconstruction and technical retrofit, all necessary data can be uploaded from the BIM model





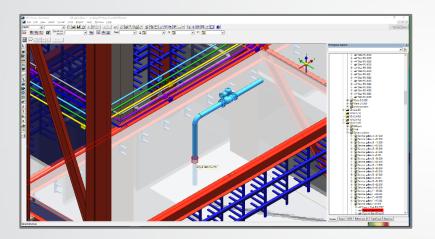


Competencies

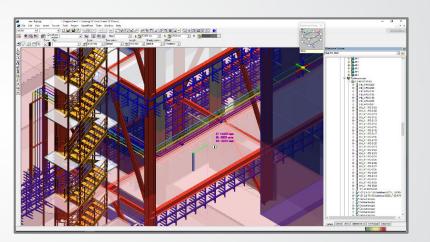


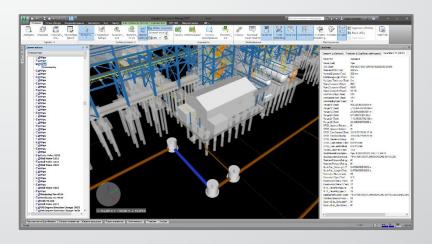
R&DI "**PEGAZ**" has the following competencies in the field of 3D design:

- Design of the object in 3D from scratch;
- Creating a 3D model based on completed drawings;
- ▲ Unloading plans and sections from the 3D model, as well as unloading as-build drawings;
- ▲ Unloading from the 3D model of specifications, work scope bill, pipeline bills, etc.





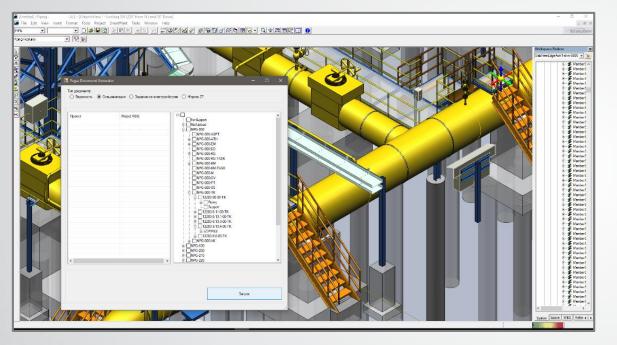




SPECIFICATIONS UPLOADING



The most stringent requirements are imposed on the design stage today, including those related to reducing the development time and improving the quality of projects. At an oil refinery, the accuracy and timely execution of the installation part of the project, including piping drawings, as-built drawings, a list of process pipelines, specifications and general data, are extremely important.





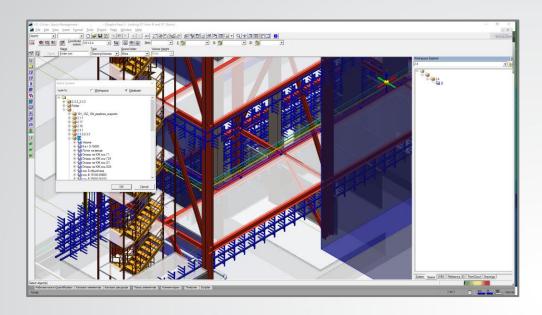
(COE F	G	Н	1 1	J K L M	N O P	0	R	S T	UV
Sez occuators ripascodinipareza et of the proprietor	Позиция	Наименование и техническая характеристика	Тип, марка, обозначение документа, опросного листа	Код продукции	Поставщик	Единица измере- ния	Коли- чество	Масса 1 ед., кг	Примеча
OCCUBIO	1	2	3	4	5	6	7	8	9
2000		Изделия							
pacryocipaesees of ERCH «PGOAZ» send wheat censent									
to a pacing by at SRDs sorbund y		Труба DN100 (4"), материал - ASTM A 333 GR 6, класс 150 S=40 (6,02 мм)	ANSI B36.10			м	77,2	16,07	
re anneptaleure a p re is the property all the copied or distribu-		Труба DN50 (2"), материал - ASTM A 333 GR 6 Galvanized, класс 150 S=80 (5,54 мм)	ANSI B36.10			м	89	7,48	
n we required This docume and shall ner		Детали							
		Отвод 90° DN100 (4°), T=S-40 (6,02 мм)	ANSI B16.9						
П		Материал - ASTM A 420 Gr. WPL6 класс 150	tnaH	ина	1	шт	4	3,9	
H		Отвод 90° DN50 (2"), T=S-80 (5,54 мм)	ANSI B16.9	MA	-				
Н		Материал - ASTM A 420 Gr. WPL6 класс 150				шт	6	0,94	
Ш									
Н		Заглушка эплиптическая DN100 (4"), T=S-40 (6,02 мм)	ANSI B16.9						
		Материал - ASTM A 420 Gr. WPL6 класо 150				шт	- 1		
	1_	Заглушка аллиптическая DN50 (2"). T=S-180 (8.74							
SOOK, 118, No.		MM)	ANSI B16.9						
\top	1								
Roat. Late									
No				New York Deep Name	Cogn. Gara				
ш	ł			People People		а тенологиче	OKK KOMMI	мисций ,	Ner 1
H E. Ne 103.E. CO??					-	eundmauns o		_	
Ĭ				Name of the Control o		изделий и ма	териалов	*	OOO HAUN 4UI
									Формат АЗ
	Повиция	Наименование и техническая характеристика	Тип, марка, обозначение документа, опросного листа	Код продукции	Поставщик	Единица измере- ния	Коли- чество	Масса 1 ед., кг	Примеча
	1	2 Инструкция Штампы Ввод дан	а На печать	4	5	6	7	8	9

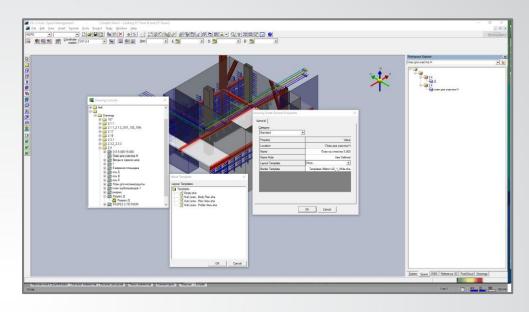
All the listed documentation is a package of interrelated documents, which means a significant reduction in design time while improving its quality on the basis of integrated solutions used by R&DI "PEGAZ".

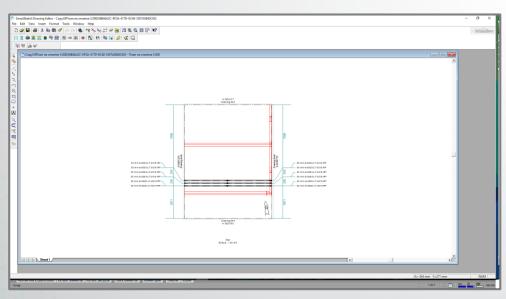
The function of unloading specifications has been debugged in all software products used by R&D "PEGAZ". All required specifications can be downloaded into 3D models.

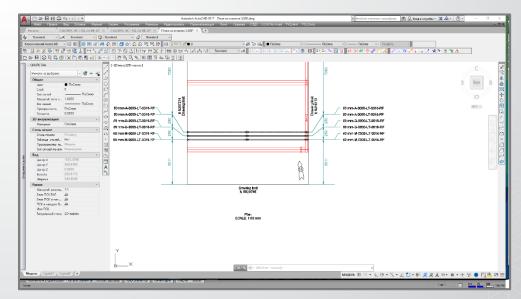
UNLOADING PLANS, VIEWS, SECTIONS FROM A 3D MODEL







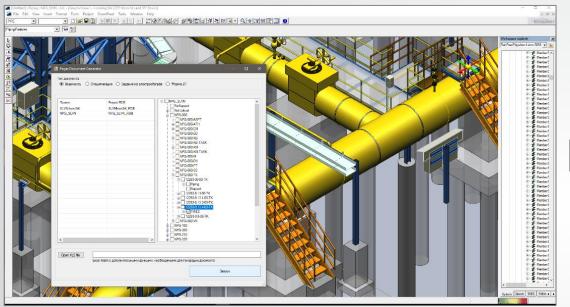




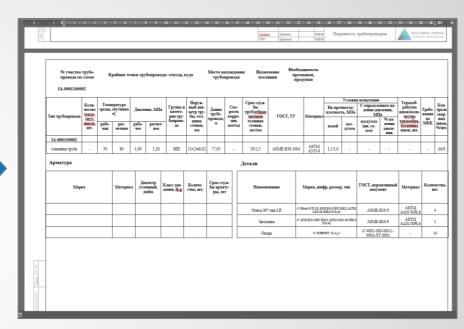
UNLOADING LISTS OF PIPELINES



In the projects implemented by R&DI "PEGAZ" in 3D, there is an additional option, unloading pipeline lists from the project.





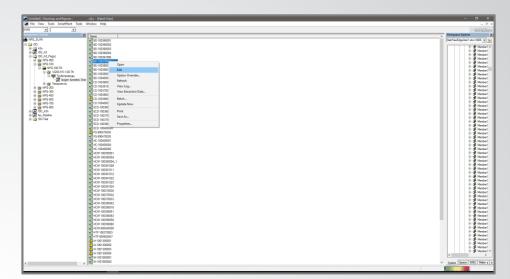


UPLOADING AS-BUILT DRAWINGS



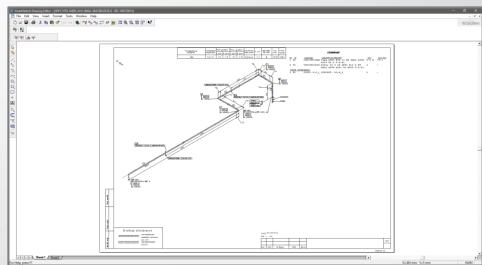








The as-built drawing is a schematic isometric image of the pipeline with the designation of all elements and indication of the required mounting dimensions. As-built drawings significantly reduce the design time, simplify further work with the finished project. It also becomes easier to design mounting drawings.



IMPLEMENTED PROJECTS IN 3D



One of the largest objects implemented by R&DI PEGAZ using 3D design is the **Gas treatment unit at** the **Slavyanskaya** compressor station (CS)". As a part of the project "Development of gas transmission capacities of the North-West region. Section Gryazovets - CS "Slavyanskaya". Compressor Station Slavyanskaya will become one of the largest facilities of the Unified Gas Supply System of Russia and will provide gas supply to the gas pipeline of Nord Stream 2. The existing experience and competence in the design of oil and gas processing and petrochemical facilities allow us to implement the most complex and large-scale projects.

Implemented projects:

- 1. «Air separation unit for the project «UzGTL Uzbekistan». Steam supply system;
- 2. Gas treatment unit at the Slavyanskaya compressor station (CS);
- 3. The Offshore Superfacility Construction Yard (OSCY);
- 4. Amur Gas Chemical Complex (GCC). UI&O Facilities;
- 5. CDU/VDU Complex of Gazpromneft-ONPZ, JSC
- 6. Gas Chemical Complex within Ethane-rich Gas Processing Complex near the Ust-Luga settlement. Stages 2.2, 2.3, 2.5, 2.6, 2.7.
- 7. Execution of work on the development of detail design documentation "Technical retrofit. Restoration of concrete floors of objects 269/7, 269/8, 269/9, 269/10, 269/11, 269/13, 269/14, 269/15, 269/16, restoration of fireproof coating, elimination of defects in reinforced concrete floors of CDU-VDU-6
- 8. Implementation of work on the development of design documentation for the section "Measures for demolition or dismantling of capital construction facilities" of detail design documentation for the facility "Construction of storage tanks P-17, P-22, P-23 in the tank farm 10/32 of section No. 10 of the Refinery of Gazprom Neftekhim Salavat, LLC
- 9. Revision of design and detail design documentation for the project No. 40-U-16-93-10-N-538-0022 "Construction of tanks P-17, P-22, P-23 in the tank farm 10/32 of workshop No. 10 of the refinery of Gazprom Neftekhim Salavat, LLC "by changing the height of the walls of the tanks
- 10. Analysis of design and Detailed design documentation in terms of process compliance of facilities of the catalytic cracking complex with a capacity of 1,095 thousand tons/year of the Refinery of Gazprom Neftekhim Salavat, LLC. Referencing to external process communications.
- 11. Execution of a set of works on start-up and commissioning of the facility "System of ozone treatment within wastewater treatment from phenol of sulfide-alkaline drains treatment unit of the Refinery and the Monomer Plant of Gazprom Neftekhim Salavat, LLC.
- 12. Development of the section of Detailed design documentation "Dismantling management plan. Requirements for ensuring the safety of equipment for lines 110 and 120 of the gas stream pretreatment unit in the installation area at the Kazachya compressor station, taking into account the extension of the warranty, as well as subsequent dismantling and packaging"
- 13. Location of the facility: Russian Federation, Krasnodar Territory, Krymsky district, Krasniy Oktyabr village, CS Kazachya
- 14. Development of special sections of project design documentation, execution of verification calculations for the facility "Gas treatment unit at the Slavyanskaya compressor station (CS)" as part of the project "Development of gas transmission capacities of the North-Western region. Section Gryazovets CS Slavyanskaya

IMPLEMENTED PROJECTS IN 3D



Implemented projects:

15. Execution of design work within the framework of the investment program "Program of measures to eliminate violations of industrial safety, labor protection for 2015-2020" on the following activities:

- Equipping tanks R-183, R-185 with high-speed shut-off valves. Unit 35-11/300 (item 99);
- Installation of a scheme for produced water drainage from the E-Ireflux drum into a closed system. Unit 35-8/300B (item 100);
- Installation of the floor heating layout in the open pump station 35-75 in unit 35-8/300B (item 101);
- Installation of an emergency release system for the equipment of the unit sections (hydrotreating, stripping, reforming, stabilization, tank farm). Unit 35-8/300B (item 102);
- Installation of block or shut-off valves with remote control on the suction and discharge lines of pumps. Unit 35-8/300B (item 103);
- Installation of the breathing layout for drums E-107 and E-109 to the LP flare. Unit 35-8/300B (item 106);
- Equipping compressors PK-1,2,3,4,5,6,7 with an automatic start-up check and interlock system in case the shaft-turning gear is engaged with the compressor shaft before the compressor starts. Unit 35-6/300 (item206);
- Installation of shut-off valves with remote control on suction and discharge lines on compressors PK-1, PK-2, PK-3, PK-4, PK-5, PK-6, PK-7. Units 35-6/300 (item 206);
- Replacement of the drain drum E-7 and its piping, with ESD provision. Unit 35-8/300B (item 211);
- Installation of shut-off valves with remote control on the suction and discharge lines of compressors PK-1, PK-2, PK-3. Unit 24-7 (item 212);
- Equipping compressor PK-4 of unit 35-6/300 with an automation system for gas discharge into the flare system. Unit 35-6/300 (item 235);
- Equipping pumps TsN-1, TsN-2, TsN-3, TsN-4, N-1, N-2, N-3, N-4, N-7, N-8, N-9, PN-1, PN-2, N-10, N-12, N-13, N-14, N-15, N-16, N-26, N-27, PN-24, PN-25 with a system of interlocks that exclude start-up or stop the operation of the pump if there is no fluid transported in the housing. Unit 35-8/300B (item 209, 236).

16. Execution of design and survey work within the framework of the investment program "Program of measures to eliminate violations of industrial safety, labor protection for 2015-2020" on the following measures:

- Equipping pumps and compressors handling combustible products with block or shut-off devices with remote control on the suction and discharge lines (item 138);
- Installation of a header for discharge to the flare from equipment of unit 36-20 (items 133, 139);
- Equipping pumps handling combustible products with block or shut-off devices with remote control on the suction and discharge lines, unit 36-20 (item 142);
- Installation of flame arresters on breathing valves of vertical steel tanks No. 811, 812, 813, 814, 815, 816, 817 (item 144);
- Installation of emergency ventilation in the pump rooms and a gas detection audible alarm in front of the entrance doors in the feed, cold, hot pump rooms at unit 37-10 (items 146, 148);
- Installation of explosion-proof check valves on supply ventilation at unit 37-10 (item 147);
- Installation of open evacuation stairways for equipment maintenance platforms located along the outer perimeter of equipment structures placed outside the diking and equipped with solid fences (screens) made of non-combustible materials with a fire resistance limit of at least 0.25 at unit 37-10 (item 149);
- Equipping pumps that handle combustible products with block or shut-off devices with remote control on the suction and discharge lines of unit 37-10 (item 150);
- Bringing the lighting in industrial premises of unit 37-30 to standards (item 156);
- A gas detection audible alarm in front of the entrance doors in the rooms of the hot and cold pump units 37-50 (item 160);
- Equipping pumps that handle combustible products with block or shut-off devices with remote control on the suction and discharge lines of unit 37-50 (item 163);
- Increasing the diameter of the header for gas discharge to the flare from equipment of unit 37-50 (item 164);
- Equipping pumps that handle flammable products with block or shut-off devices with remote control on the suction and discharge lines of unit 37-40 (item 169);
- Equipping pumps with an interlock and alarm system for exceeding the temperature of pump bearings and electric motors (N-1,2,2a, 3,4, 6,6a, 7,8,8a, 9,10,10a, 11,14,16,17, 17a, 18,18a, 19,20,20a, 21,22,23,23a, 26,27,28,29,31,32,35) of unit 37-40 (item 170);
- Increasing the diameter of the header for discharge to the flare from the equipment of unit 37-40 (item 171);
- Provision and installation of an in-line analyzer to determine the content of phenol in the common pipeline of warm water at recycling water supply unit-3 from units 37-10, 37-30, 37-40, 37-50 (item 172);
- Installation of an inert gas purging system for the equipment of unit 39-10 during preparation for repair (item 173);
- Replacement of frame press filters of unit 39-10 with leak-tight cartridge-type filters (item 174);
- Equipping pumps that handle combustible products with block or shut-off devices with remote control on the suction and discharge lines of unit 39-10 (item 175);
- Changing the piping routing for Kr-1,2,3,4,5,6,13,14,15,16,17,18,19,20,21, 1,2 flow, in order to exclude stagnant zones of unit 39-40 (item 189);
- Equipping pumps that handle combustible products with block or shut-off devices with remote control on the suction and discharge lines, unit 39-40 (item 190).

IMPLEMENTED PROJECTS IN 3D



Implemented projects:

- 17. Execution of a complex of works (survey and design works, passing expertises, author supervision) within the framework of the implementation of the investment project "Construction of a light oil product loading station" LLC LUKOIL-Permnefteorgsintez
- 18. "Gazpromneft-Moscow Refinery", JSC Advanced Oil Refining Complex (AORC)
- 19. Design of the Sulfur recovery unit (SRU-2) (including acid gas flare facilities) within the framework of the "Advanced Oil Refining Complex (AORC)" project.
- 20. Calculation of the Air cooling unit 604/6 inlet manifold, calculation of modified support structures, amendments to the detailed design and estimate documentation based on the results of calculations within the framework of project No. 739.11.304-01054-TKh, ACU 604/6.

Calculation of the Air cooling unit 604/6 outlet manifold, calculation of modified support structures, amendments to the detailed design and estimate documentation based on the results of calculations within the framework of project No. 739.11.304-01054-TKh, ACU 604/6.

- 21. Development of Detailed design documentation within the framework of the project "Retrofitting of the primary ammonia condensation unit with the installation of an additional section of the ACU 604/6 at the synthesis unit"
- 19. Execution of design and survey works, provision of author supervision services within the framework of the Investment project "Reconstruction of the Novoselki filling station" (investment project code D394P0102C). Including the development of project design documentation and update of Detailed design documentation for the Facility "Access road from the public road "StaroSimferopolskoe shosse Slashchevo" to the industrial and process complex of Novoselki filling station

Development of Project design and/or Detailed design documentation and engineering surveys at JSC Gazpromneft-ONPZ for the Facility:

1. Replacement of fans P-3, P-4.

Replacement of the spring-loaded pressure safety valves on the discharge lines of the 1st stage of gas reciprocating compressors GK 9-16 with a larger diameter at the compressor station, title 12, of the gas fractionation unit.

3. Replacement of drums at the additive supply unit.

Location of the facility: Russian Federation, Omsk, industrial site of Gazpromneft-ONPZ JSC

Development of Detailed design documentation for the buildings of the concrete plant and the production and storage area for the facility "The Offshore Superfacility Construction Yard (OSCY). Complex for the manufacture of gravity base structures and the integration of topside modules (GBS site)

Development of project design and detailed design documentation for foundations for buildings and structures according to optimized design solutions for the facility "The Offshore Superfacility Construction Yard (OSCY). Complex for the manufacture of gravity base structures and the integration of topside modules" (GBS site)

- 25. Adjustment of the Project design documentation subsection "Process solutions" on the production technology of the concrete plant site, taking into account the optimization of design solutions for the facility "The Offshore Superfacility Construction Yard (OSCY). Complex for the manufacture of gravity base structures and the integration of topside modules (GBS site)
- 26. Amendments and additions to the Project design documentation for the facility "Offshore Superfacility Construction Yard (OSCY). Complex for the manufacture of gravity base structures and the integration of topside modules (GBS site)
- 27. Development of the Detailed design documentation for the facility "Offshore Superfacility Construction Yard (OSCY). Complex for the manufacture of gravity base structures and the integration of topside modules. Complex for the manufacture of topside modules" (Site of Topsides No. 1)

Development of the Project design and Detailed design documentation for the facility "Offshore Superfacility Construction Yard (OSCY). Complex for the manufacture of pipeline sections" (Site of Topsides No. 2)

Adjustment of the Project design and Detailed design documentation for the facility "The Offshore Superfacility Construction Yard (OSCY). Complex for the manufacture of pipeline sections" (Site of Topsides No. 2)

Adjustment of the Project design and Detailed design documentation for the facility "The Offshore Superfacility Construction Yard (OSCY). Complex for the manufacture of pipeline sections" (Complex of Topsides No. 2)

Adjustment of the Project design and Detailed design documentation for the facility construction "The Offshore Superfacility Construction Yard (OSCY). Complex for the manufacture of gravity base structures and the integration of topside modules" (GBS site)

- 30. Development of Detailed design documentation for the radiographic control unit (workshop No. 005 as per Plot Plan) for the facility "The Offshore Superfacility Construction Yard (OSCY). Complex for the manufacture of pipelines sections"
- 31. Development of a Detailed design project "Air separation unit for the project "UzGTL Uzbekistan". Steam supply system"

Facility location: Republic of Uzbekistan, Kashkadarya region, Guzar district

- 32. Development of Project design documentation for the Amur gas chemical complex (GCC). UI&O Facilities
- 33. Services related to Construction Author Supervision for CDU/VDU Complex on the territory of the existing Omsk Refinery (JSC Gazpromneft-ONPZ)
- 34. Review of detailed technical documentation for the CDU-VDU complex at the existing Omsk Refinery (JSC Gazpromneft-ONPZ)
- 35. Amendments to the Project design documentation and engineering surveys on the JSC Gazpromneft-ONPZ Facility: "Reconstruction of the catalytic reforming unit L-35/11-600"

PROJECTS UNDER IMPLEMENTATION



- ▲ "UI&O Facilities included in C3 package. Gas chemical complex within Ethane-rich Gas Processing Complex ongoing
- "Gas chemical complex within Ethane-rich Gas Processing Complex. UI&O facilities located within the borders of the Plot Plan of Quarters 11, 21, 31" ongoing
- ▲ "Gas chemical complex within Ethane-rich Gas Processing Complex. Branch Backup Gas Pipeline to GDP" (title 12750) and "GDP" (title 12751) ongoing
- "Gas chemical complex within Ethane-rich Gas Processing Complex. Flare facilities of the ethylene tank farm (tit. 12460), flare facility (tit. 12470)"
- ▲ "Gas Chemical Complex within Ethane-rich Gas Processing Complex near the Ust-Luga settlement. Stages 2.2, 2.3, 2.5, 2.6, 2.7. UI&O facilities. Non-production facilities"
- ▲ "Gas chemical complex within Ethane-rich Gas Processing Complex. UI&O facilities located within the borders of the Plot Plan of Quarters 11, 21, 31" ongoing

FURTHER USE OF THE BIM MODEL

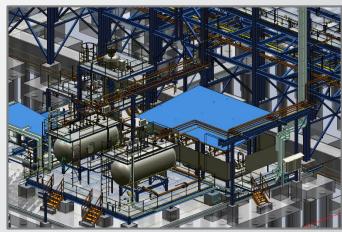


After completing the design phase, the data from the BIM model can be used to:

- ▲ Equipment supply management (detailing a comprehensive plan and schedule of equipment supply, taking into account construction work, supplier data management);
- ▲ Obtaining comprehensive information about the facility, equipment, etc. During modernisation and technical re-equipment, all the necessary data can be unloaded from the BIMmodel (the BIM model is the central control element in engineering and the main source of structured information);
- Early development of documentation by a construction contractor;
- **Ensuring the resource planning of the construction contractor within the established time frame;**
- ▲ Control and management of construction, control over violations of construction technologies;
- ▲ Ensuring clarity of assignments and clarity of reports during the implementation of the project;
- ▲ To ensure the selection of optimal solutions in the organization of construction and preparation of work implementation plan/Method Statements for crane operation.

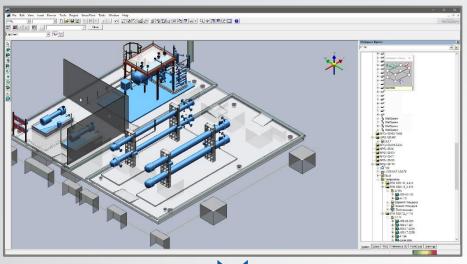






Supply management







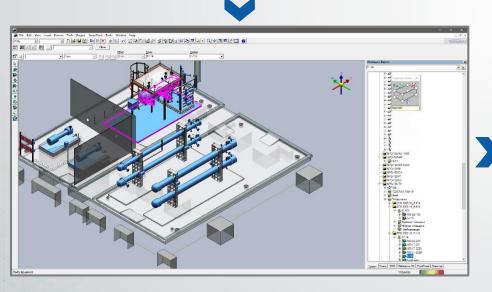
Active management of vendor data

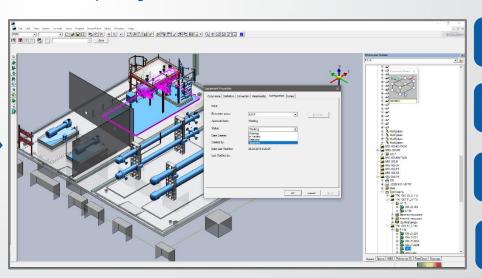
Advanced receipt of the input data from the supplier for detail design Detailing of the comprehensive plan and schedule of deliveries, taking into account construction works

Method C-P-E (construction-procurement-engineering)

THE STATUS OF DELIVERIES IS REFLECTED IN THE MODEL

The work schedule is a source of information for procurement management systems. It determines the equipment installation period and, consequently, the date of placing the order





In

Under review

Rejected

Approved

PROCUREMENT AND SUPPLY SERVICES



ANALYTICS

PROCUREMENT

SUPPLY

- market research and analysis
- forecasting and determining the needs of all types of material resources, methods and sources of their coverage
- planning of resources procurement
- planning of supply
- inventory optimization
- selection of optimal procurement procedures
- project documentation expertise in terms
 of applied technical solutions
- monitoring of new products usage at operation sites, etc.

- equipment selection based on import substitution
- assessment of all sources of meeting requirements of material resources
- bid procedures
- conducting a technical audit
- selection of temporary storage sites
- execution of a Product Delivery Contract with suppliers
- obtaining and organizing the delivery of real resources
- organization of storage facilities, which are a part of the supply service
- providing consumers with the necessary material resources

- control of fulfillment of contract obligations and supply time of suppliers
- control of material resources consumption
- input control over the quality and completeness of incoming material resources
- control of inventories
- making claims to suppliers and transport organizations
- evaluation of the effectiveness of the supply service, development of measures to coordinate the activities of the supply service and increase its effectiveness
- evaluation of the fulfillment of contractual obligations by the supplier

MAJOR IMPLEMENTED PROJECTS

Completed construction



No.	CLIENT	FACILITY	CAPACITY	SCOPE OF WORK
1	Branch of ANK "Bashneft" JSC "Bashneft- Novoil"	Reconstruction of AGFU-1 (absorption/gas fractionation unit) New construction DIH, DIP units	350 thousand tons/year of gas, 450 thousand tons/year of gasoline stabilization 600 thousand tons/year	 Project Design Documentation Detail Design Documentation Support in State Expert Review (GGE) Author supervision Commissioning
2	Bashneft-Ufaneftekhim branch of ANK Bashneft, JSC.	Technical retrofit of facilities (sections 100, 200, 300) and new construction of the DIP unit at the L-35/5 plant for the production of aromatic hydrocarbons	2 million tons/year	- Detail Design Documentation - Technical projects for non- standard equipment - Author supervision - Commissioning
3	Bashneft-Ufaneftekhim branch of ANK Bashneft, JSC.	Technical retrofit of sections 100, 200, 300, 400 of the delayed coker unit in order to increase productivity	from 1.2 million tons/year to 1.6 million tons/year	 Project Design Documentation Detail Design Documentation Support in State Expert Review (GGE) Author supervision Commissioning
4	Branch of ANK "Bashneft" JSC "Bashneft- Novoil"	Retrofit of the plant's fuel network	-	- Detail Design Documentation - Author supervision
5	Branch of ANK "Bashneft" JSC "Bashneft- Novoil"	Installation of the gas drying unit of the isomerization section of the L-35-11/1000 unit	1.5 million tons/year	- Detail Design Documentation - Author supervision - Commissioning
6	"Nizhnekamsk ONPZ" OJSC	Installation of the heater at the non-oxidized road bitumen production unit		 Engineering design of the furnace Author supervision of the manufacture and installation of the heater

Reconstruction of AGFU-1 (absorption/gas fractionation unit)



Client: Branch of ANK "Bashneft" JSC "Bashneft- Novoil"

Year: 2010 - 2011

Capacity: 350 thousand tons/year for gas, 450 thousand tons/year for gasoline stabilization

Scope of work: Development of project design and detail design documentation for the construction of a new DIP unit and the reconstruction of

the DIH unit, support in the State Expert Review with a receipt of a positive conclusion, author supervision, commissioning.











Technical retrofit of facilities (s. 100, 200, 300) and the construction of the DIP unit on the block L-35/5



Client: Bashneft-Ufaneftekhim branch of ANK Bashneft, JSC.

Year: 2010 - 2012

Capacity: 2 million tons/year

Scope of work: development of detail design documentation for the installation of a new dependanization unit on L-35/5 and technical retrofit of

sections 100, 200, 300, technical projects for non-standard equipment, implementation of author's supervision, commissioning











Technical retrofit of sections 100, 200, 300, 400 of the delayed coker unit



Client: Bashneft-Ufaneftekhim branch of ANK Bashneft, JSC.

Year: 2010 - 2012

Capacity: 1.6 million tons/year. Increased performance of the facility by 30%

Scope of work: development of design and detail design documentation, support of State expert review with a positive conclusion receipt,

implementation of author supervision, commissioning







Retrofit of the plant's fuel network



Client: Branch of ANK "Bashneft" JSC "Bashneft- Novoil"

Year: 2009 - 2011

Scope of work: development of detail design documentation, author supervision



Installation of the gas drying unit of the isomerization section of the L-35-11/1000 unit



Client: Branch of ANK "Bashneft" JSC "Bashneft- Novoil"

Year: 2007 - 2008

Capacity: 1.5 million tons/year

Scope of work: development of detail design documentation, author supervision, commissioning







Installation of the heater at the non-oxidized road bitumen production unit



Client: "Nizhnekamsk ONPZ" OJSC

Year: 2005

Scope of work: development of a technical project, author supervision of the manufacture and installation of the heater



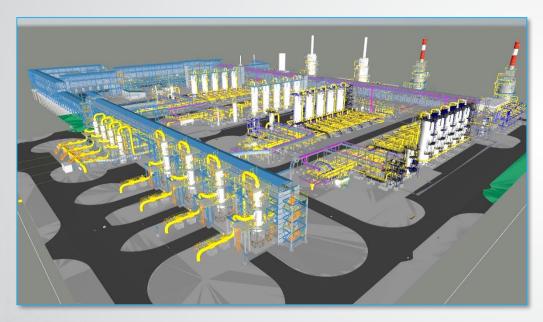


EXAMPLES OF MAJOR IMPLEMENTED PROJECTS OVER THE PAST 2 YEARS

Compressor Station "Slavyanskaya"



One of the largest objects implemented by R&DI "PEGAZ" using 3D design is the Gas treatment unit at the Slavyanskaya compressor station (CS)". As a part of the project "Development of gas transmission capacities of the North-West region. Section Gryazovets - CS "Slavyanskaya" is one of the largest facilities of the Unified Gas Supply System in Russia. The compressor station provides gas supply to the Nord Stream-2 gas pipeline. The existing experience and competence in the design of oil and gas processing and petrochemical facilities allow us to implement the most complex and large-scale projects.





Ufa Research and Design Institute "PEGAZ" ahead of schedule completed the development of design and detail design documentation for the Gas treatment unit at the Slavyanskaya compressor station for the needs of "Gazprom" PJSC

EXAMPLES OF MAJOR IMPLEMENTED PROJECTS OVER THE PAST 2 YEARS

"The Offshore Superfacility Construction Yard (OSCY), including UI&O facilities"



R&DI "PEGAZ" in the period from 2018-2020 for the Client "NOVATEK-Murmansk", LLC successfully completed the work on the development of design and detail design documentation, the provision of author supervision services for the project "The Offshore Superfacility Construction Yard (OSCY)" on the complexes:

- ▲ Complex for the manufacture of pipelines sections (Upper structures site No. 2)
- ▲ Complex for the manufacture of gravity base and the integration of top structure modules (Gravity based structures site)
- ▲ Complex for the manufacture of gravity base and the integration of top structure modules. Complex for the manufacture of modules of upper structures " (Upper Structures Site No. 1)
- "Utilities and off-site facilities" with interconnecting utilities (networks), including those laid in constrained conditions and on pipe-racks, sewage pump stations, administrative buildings, warehouse buildings and structures, etc.

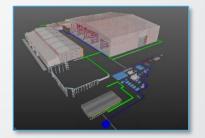


Brief description of the facility:

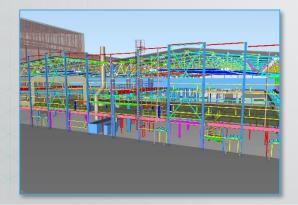
The facility is intended for the manufacture of offshore complexes for the production, storage and shipment of liquefied natural gas (LNG) and stable gas condensate (SGC) on gravity based structures (GBS), offshore production complexes, including:

- ▲ for the fabrication of gravity based structures (GBS) in two dry docks with the possibility of building two GBSs at the same time;
- for integration (installation and erection) of the upper structures on the GBS.

Location of the facility: Russian Federation, Murmansk region, Kola district, rural settlement Mezhdurechye, village of Belokamenka.







- Expert reviews were obtained according to the results of the work performed: the non-state expert review, the State Environmental Expert Review, the Main State Expert Review Board;
- Approval from Federal Agency for Fishery was received;
 Positive conclusion of sanitary and epidemiological expert review obtained with subsequent approval of sanitary protection zone by Rospotrebnadzor;
- Support was provided for the commissioning of facilities at the stage of acceptance;
- Rostechnadzor of Russia.

EXAMPLES OF MAJOR IMPLEMENTED PROJECTS OVER THE PAST 2 YEARS

"Amur Gas Chemical Complex (GCC). UI&O Facilities"



Within 2019 – 2020 R&DI "PEGAZ" successfully completed work on the development of the project design documentation for the project "Amur Gas Chemical Complex (GCC)" for the Client NIPIGAZ, JSC. UI&O Facilities"

Brief description of the facility:

Amur Gas Chemical Complex is a complex of process units for the production of polyethylene of various grades by polymerizing ethylene obtained by pyrolysis of the ethane fraction supplied from the Amur GPP (Gazprom Pererabotka Blagoveshchensk LLC) with additional off-site facilities.

Design capacity of the facility: 1,500 thousand tons/year for ethylene with subsequent polymerization and production of polyethylene of various grades in the amount of up to 1,500 thousand tons/year, in addition, by-products.

Location of the facility: Russian Federation, Amur region



As a result of the work performed, positive conclusions of the State Environmental Expert Review, the Main State Expert Review Board were obtained.

Design facilities:

7100 Buten-1 tank farm with pump station

7110 Hexene-1 tank farm with pump station

7120 Commercial LPG tank farm with pump station

7130 Isobutane tank farm with pump station

7150 Isopentane park with pump station

7160 Tank farm of C5 from pyrolysis with pump station

7170 C9+ Fraction tank farm with pump station

7180 C6-C8 Fraction tank farm with pump station

6600 Fuel gas treatment unit

1721 Propane fiscal metering unit

1720 Ethane fiscal metering unit

6700 Flare facilities of LPG tank parks

7300 LPG loading/unloading rack

7350 HFL loading/unloading rack

7370 Butene-1 automobile loading/unloading rack

7380 Hexene-1 automobile loading rack

7230 Warehouse for sulfuric acid and alkali

7240 Methanol tank farm with pump station

7360 Loading rack of acid and alkali

EXAMPLES OF LARGE PROJECTS IN PROGRESS

"Gas chemical complex within Ethane-rich Gas Processing Complex, including **UI&O Facilities**"



Since 2021, R&DI "PEGAZ" has been the developer of the project design and detail design documentation for the facilities of the UI&O facilities, temporary construction camp of the Gas chemical complex within Ethane-rich Gas Processing Complex, as well as the the section of the backup gas pipeline-branch to the GCP (Gas-control point) and GCP (Gas-control point), connection to the discharge header of the Slavyanskaya CS.

Brief description of the facility:

Gas chemical complex within Ethane-rich Gas Processing Complex will annually process 45 billion cub. m of gas, produce 13 million tons of LNG, up to 3.8 million tons of ethane fraction, up to 2.4 million tons of LPG and 0.2 million tons of pentane-hexane fraction. Natural gas remaining after processing (about 19 billion cub. m) will be sent to the "Gazprom" gas transmission system.

Location of the facility: Russian Federation, Leningrad region (near Ust-Luga)



Design facilities:

12490 Central control room

13100 Lead specialists building

13110 Central plant laboratory and metrological laboratory

13120 Samples storage

13130 Administrative building No. 1 with communications centre

13140 Household building with a canteen (Construction phase 1)

13190 Fire station

13210 Paramilitary mine rescue squad building

13200 Heat and smoke chamber

Training facility

16190 Firefighting pump station

16191 Fire water tanks

23150 Household building (Construction phase 2)

13268 Chemicals warehouse

13240 Machinery and repair depot consisting of:

13241 Machinery and repair workshop building

13242 Cutting fluid, grease and oil warehouse

13244 Machinery and repair shop materials covered storage area

13247 Equipment open storage area

13260 Material supplies storage area consisting of:

13261 Warm and cold warehouse building

13264 Cylinder storage warehouse

13266 Laydown area with gantry crane

13160 Central gatehouse with security post No. 1

13267 Security post No. 17

13171 Gate house No. 4

13173 Gate house No. 2

13176 Gate house No. 3

Fencing of the whole GCC territory

Temporary construction camp TCC 2,3 in full scope, including external networks

ONE OF THE LARGEST PROJECTS

Which was developed with the participation of our specialists



AMUR GPP

Scope of work:

- ▲ Development of FEED and DD of helium production: fine treatment unit and helium liquefaction plant
- ▲ Development of the project design documentation for:
 - Gas separation and measurement unit
 - Acid gas removal unit (including amine regeneration unit)
 - Gas deep dehydration unit
 - Gas fractionation unit
 - Gas compression and LP gas dehydration units, process condensate stripping, heating and coolant circulation
- ▲ Development of the project design documentation for the "Beach landing facility on the Zeya River"
- ▲ Development of project design documentation for railway transport facilities
- Development of project design documentation "Zavodskaya railway station"
- Development of documentation "Landfill of solid household and industrial waste"
- ▲ Development of the right-of-way design as part of the project design documentation
- ▲ Development of "Environmental Impact Assessment (EIA/OVOS)" section
- Development (separately) for the period of construction and operation:
 - Draft standards of waste generation and limits on their placement
 - Draft standards for maximum permissible emissions of pollutants into the atmospheric air
 - Draft standards for maximum permissible discharges of pollutants into a water body
- Development of the "Sanitary Protection Zone Justification Project"
- Development of project design documentation "Residential settlement"



No.	Activity Name	Scope of work	Name of the General Client/Client
1	Development of detail design documentation and sections of Technical project of the mobile free water knock-out unit	Development of a package of sections of the technical project of the mobile free water knock-out unit	"Ufaneftegazmash", SPA LLC
2	Development of software for an automated process control system for the Mobile Free Water Knock-out Unit	Software development of the complex	"Ufaneftegazmash", SPA LLC
3	Development of process and hydraulic calculations, selection and supply of internal contact devices for absorbers of desulfurization units No. 19, 20, 21 with total capacity up to 7 billion Nm3/year for gas for Mubarek GPP, LLC (Uzbekistan)	- Development of process calculations - Development of process calculations - Selection of equipment	The Principal Client is LLC Mubarek GPP (Uzbekistan) JSC Uralkhimmash
4	Development of project design documentation and detail documentation for the facility «Automation of pressure-reducing cooling station 100/30 and general technical parameters with information output to the AWS" The pressure-reducing cooling station 100/30 is the object of automation	- Development of project design documentation - Development of Detailed Design Documentation	PJSC ANK Bashneft
5	Development of detail design documentation (upper level of APCS) for the object "Installation of a permanent circuit for catalyst sulfidation during the period of overloading and replacement of the catalyst in hydrotreating reactors (para. 67, 68, 69, 70 - unclaimed equipment) units L-24-5, L-24-7 PP UNPZ of gas-catalytic production of Bashneft-UNPZ branch of PJSC ANK Bashneft	- Development of detail design documentation.	PJSC ANK Bashneft
6	Development of project design documentation for the project "Technical re-equipment of the booster pump station (UPSV)-605 Oil and gas production directorate NGDU "Tuimazaneft"	- Development of project design documentation	PJSC ANK Bashneft
7	Development of design and Detailed design documentation for the project: Infrastructure development of the well cluster No. 11,12 with utilities line area Kolvinskoye oil field	- Development of design documentation - Development of detail design documentation	
8	Development of design and detail design documentation for the project: Infrastructure development of the well clusters No. 1, 2, 3. Extension. Kolvinskoye oil field	- Development of design documentation - Development of detail design documentation	
9	Development of design and detail design documentation for the project: Infrastructure development of the well cluster No. 140. Extension. Sredne-Lekhkaryaginskoye oil field	- pre-FEED - Development of design documentation - Development of detail design documentation	General Client - NNK-Pechoraneft, JSC NIPI ONGM LLC
10	Development of Project Design and Detailed Design Documentation for the project: Infrastructure development of the well cluster No. 63. Extension. Lekkharyaginskoye oil field	- pre-FEED - Development of design documentation - Development of detail design documentation	
11	Development of design and detail design documentation for the project: Infrastructure development of the well cluster No. 65 with utilities line area. Phase 2 (construction phase). Lekkharyaginskoye oil field. Correction of design documentation in terms of the allocation of stages (construction phases)	- pre-FEED - Development of project design documentation	
12	Implementation of work on the development of Detailed design documentation "Review of design layout of the wax loading unit of Monomer Plant Workshop No. 20» at the facilities of Gazprom Neftekhim Salavat LLC	- Execution of measurement work - Development of detailed design documentation - Development of cost estimate documentation - Support in expert reviews	Investor-Developer - Gazprom Neftekhim Salavat, LLI SALAVATNEFTEKHIMREMSTROY, JSC
13	Comprehensive technical survey of an equipment structure (area 1100) and equipment structure (area 300) for the project "Revision of the design scheme of the wax unloading unit of the Monomer plant workshop. No. 20"	- Technical inspection (technical condition assessment) - Determination of physical and mechanical characteristics of soils at the base of foundations	Investor-Developer – Gazprom Neftekhim Salavat, LLC SALAVATNEFTEKHIMREMSTROY, JSC
14	Execution of work on the industrial safety expertise of the detail design documentation for the project "Revision of the design scheme of the wax unloading unit"	Support of the industrial safety examination of detail design documentation	Investor-Developer - Gazprom Neftekhim Salavat, LLO SALAVATNEFTEKHIMREMSTROY, JSC
15	Author supervision for the project No. 39-U-16-1227-0021 "Revision of the design scheme of the wax unloading unit of the Monomer plant Workshop. No. 20, object 1227"	Provision of author supervision services	Investor-Developer - Gazprom Neftekhim Salavat, LLG SALAVATNEFTEKHIMREMSTROY, JSC
16	Engineering support in implementation of the projects: No. 739.10.301-78000 "Increase of the diameter of the sulphur condensate pipe from unit 4/11 to unit 4/7" of Gazprom Neftekhim Salavat LLC No. 739.11.329-75000 "Installation of EPVM-60 water heaters for objects 119, 122, 115" of Gazprom Neftekhim Salavat LLC No. 739.12.351-140 "Pump Flygt NP3171.091 SH53-274-00-1070, 22 kW" of Gazprom Neftekhim Salavat LLC.	Technical assistance during the implementation of projects in order to ensure compliance of the construction and installation works performed with the solutions contained in the detail design documentation.	Investor-Developer - Gazprom Neftekhim Salavat, LL SALAVATNEFTEKHIMREMSTROY, JSC
17	Execution of work on the development of Detailed design documentation "Technical retrofit. Restoration of concrete floors of objects 269/7, 269/8, 269/9, 269/10, 269/11, 269/13, 269/14, 269/15, 269/16, restoration of fireproof coating, elimination of defects in reinforced concrete floors of CDU-VDU-6"	- Development of detail design documentation - Support in expertise	Investor-Developer - Gazprom Neftekhim Salavat, LLI SALAVATNEFTEKHIMREMSTROY, JSC
18	Author supervision for the project "Technical retrofit of objects 269/7, 269/8, 269/9, 269/10, 269/11, 269/13, 269/14, 269/15, 269/16 of CDU-VDU-6"	Provision of author supervision services	"Gazprom Neftekhim Salavat", LLC



No.	Activity Name	Scope of work	Name of the General Client/Client
19	Technical inspection of the transformer substation of unit No. 269-15 within the framework of the project No. 2-22P-2016-N-269-0029 "Technical retrofit. Restoration of concrete floors of objects 269/7, 269/8, 269/9, 269/10, 269/11, 269/13, 269/14, 269/15, 269/16, restoration of fireproof coating, elimination of defects in reinforced concrete floors of CDU-VDU-6"	- Inspection of building structures - Assessment of the technical condition of building structures	Investor-Developer - Gazprom Neftekhim Salavat, LLC SALAVATNEFTEKHIMREMSTROY, JSC
20	Development of feasibility study and design estimates for the facility "Reconstruction of tank farm 10/32, workshop No. 10 of Oil refinery" of Gazprom Neftekhim Salavat, LLC. Scope of design work:construction of new tanks P-17, P-22, P-23 in the northern farm.	- Development of project design documentation - Development of detailed design documentation - Support in expert reviews	Investor-Developer - Gazprom Neftekhim Salavat, LLC SALAVATNEFTEKHIMREMSTROY, JSC
21	Author supervision for the project No. Nº 40-Y-16-93-10-H-538-0022 "Construction of tanks P-17, P-22, P-23 in the tank farm 10/32 of workshop No. 10 of the refinery of "Gazprom Neftekhim Salavat" LLC"	Provision of author supervision services	Investor-Developer - Gazprom Neftekhim Salavat, LLC SALAVATNEFTEKHIMREMSTROY, JSC
22	Implementation of work on the development of design documentation for the section "Measures for demolition or dismantling of capital construction facilities" of detail design documentation for the facility "Construction of storage tanks P-17, P-22, P-23 in the tank farm 10/32 of section No. 10 of the Refinery of "Gazprom Neftekhim Salavat" LLC"	- Development of project design documentation	Investor-Developer - Gazprom Neftekhim Salavat, LLC SALAVATNEFTEKHIMREMSTROY, JSC
23	Development of Detailed design documentation of APCS for the facility "Reconstruction of tank farm 10/32, workshop No. 10 of Oil refinery" including the development of technical specifications and Detailed design documentation for APCS	- Development of technical assignment for APCS for the facility - Development of detailed design documentation for APCS for the facility	Investor-Developer - Gazprom Neftekhim Salavat, LLC SALAVATNEFTEKHIMREMSTROY, JSC
24	Revision of design and detail design documentation for the project No. 40-U-16-93-10-N-538-0022 "Construction of tanks P-17, P-22, P-23 in the tank farm 10/32 of workshop No. 10 of the refinery of "Gazprom Neftekhim Salavat" LLC "by changing the height of the walls of the tanks	- Revision of design documentation - Revision of detail design documentation	Investor-Developer – Gazprom Neftekhim Salavat, LLC SALAVATNEFTEKHIMREMSTROY, JSC
25	Additional scope of work within the framework of the technical-working design of the automated process control system No. 6-60P-2016-93-10-N-538-0034-ATKH "Reconstruction of the crude storage 10/32 of section No. 10 of the refinery of "Gazprom Neftekhim Salavat" LLC	Adjustment of the technical detail design of APCS	Investor-Developer – Gazprom Neftekhim Salavat, LLC SALAVATNEFTEKHIMREMSTROY, JSC
26	Author supervision for the project No. 6-60P-2016-93-10-N-538-0034-ATKh technical-detail project of the APCS "Modifications of tank farm 10/32, workshop No. 10 (Oil refinery)	Provision of author supervision services	"Gazprom Neftekhim Salavat", LLC / "SALAVATNEFTEKHIMREMSTROY", JSC
27	Author supervision throughout the entire period of construction and commissioning of facilities according to the working project «Modifications of crude storage 10/32, workshop No. 10 of Refinery Gazprom Neftekhim Salavat, LLC Relocation of communication networks to the building of the central control center	Provision of author supervision services. Control over the compliance of construction and installation works with the project design and detailed design documentation developed on its basis.	"Gazprom Neftekhim Salavat", LLC / "SALAVATNEFTEKHIMREMSTROY", JSC
28	Execution of a set of works on the development of a consolidated estimate for the facility "Catalytic cracking complex with a capacity of 1,095 thousand tons/year of the Refinery of Gazprom Neftekhim Salavat, LLC including the development of preliminary specifications for the missing sections of the Detailed design documentation "Catalytic cracking complex with a capacity of 1,095 thousand tons/year at a refinery Gazprom Neftekhim Salavat, LLC	– Development of a consolidated cost estimate – Checking the completeness of the detailed design documentation development	Investor-Developer – Gazprom Neftekhim Salavat, LLC SALAVATNEFTEKHIMREMSTROY, JSC
29	Determination of the scope of work, development of the missing local cost estimates and adjustment of the consolidated cost estimate for the object "Catalytic cracking complex, capacity 1095 t/year" of Oil refinery of Gazprom Neftekhim Salavat, LLC.	- Determination of the scope of work - Development of missing local cost estimates - Adjustment of the consolidated cost estimate	Investor-Developer - Gazprom Neftekhim Salavat, LLC SALAVATNEFTEKHIMREMSTROY, JSC
30	Issuance of basic technical solutions, development of a preliminary summary estimate for the implementation of the project "Information, control and communication systems of a catalytic cracking complex with a capacity of 1,095 thousand tons per year" Refinery of Gazprom Neftekhim Salavat, LLC	- Issuance of basic technical solutions - Development of a preliminary summary estimate - Correction of technical requirements (TT) - Development of design documentation (including Development of the section "Information Security") - Support in industrial safety expertise	Investor-Developer – Gazprom Neftekhim Salavat, LLC SALAVATNEFTEKHIMREMSTROY, JSC
31	Analysis of design and Detailed design documentation in terms of process compliance of facilities of the catalytic cracking complex with a capacity of 1,095 thousand tons/year of the Refinery of Gazprom Neftekhim Salavat, LLC. Referencing to external process communications.	Technical analysis of project design and detailed design documentation in terms of process compliance of facilities	Investor-Developer – Gazprom Neftekhim Salavat, LLC SALAVATNEFTEKHIMREMSTROY, JSC



No.	Activity Name	Scope of work	Name of the General Client/Client
32	Development of the technical Detailed design "Upper level of APCS" for the project "Reconstruction of the diesel fuel hydrotreating unit L-24-6 (GO-2) of section No. 9 of the Refinery of Gazprom Neftekhim Salavat, LLC. "Replacement of compressors", including the implementation of projects integration (matching) performed by LLC SGNHP, LLC R&OI "PEGAZ", LLC NTM and the revision of the technical-detailed design and application software of APCS.	- Development of detailed design documentation - Support in industrial safety expert review	Investor-Developer - Gazprom Neftekhim Salavat, LLC SALAVATNEFTEKHIMREMSTROY, JSC
33	Execution of a set of works on start-up and commissioning of the facility "System of ozone treatment within wastewater treatment from phenol of sulfide-alkaline drains treatment unit of the Refinery and the Monomer Plant of Gazprom Neftekhim Salavat, LLC.	- Development of detail documentation - Procurement of missing equipment and materials - Installation work of equipment for stage 2 - Technical inspection of the facility - Implementation of the commissioning complex, bringing the object to the operating design parameters	Investor-Developer – Gazprom Neftekhim Salavat, LLC SALAVATNEFTEKHIMREMSTROY, JSC
34	Development of the section of detail design documentation "Project of organization of dismantling. Requirements for ensuring the safety of equipment for lines 110 and 120 of the gas stream pretreatment unit in the installation area at the Kazachya compressor station, taking into account the extension of the warranty, as well as subsequent dismantling and packaging" Location of the facility: Russian Federation, Krasnodar Territory, Krymsky district, Krasniy Oktyabr village, CS Kazachya	Development of the section of detail design documentation "Dismantling of equipment of lines V and G of the gas stream pretreatment unit of the Kazachya compressor station", including: - dismantling schedule; - work scope list; - a list of special equipment required for dismantling; - dismantling of equipment.	"Giprokislorod", JSC
35	Development of special sections of project design documentation, execution of verification calculations for the facility "Pretransport gas treatment unit at the Slavyanskaya compressor station (CS)" as part of the project "Development of gas transmission capacities of the North-Western region. Section Gryazovets – CS Slavyanskaya	- Development of special sections of design documentation	General Client - Gazprom Invest, LLC Giprokislorod, JSC
36	Execution of design work on the facility "Pre-transport gas treatment unit at the Slavyanskaya compressor station (CS) as part of the project "Development of gas transportation capacities of the North-West region. Section Gryazovets – CS Slavyanskaya	- Development of detail documentation - Development of a 3D model - Development of a 3D model - Development of the pipeline electrochemical protection section at the gas stream pretreatment unit - Development of the section Electric heating of technological equipment and pipelines - Adjustment of the Detail Design Documentation based on the results of the author supervision	General Client - Gazprom Invest, LLC Giprokislorod, JSC
37	Execution of works on the development of complex engineering surveys, design and detail design documentation for the 4380P object "Technical retrofit of instrument air compressor room at Rostashinskaya oil treatment unit" Rostashinskaya oil treatment unit" site - 2.8 hectares	– Pre-feed – Integrated engineering surveys (geodesy, geology) – Development of design documentation – Development of detail design documentation – Support in industrial safety expertise	General Client – Orenburgneft, PJSC
38	Execution of design work within the framework of the investment program "Program of measures to eliminate violations of industrial safety, labor protection for 2015-2020" on the following activities: - Equipping tanks R-183, R-185 with high-speed shut-off valves. Unit 35-1/300 (item 99); - Installation of a scheme for produced water drainage from the E-Ireflux drum into a closed system. Unit 35-8/3008 (item 100); - Installation of the floor heating layout in the open pump station 35-75 in unit 35-8/300B (item 101); - Installation of an emergency release system for the equipment of the unit sections (hydrotreating, stripping, reforming, stabilization, tank farm). Unit 35-8/300B (item 102); - Installation of block or shut-off valves with remote control on the suction and discharge lines of pumps. Unit 35-8/300B (item 103); - Installation of the breathing layout for drums E-107 and E-109 to the LP flare. Unit 35-8/300B (item 106); - Equipping compressors PK-1,2,3,4,5,6,7 with an automatic start-up check and interlock system in case the shaft-turning gear is engaged with the compressor shaft before the compressor starts. Unit 35-6/300 (item206); - Installation of shut-off valves with remote control on suction and discharge lines on compressors PK-1, PK-2, PK-3, PK-4, PK-5, PK-6, PK-7. Units 35-6/300 (item 206); - Replacement of the drain drum E-7 and its piping, with ESD provision. Unit 35-8/300B (item 211); - Installation of shut-off valves with remote control on the suction and discharge lines of compressors PK-1, PK-2, PK-3. Unit 24-7 (item 212); - Equipping compressor PK-4 of unit 35-6/300 with an automation system for gas discharge into the flare system. Unit 35-6/300 (item 235); - Equipping pumps TsN-1, TsN-2, TsN-3, TsN-4, N-1, N-2, N-3, N-4, N-7, N-8, N-9, PN-1, PN-2, N-10, N-12, N-13, N-14, N-15, N-16, N-26, N-27, PN-24, PN-25 with a system of interlocks that exclude start-up or stop the operation of the pump if there is no fluid transported in the housing. Unit 35-8/300B (item 209, 236).	- Development of detail design documentation Development of cost estimate documentation - Support of industrial safety expert review	"Lukoil-Permnefteorgsintez", LLC



No.	Activity Name	Scope of work	Name of the General Client/Client
39	Execution of design and survey work within the framework of the investment program "Program of measures to eliminate violations of industrial safety, labor protection for 2015-2020" on the following measures: - Equipping pumps and compressors handling combustible products with block or shut-off devices with remote control on the suction and discharge lines (item 138); - Installation of a header for discharge to the flare from equipment of unit 36-20 (items 133, 139); - Equipping pumps handling combustible products with block or shut-off devices with remote control on the suction and discharge lines, unit 36-20 (item 142); - Installation of flame arresters on breathing valves of vertical steel tanks No. 811, 812, 813, 814, 815, 816, 817 (item 144); - Installation of emergency ventilation in the pump rooms and a gas detection audible alarm in front of the entrance doors in the feed, cold, hot pump rooms at unit 37-10 (items 146, 148); - Installation of explosion-proof check valves on supply ventilation at unit 37-10 (item 147); - Installation of open evacuation statinways for equipment maintenance platforms located along the outer perimeter of equipment structures placed outside the diking and equipped with solid fences (screens) made of non-combustible materials with a fire resistance limit of at least 0.25 at unit 37-10 (item 149); - Equipping pumps that handle combustible products with block or shut-off devices with remote control on the suction and discharge lines of unit 37-10 (item 150); - Bringing the lighting in industrial premises of unit 37-30 to standards (item 156); - A gas detection audible alarm in front of the entrance doors in the rooms of the hot and cold pump units 37-50 (item 160); - Equipping pumps that handle combustible products with block or shut-off devices with remote control on the suction and discharge lines of unit 37-50 (item 163); - Increasing the diameter of the header for gas discharge to the flare from equipment of unit 37-50 (item 164); - Equipping pumps with an inte	- Engineering surveys implementation - Development of Detailed design documentation. - Development of cost estimate documentation - Support of industrial safety expert review	"Lukoil-Permnefteorgsintez", LLC
40	Technical assistance during the implementation of project No. 739.11.304-01054 "Technical retrofit of the primary ammonia condensation unit with the installation of an additional air cooler bay, item 604/6, at the synthesis unit of workshop No. 54 at the Gas Chemical Plant of Gazprom Neftekhim Salavat LLC	Technical assistance during the implementation of projects in order to ensure compliance of the construction and installation works performed with the solutions contained in the detail design documentation.	Investor-Developer - Gazprom Neftekhim Salavat, LLC SALAVATNEFTEKHIMREMSTROY, JSC
41	Calculation of the Air cooling unit 604/6 inlet manifold, calculation of modified support structures, amendments to the detail and estimate documentation based on the results of calculations within the framework of project No. 739.11.304-01054-TKh "ACU 604/6". Calculation of the Air cooling unit 604/6 outlet manifold, calculation of modified support structures, amendments to the detail and estimate documentation based on the results of calculations within the framework of project No. 739.11.304-01054-TKh "ACU 604/6".	Carrying out calculations of the input/output header	Investor-Developer - Gazprom Neftekhim Salavat, LLC SALAVATNEFTEKHIMREMSTROY, JSC
42	Development of Detailed design documentation within the framework of the project "Retrofitting of the primary ammonia condensation unit with the installation of an additional section of the ACU pos. 604/6 at the synthesis unit"	 Development of detail design documentation Development of cost estimate documentation Passing an industrial safety expert review 	Investor-Developer - Gazprom Neftekhim Salavat, LLC SALAVATNEFTEKHIMREMSTROY, JSC



No.	Activity Name	Scope of work	Name of the General Client/Client
43	Inspection of existing civil structures and supporting parts of the pipe rack within the framework of the project "Retrofitting of the primary ammonia condensation unit with the installation of an additional air cooler bay, item 604/6 at the Synthesis unit"		Investor-Developer – Gazprom Neftekhim Salavat, LLC SALAVATNEFTEKHIMREMSTROY, JSC
44	Execution of design and survey works, provision of author supervision services within the framework of the Investment project "Reconstruction of the PS "Novoselki" (investment project code D394P0102Q). Including the development of design documentation and correction of detail documentation for the object "Access road from the public road" StaroSimferopolskoe shosse - Slashchevo "to the PTK NSN "Novoselki".	- Conducting a pre-project survey - Performing engineering surveys - Development of project design documentation - Development of Detailed design documentation Passing of non-state expert review of project design documentation - Passing of the expert review of the estimated documentation - Passing of metrological expert review of detailed design documentation - Obtaining a sanitary and epidemiological conclusion of the Sanitary Protection Zone - Provision of author supervision services	General Client - LUKOIL-Trans, LLC MobilBeton, LLC
45	Development of Project design and/or Detailed design documentation and engineering surveys at JSC Gazpromneft-ONPZ facility: Projects of the projects of replacement of worn-out equipment program: 1. Changing the high-pressure nitrogen supply scheme to the C-300 section of the KT-1/1 unit. 2. Replacement of sections KhV-304/1,2,3,4,5 of KT-1/1 unit. 3. UI&O facilities. Recycling water supply unit BOV-7, 1st system. Replacement (installation) of automatic self-cleaning units for filtration of cooling and makeup water of cooling towers; 4. Replacement of sections AV3-1, AV3-2 of unit 43-103. 5. GPP-1, GPP-2, GPP-8. Replacement of relay protection of 35kV lines 5C, 48C, 6C, 50C, 12C, 42C. Installation of high-speed differential line protection. 6. Reinforcement of the cable rack along the road No. 28 from AVT-10 to the intersection of roads 10 and 28. Location of the facility: Russian Federation, Omsk, industrial site of Gazpromneft-ONPZ JSC	- Execution of measurement work	Gazpromneft-ONPZ, JSC
46	Development of Project design and/or Detailed design documentation and engineering surveys at JSC Gazpromneft-ONPZ for the Facility: 1. Replacement of fans P-3, P-4. Replacement of the spring-loaded pressure safety valves on the discharge lines of the 1st stage of gas reciprocating compressors GK 9-16 with a larger diameter at the compressor station, title 12, of the gas fractionation unit. 3. Replacement of drums at the additive supply unit. Location of the facility: Russian Federation, Omsk, industrial site of Gazpromneft-ONPZ JSC	- Collection of input data - Conducting geological, geodetic surveys (para. 3) - Conducting measurement works (para. 3) - Development of Detailed design documentation Development of procurement documentation (data sheets and ITP) - Development of cost estimate documentation - Support of industrial safety expert review - Revision of the detailed design and estimate documentation based on the	Gazpromneft-ONPZ, JSC
47	Provision of services for the implementation of technical assistance during the implementation of the project "Automated information-measuring system for technical accounting of electricity" of "Gazprom Neftekhim Salavat" LLC	- Pre-project survey - Execution of measurement work - Update of detail design documentation - Updating of the estimate documentation	Investor-Developer - Gazprom Neftekhim Salavat, LLC SALAVATNEFTEKHIMREMSTROY, JSC
48	Execution of design work on the survey and development of detail documentation for the facilities of the gas chemical plant during the implementation of the project "Automated information-measuring system for technical accounting of electricity"	- Inspection of existing electricity metering points at the Gas Chemical Plant facilities. - Development of the detailed design documentation for the Gas Chemical Plant facilities	Investor-Developer - Gazprom Neftekhim Salavat, LLC SALAVATNEFTEKHIMREMSTROY, JSC
49	Implementation of work on the development of the section "Information Security" within the framework of the project "Automated information and measurement system for technical metering of electricity"	 Development of detail design documentation Development of cost estimate documentation Development of operational documentation 	Investor-Developer - Gazprom Neftekhim Salavat, LLC SALAVATNEFTEKHIMREMSTROY, JSC
50	Amendments to the technical detailed design project for the facility "Automated information and measurement system for technical metering of electricity"		Investor-Developer – Gazprom Neftekhim Salavat, LLC SALAVATNEFTEKHIMREMSTROY, JSC



No.	Activity Name	Scope of work	Name of the General Client/Client
51	Inspection of additional electricity metering points at the Gas Chemical Plant facilities. Development of Detailed design documentation on additional points (27 pcs) for the metering of GCP facilities "Automated information and metering system for technical metering of electricity"		Investor-Developer - Gazprom Neftekhim Salavat, LLC SALAVATNEFTEKHIMREMSTROY, JSC
52	Execution of design work on the unification of projects for the metering points of refineries and gas chemical plants, including additional 27 metering points for the project "Automated information and metering system for technical metering of electricity"		ZSMIK LLC
53	Conducting a process and price audit of the Detailed design documentation for the facility: "Construction of facilities at the Nizhny Tagil oil tank farm of JSC Gazpromneft-Terminal"	- Audit of detail documentation - Audit of cost estimate documentation	"Gazpromneft-ONPZ", JSC
54	Development of design documentation for structural steel structures for metal structures for the project "Expansion of the pipeline system" Eastern Siberia - Pacific Ocean "at the section of the "Taishet" oil pumping station - Skovorodino" oil pump station up to 80 million tons per year. 3rd stage of construction. PS No. 2 and external power supply"	Development of KMD design documentation	Velesstroy, LLC
55	Development of Detailed design documentation for the buildings of the concrete plant and the production and storage area for the facility "The Offshore Superfacility Construction Yard (OSCY). Complex for the manufacture of gravity base and the integration of top structure modules (GBS site)	 Development of Detailed Design Documentation Support when passing the expert review of Project Design Documentation 	General Client – NOVATEK-MURMANSK, LLC Velesstroy, LLC
56	Development of Project Design and Detailed Design Documentation for foundations for buildings and structures according to optimized design solutions for the facility facility "The Offshore Superfacility Construction Yard (OSCY). Complex for the manufacture of gravity base and the integration of top structure modules (GBS site)	- Development of Project Design Documentation - Development of Detailed Design Documentation - Support when passing the Main State Expert Review Board (GGE) of Project Design Documentation	General Client – NOVATEK-MURMANSK, LLC Velesstroy, LLC
57	Adjustment of the Project Design Documentation subsection "Process solutions" on the production technology of the concrete plant site, taking into account the optimization of design solutions for the facility "The Offshore Superfacility Construction Yard (OSCY). Complex for the manufacture of gravity base and the integration of top structure modules (GBS site)	- Development of process assignments, process requirements - Review of Project Design Documentation - Support in the state ecological expertise - Support when passing the Main State Expert Review Board (GGE) of Project Design Documentation	General Client – NOVATEK-MURMANSK, LLC Velesstroy, LLC
58	Amendments and additions to the Project Design Documentation for the facility "Offshore Superfacility Construction Yard (OSCY). Complex for the manufacture of gravity base and the integration of top structure modules (GBS site)	- Development of sections of Project Design Documentation - Support when passing the expert review of Project Design Documentation	General Client – NOVATEK-MURMANSK, LLC Velesstroy, LLC
59	Development of bills of quantities related to the Detailed design documentation for the facility "Offshore Superfacility Construction Yard (OSCY)". Complex for the manufacture of gravity base and the integration of top structure modules (GBS site)	Development of bills of quantities of detailed design documentation	General Client – NOVATEK-MURMANSK, LLC Velesstroy, LLC
60	Development of the detail design documentation for the facility "Offshore Superfacility Construction Yard (OSCY)". Complex for the manufacture of gravity base structures and the integration of topside modules. Complex for the manufacture of topside modules" (Site of Topsides No. 1)	- Development of Detailed Design Documentation - Support when passing the expert review of Project Design Documentation	General Client – NOVATEK-MURMANSK, LLC Velesstroy, LLC
61	Development of the Project Design and Detailed Design Documentation for the facility "Offshore Superfacility Construction Yard (OSCY)". Complex for the manufacture of pipeline sections (Site of Topsides No. 2)	- Inspection of buildings and structures located at the site of OJSC Yamal LNG	General Client – NOVATEK-MURMANSK, LLC Velesstroy, LLC
62	Revision of the Project Design and Detailed Design Documentation for the facility "The Offshore Superfacility Construction Yard (OSCY). Complex for the manufacture of pipeline sections" (Site of Topsides No. 2)	- Revision of Project Design Documentation - Revision of Detailed Design Documentation	General Client – NOVATEK-MURMANSK, LLC Velesstroy, LLC
63	Revision of Project Design and Detailed Design Documentation for the facility "The Offshore Superfacility Construction Yard (OSCY). Complex for the manufacture of pipelines sections" region (Area of upper structures No. 2)	- Revision of design documentation - Revision of detail design documentation	General Client – NOVATEK-MURMANSK, LLC Velesstroy, LLC
64	Author supervision for the facility "The Offshore Superfacility Construction Yard (OSCY) (Complexes of GBS, Topsides No. 1, Topsides No. 2)	Provision of author supervision services	General Client – NOVATEK-MURMANSK, LLC Velesstroy, LLC
65	Revision of Project Design and Detailed Design Documentation for the facility construction "The Offshore Superfacility Construction Yard (OSCY)". Complex for the manufacture of gravity base and the integration of top structure modules (GBS site)	- Revision of Project Design Documentation - Revision of Detailed Design Documentation - Optimization of design solutions in order to reduce Contractor costs	General Client – NOVATEK-MURMANSK, LLC Velesstroy, LLC



No.	Activity Name	Scope of work	Name of the General Client/Client
66	Development of Detailed design documentation for the radiographic control unit (workshop No. 005 as per Plot Plan) for the facility "The Offshore Superfacility Construction Yard (OSCY). Complex for the manufacture of pipelines sections"	Development of detail design documentation	General Client – NOVATEK-MURMANSK, LLC JSC Testron
67	Development of detail and design documentation for the linear part of trunk pipelines	Framework agreement for the development of project design and detailed design documentation for the linear part of trunk pipelines	NIPIGAZ, JSC
68	Development of detail and design documentation for the linear part of field pipelines	Framework agreement for the development of project design and detailed design documentation for the linear part of field pipelines	NIPIGAZ, JSC
69	Development of a detail project "Air separation unit for the project "UzGTL Uzbekistan". Steam supply system Facility location: Republic of Uzbekistan, Kashkadarya region, Guzar district	- Development of a detail project - Creation of 3D model - Passing expertises	General Client – Kriogenmash, PJSC Giprokislorod JSC
70	Development of Project design documentation for the Amur gas chemical complex (GCC). UI&O Facilities"	- Development of design documentation - Support in state ecological expertise - Support in State Expert Review	General Client – Amur GCC, LLC NIPIGAZ, JSC
71	Development of project design and detail design documentation for oil and gas industry facilities	Framework agreement	"NIPIGAZ", JSC
72	Services related to Construction Author Supervision for CDU/VDU Complex on the territory of the existing Omsk Refinery ("Gazpromneft-ONPZ" JSC)	Provision of author supervision services	"RusTechnip", LLC
73	Review of detailed technical documentation for the CDU-VDU complex at the existing Omsk Refinery (JSC Gazpromneft-ONPZ)	Review of detailed technical documentation in order to assess its compliance with the requirements of NTD of the RF	"RusTechnip", LLC
74	Development of detail design documentation for the object "Booster compressor station at GTPG-11V of Yen-Yakhinsky OGCF"	Development of detail design documentation	General Client - Gazprom Invest, LLC IPIGAZ, LLC
75	Amendments to the Project design documentation and engineering surveys on the JSC Gazpromneft-ONPZ Facility: "Reconstruction of the catalytic reforming unit L-35/11-600"	- Collection and analysis of initial data - Carrying out engineering surveys - Correction of procurement documentation - Carrying out surveys and measuring works of buildings and structures - Scientific and technical support - Correction of project documentation - Expertise support	"Gazpromneft-ONPZ", JSC
76	Execution of a complex of works (survey and design works, passing expertises, author supervision) within the framework of the implementation of the investment project "Construction of a light oil product loading station" LLC LUKOIL-Permnefteorgsintez	- Conducting complex engineering surveys - Analysis of existing design and detail documentation - Development of detail documentation - Development of a project for the extension of in-plant railways - Passing expertise - Author supervision services - Preparation of the facility for operation (development of process regulations, a plan of measures to eliminate the consequences of accidents, operational instructions)	General Client – LUKOIL-Permnefteorgsintez, LLC MobilBeton, LLC
77	Execution of works on the capital construction facility "Unit of hydrocarbon gas processing into aromatic hydrocarbons with the off-site facilities"	Development of project design documentation	General Client – FG DoGa KTB Techno-Progress LLC
78	Gazpromneft-Moscow Refinery JSC - Deep Oil Refining Complex (KGPN) Design of a Sulfur Production Plant (UPS-2) (including acid gas flare facilities) within the framework of the project "Complex of Deep Oil Refining (KGPN),	- Development/Russification of packages of detailed design documentation for engineering - Analysis of discrepancies between the FEED documentation and the approved project design documentation - Author supervision	Saipem S.p.A.
79	Development of technical documentation for a unit for the purification of liquefied hydrocarbon gases from methanol at the gas treatment and processing complex of the Kharasaveyskoye gas condensate field and the Bovanenkovskoye oil and gas condensate field	Development of technical documentation	Final Client - Gazpromneft-Zapolyarye, LLC Volgogradneftemash, JSC
80	Development of Detailed design documentation for the project "UI&O Facilities included in C3 package. Gas Chemical Complex within Ethane-rich Gas Processing Complex"	Development of Detailed Design Documentation: - Collection and analysis of input data, preparation of a report - Layouts of buildings and structures - Technical and architectural solutions - Preparation of a survey assignment for buildings and structures - Development of Bill of Materials for the main process equipment - Development of data sheets - 3D model	General Client – Baltic Chemical Complex, LLC China National Chemical Engineering & Constructio Corporation Seven, Ltd (CC7)



No.	Activity Name	Scope of work	Name of the General Client/Client
81	Development of documentation for modular units of the Kharasavey-Bovanenkovo Project of the Bovanenkovskoye oil and gas condensate field and the Kharasaveyskoye gas condensate field	Development of technical documentation	Final Client - Gazpromneft-Zapolyarye, LLC Volgogradneftemash, JSC
82	Development of Detailed Design Documentation for the facility "Gas Chemical Complex within Ethane-rich Gas Processing Complex. Connection to the wastewater header of the "Slavyanskaya" CS.	Issue of Detailed Design Documentation - Review of Vendor's Supply Documentation for compliance with Detailed Design Documentation	General Client – Baltic Chemical Complex, LLC China National Chemical Engineering & Construction Corporation Seven, Ltd (CC7)
83	Development of documentation for the installations of the project "Development of the site 3A of the Achimov deposits of the Urengoy field" Phase 1. Preliminary gas processing terminal in modular implementation (PGPTMI). Phase 2. Condensate stabilization unit in modular implementation (CSUMI)	Performing calculations of heat and material balance - Development of process diagrams - Development of an explanatory note - Development of a flow diagram of power supply	Final Client - Gazpromneft-Zapolyarye, LLC Volgogradneftemash, JSC
84	Development of Design Concept and Project Design Documentation (within the scope of Construction Management Plan) and development of Detailed Design Documentation for a Temporary Construction Camp for Phase No. 2, No. 3 within the framework of construction of the Gas Chemical Complex within Ethane-rich Gas Processing Complex	Development of Design Concept Development of Project Design Documentation (within the scope of Construction Management Plan) Development of Detailed Design Documentation, including 3D models	General Client – Baltic Chemical Complex, LLC China National Chemical Engineering & Construction Corporation Seven, Ltd (CC7)
85	Design of the Gas pipeline branch with input unit and Gas Distribution Plant for provision of construction of the Gas Chemical Complex within Ethane-rich Gas Processing Complex	Development of Project Design Documentation - Development of Detailed Design Documentation	General Client – Baltic Chemical Complex, LLC China National Chemical Engineering & Construction Corporation Seven, Ltd (CC7)
86	Provision of Authorship supervision services for construction and filed engineering of the facility Gas Chemical Complex within Ethane-rich Gas Processing Complex	Provision of author supervision services	General Client – Baltic Chemical Complex, LLC China National Chemical Engineering & Construction Corporation Seven, Ltd (CC7)
87	Performance of design works for the LNG and SGC production unit at the GBS (Gravity Base Structure).	Development of detailed design documentation - Development of 3D model	Renaissance Heavy Industries LLC
88	Development of Detailed design documentation for the construction project "Gas Chemical Complex within Ethane-rich Gas Processing Complex near the Ust-Luga settlement. Stages 2.2, 2.3, 2.5, 2.6, 2.7. Ul&O Facilities. Non-production facilities". Facilities with titles 3004, 3610, 3611.	Development of Detailed design documentation. Design facilities: communication tower, communication centre building, inter-shop piperacks of UI&O facilities	Representative Office of LIMAK CONSTRUCTION LLC
89	Development of project design documentation for the construction project "Gas Chemical Complex within Ethane-rich Gas Processing Complex near the Ust-Luga settlement. Stages 2.2, 2.3, 2.5, 2.6, 2.7. Ul&O Facilities. Non-production facilities"	 Development of sections of project design documentation Development of cost estimate documentation Development of 3D model 	GL Engineering, LLC
		Designed facilities: inter-shop piperacks of non-production facilities; chemicals warehouse; storage warehouse for industrial and emergency stock of inventories; paint and varnish materials and oils warehouse; open storage area; solid municipal waste storage area; refueling station; parking for transport, buses; transport department with parking of special equipment; fire station with emergency rescue units; diesel power plant; electrical plant building.	
90	Development of Detailed Design Documentation for the facility for polymerization of ethylene into polyethylene and linear alpha-olefin production in Gas Chemical Complex within Ethane-rich Gas Processing Complex	- Technical consultation - Support for the approval of PDD and assistance in the approval of PDD by state authorities - Development of detailed design documentation	Client - Baltic Chemical Complex LLC Contractor - China National Chemical Engineering & Construction Corporation Seven, Ltd Subcontractor - Daelim Rus, LLC
91	Rendering of Author Supervision and technical support services for the CDU/VDU Complex of Gazpromneft-ONPZ JSC	- Author Supervision services - Field engineering services Technical support services for the project - Services for the development of the final DDD (As-built) - Services for the 3D model development	Gazpromnet-ONPZ, JSC





No.	Activity Name	Scope of work	Name of the General Client/Client
92	Development of Detailed design documentation for the facility "Gas chemical complex within Ethane-rich Gas Processing Complex. Flare facilities of the ethylene tank farm (tit. 12460), flare facility (tit. 12470)"	- Issue and review of a 3D model in the 30%, 60%, 90%, 100% readiness phases - Execution of the dispersion calculation; - Issue of detailed design documentation on general construction works (underground part), KJO, KJI marka codes; - Issue of detailed design documentation on general construction works (aboveground part), KJ2, KJ3, KJ4 marka codes; - Issue of detail design documentation for steel structures of KM3, KM4 marka codes (excluding the scope of work on the flare support tower).	Owner - Baltic Chemical Complex LLC General Client - China National Chemical Engineering & Construction Corporation Seven, Ltd Client - Norrexim Rus JSC
93	Implementation of work on the development of Detailed Design Documentation, procurement and supply of the main process equipment for the Facility: "Gas Chemical Complex within Ethane-rich Gas Processing Complex. Permanent area for equipment hydromechanical cleaning (F.I. 13250) as part of the UI&O facilities of the Gas Chemical Complex within Ethane-rich Gas Processing Complex.	Development of Detailed Design Documentation, including 3D model Supply of equipment and materials Construction and installation works Commissioning works 'Project management and equipment supply services, engineering services, Equipment, Spare parts (pre-commissioning), spare parts for 2 years, overhaul	General Client – Baltic Chemical Complex, LLC China National Chemical Engineering & Construction Corporation Seven, Ltd (CC7)
94	Implementation of work on the development of Detailed Design Documentation, supply of equipment for the Facility: Gas Chemical Complex within Ethane-rich Gas Processing Complex. UI&O Facilities within the battery limits of Quarters 11, 21, 31 and 33.	Development of Detailed Design Documentation, including 3D models	General Client – Baltic Chemical Complex, LLC China National Chemical Engineering & Construction Corporation Seven, Ltd (CC7)
95	Amur Gas Chemical Complex (Amur GCC)	 Development of Detailed Design Documentation and other documentation in the scope of RDI in accordance with Exhibits 1 and 2 to Attachment 1 Verification of the detail deaign documentation developed by the Contractor 3) Technical consultation; DD approval support & assistance for government authorities approval in the scope of: drawing up a list of deviations of PD and DDD, providing the necessary input data for updating PD sections 	DAELIM 2 AC "DL E&C Co., LTD" – PEGAZ (Client – Amur GCC)



Reliable and steady partnership relations with clients of R&DI "PEGAZ" are based on the ability to take into account their interests, as well as responsibility, a professional approach to the implementation of tasks, mutual trust and flexible pricing policy. This allows us to maintain a high reputation in the market of industrial safety services.

Our partners include major enterprises such as:

- ▲ "NK "Rosneft" PJSC
- ▲ "Gazprom Neft" PJSC
- ▲ "Gazprom" PJSC
- ▲ "SIBUR Holding" PJSC
- "Lukoil" PJSC
- ▲ "Bashneft" PJSC
- ▲ "TNK-VP Holding" OJSC

- "Nizhnekamsk ONPZ" OJSC
- "Saratov ONPZ" JSC
- "Ufaneftekhim" JSC
- ▲ "Novo Ufimskiy NPZ" JSC
- ▲ "NOVI SAD" Oil Refinery (Yugoslavia)
- ▲ "Ufaorgsintez" JSC















GEOGRAPHY OF PROJECTS





CONCLUSION



Realization of advantages of an integrated design approach by R&DI "PEGAZ":

- A Provision of high quality engineering solutions through participation of technical specialists at all stages of projects implementation, exclusion of incomplete or invalid data, high extent coordination between the Client and the Developer
- Optimization of process decisions from the viewpoint of efficiency, due to process audit of input data
- ▲ Level increase of reliability and functionality of objects due to applied sophisticated and proven technologies, equipment and Software
- Extended warranty and high-quality post-warranty services

Great experience of **R&DI** "**PEGAZ**" specialists in developing, design and implementation of oil facilities, transportation, processing and storage of oil, gas and chemical industries, as well as implementation of an integrated approach allows to carry out projects of various kinds and of any complexity "on a turnkey basis", starting with conceptual design, solutions design agreed with the Client and ending with commissioning of the facility, suggesting high efficiency, from a technical and economic side and qualitatively developed solution that reduces time of development and deployment of facilities and reduce investment and operating expenses.

Active accommodation to the dynamic conditions and getting over the arising difficulties, allows R&D Institute "PEGAZ" to move to a new level of quality and liability!



R&DI PEGAZ

Russian Federation, 450077, Republic of Bashkortostan, Ufa, 6 Verhnetorgovaya ploshchad,
Nesterov Business Center, 4h floor, offices 1–16.

Tel.: +7 (347) 286-28-17, e-mail: <u>info@pegaz.ru</u>, <u>www.pegaz.ru</u>