



TECHNOTECS

Russian **Manufacturing**
Engineering Company

> **25** years

of excellence
for your success

Company Today

TECHNOTECS LLC offers comprehensive solutions in the field of manufacture of equipment for surface facilities of oil and gas fields, heating and heat exchange equipment, water treatment and wastewater treatment systems for large industrial enterprises, PSA units as well as equipment and engineering for complex automated systems



Modern level of business process organization enables the Company to implement projects of any scale and complexity in the oil and gas, chemical, and metallurgical industry, agriculture, and other industrial sectors in a timely and high-quality manner

**4**

engineering centres

>600

employees

>1000

completed projects

2

production sites

23 500 M²

production area



Integrated Approach to Project Implementation

1. Engineering and Design

1. Development of comprehensive process solutions
2. Design of process units of any complexity and configuration
3. In-house libraries, advanced calculation software, process concepts for automation and power supply, regulations and technical instructions for development of detail design documentation
4. Adaptation of solutions to meet safety and legislative requirements
5. 3D design and generation of comprehensive digital information models (BIM-modelling, digital passport, VR)
6. Development of design and detail documentation (Technical Requirements, Terms of Reference, Project Documentation, Detail Documentation, Design Documentation)
7. In-house expertise, R&D, and continuous training
8. Advanced design techniques and high-level automation of internal processes

2. Manufacture

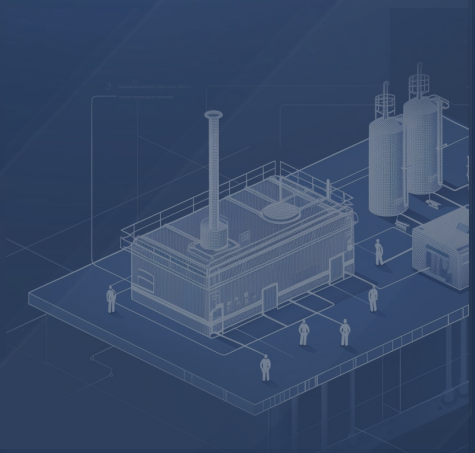
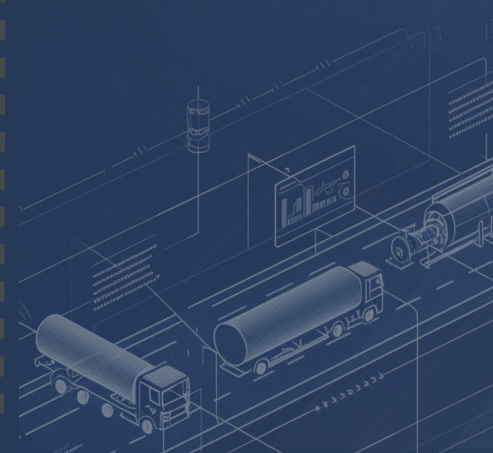
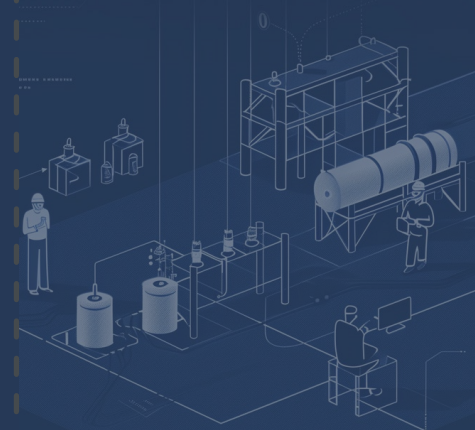
1. Development of process documentation
2. Manufacture of process equipment
3. Factory testing of systems at our own production site
4. Inspection and audit at all production stages
5. Own accredited and certified quality control laboratory

3. Procurement and Supply

1. Technical audits and prequalification of vendors
2. Step-by-step inspection check-up of equipment
3. Arrangement of equipment acceptance
4. Digital equipment certification
5. Digital specifications for equipment and materials
6. Market price database (analytical libraries)
7. Organization and management of warehouse facilities
8. Arrangement and provision of incoming inspection of equipment at the site

4. Installation Supervision and Commissioning

1. Installation supervision
 2. Author's supervision
 3. Full scope of commissioning for technical and auxiliary process equipment
 4. Staff personnel
-
1. Training of operating personnel
 2. Briefing and practical training of operating personnel on safe conduct, start-up, and scheduled shutdown of the process, accident prevention and emergency response
 3. Technical support and maintenance of supplied equipment





Full-Cycle Production

>150 equipment units

20 tonnes
maximum lifting capacity of overhead
cranes

8.5 meters
clear height of main workshops to
crane hook

Capability to manufacture tanks
and vessels weighing up to 50 tonnes
with the diameter up to 3 600 mm
and operating pressure up to 10 MPa



3D tour
of the production site
in Ufa



3D tour
of the production site
in Oktyabrsky



Production Areas

Production areas ensure a full-cycle manufacturing process.

All production processes are performed under supervision of the Quality Control Department and the Client's inspection check-up.

Blank Preparation Area



Cutting of workpieces using plasma cutting machines, squaring shears, and band saws, bending of workpieces using sheet-bending and rolling machines, machining using lathes, milling and drilling machines

Assembly and Welding Area



Assembly and welding of assemblies, bodies, and enclosures, manual electric arc welding with special electrodes, manual argon-arc and mechanized gas-shielded welding (argon-oxygen mixture and pure argon), automatic welding with special welding fluxes

Corrosion Protection Application Area



Cleaning of products in a shot-blasting walk-in through-type chamber and painting in a painting and drying chamber

Production Areas

Electrical Installation and Cabinet Assembly Area



Assembly of electrical control cabinets, production of wiring harnesses, testing and supervision of electrical installation

Comprehensive Testing Area



Hydraulic and pneumatic strength and tightness testing of units, vessels, piping, shut-off and control valves

Packing and Labelling Area



The products are shipped both as prefabricated, and as package units with subsequent assembly at the client's site, including installation supervision and commissioning

Products

Oil Treatment
Units



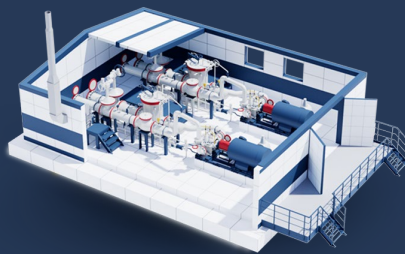
Gas Treatment
Units



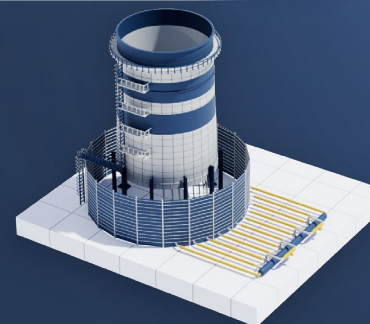
PSA
Units



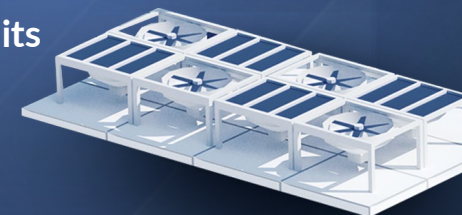
Pump Stations



Flare Systems



Air Cooling Units



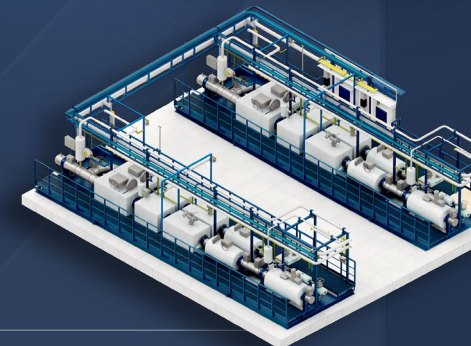
Furnaces and Heating
Equipment



Metering
Systems



Valve
Assemblies



Solutions

We implement comprehensive projects for construction, revamping, and modernization of water treatment and wastewater treatment systems for industrial enterprises, with due regard to environmental priorities of our clients

- comprehensive **water treatment** solutions
- comprehensive **wastewater treatment solutions**
- comprehensive **sewage sludge treatment solutions**

Water Treatment Units



Wastewater Treatment Units

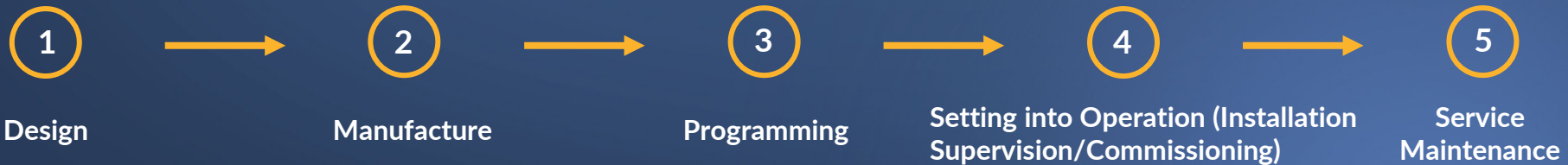


Sewage Sludge Drying Units

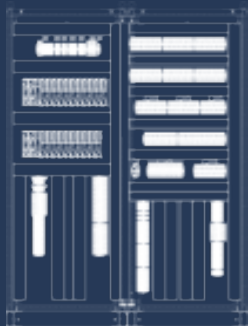


Dry Residue Incineration Units

Comprehensive Automation



- The cabinets are manufactured in accordance with TU 27.12.31-023-50814179-2022, undergo comprehensive testing both at the design, and assembly stages, including author's and inspection supervision, and guarantee reliability in performing assigned tasks throughout their entire service life
- State-of-the-art technologies are used for the design and assembly. All vendors undergo rigorous selection process, from those that supply enclosures to those that supply terminals. The functionality can be scaled to meet future requirements
- The automation systems and equipment comply with Russian and international standards as well as feature high reliability and efficiency



APCS cabinets
(LCS, DCS, ESD)



Power supply cabinets
for electrical energy receipt,
metering and distribution
(low-voltage distribution
switchboards, incoming
switchgear, fire protection
power supply panels)



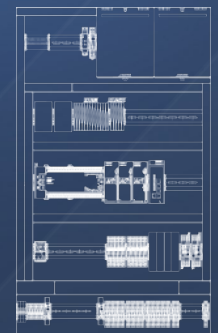
Cabinets for security alarm
and access control systems
(security equipment, access
control systems)



Cabinets for metering systems
as a part of hydrocarbon, water,
and steam metering units
(information computation
systems, information processing
systems)



Cabinets for fire alarm and
fire extinguishing systems
(fire alarm cabinets, fire
extinguishing cabinets)



Custom-made
specialized cabinets

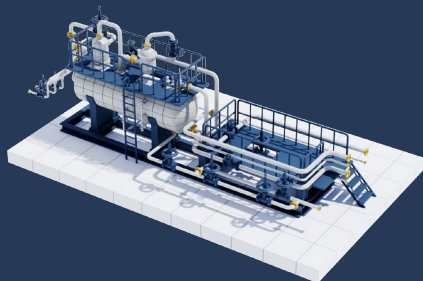
Oil Treatment Units

Stationary

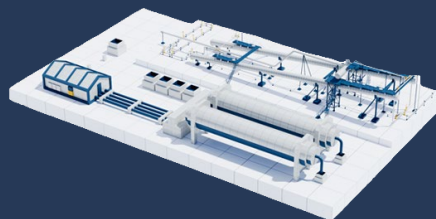
- The units are equipped with automated equipment and process control systems that allow unmanned operation of the stations
- The station can be additionally fitted with a booster pump unit in case of insufficient boost pressure for main pumping units
- The station can be fully automated using power-operated shut-off valves
- High ergonomics of the process units
- The station can be supplied as a part of the package together with vessels, control rooms, fire-fighting and other auxiliary units



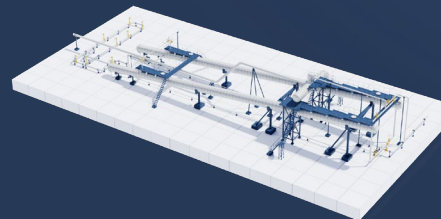
- Unauthorized access to equipment is prevented
- Reduced construction and installation costs, convenient equipment maintenance and logistics
- Improved washing of feed to remove salts, efficient removal of mechanical impurities, monitoring of process operations



**Mobile Oil
Treatment Units**



Free Water Knock Out Unit

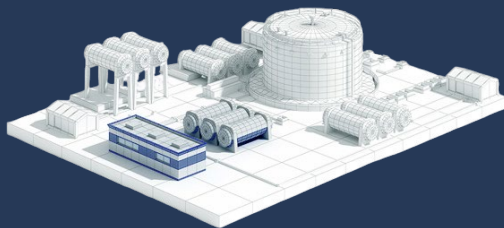


**Tubular Downstream
Separator**

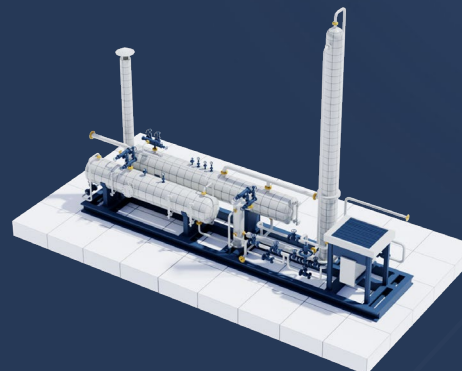
Gas Treatment Units

Stationary

- The modular design and maximum operational readiness allow for equipment installation on a tight schedule
- The units can be custom-designed to meet specific requirements
- All calculations are performed using specialized licensed software packages
- Simplicity and flexibility of process control
- In-house production of flare systems and heating equipment as well as air cooling units
- Custom design and manufacture of gas treatment units for any required capacity
- Designed for operation in climatic zones with air temperatures of -60°C to $+45^{\circ}\text{C}$



**Fuel and Instrument
Gas Treatment Units**



**Gas Condensate
Stabilization Units**



**Mobile Gas
Treatment Units**

Furnace Equipment

Process Furnaces

- ◆ Development and supply of new equipment as well as deep reconstruction of existing process furnaces
- ◆ Compliance with process and environmental production parameters
- ◆ Operation under conditions of limited time and working space
- ◆ Development of special solutions for equipment transportation and lifting

Furnace Types

- ◆ Cylindrical, box-type
- ◆ Furnaces with a vertical, horizontal, spiral radiant coil
- ◆ With the burners located on side, end walls, in one or several tiers
- ◆ Single-chamber, multi-chamber
- ◆ With bottom, roof, wall burners
- ◆ With gas and liquid fuel burners as well as other types



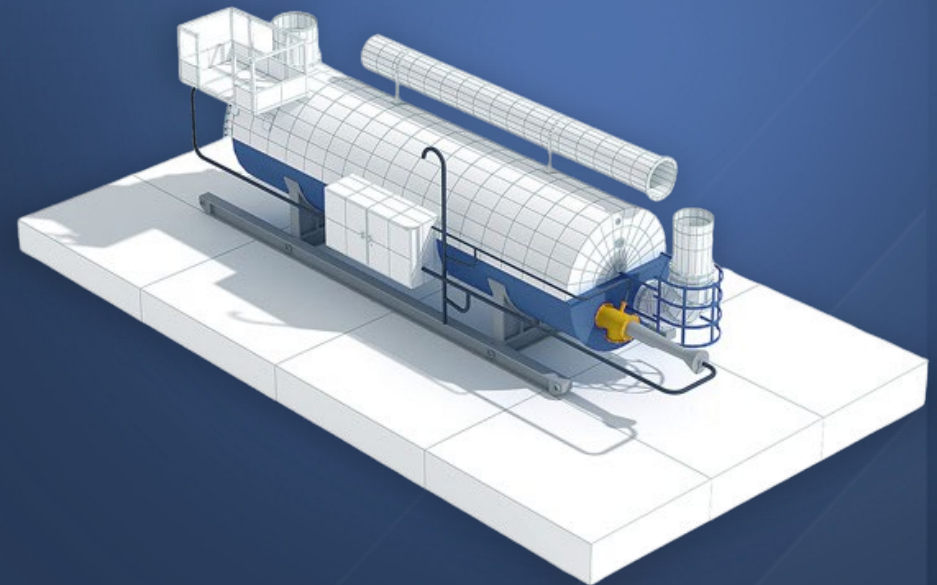
Heating Equipment

Heaters

- ♦ Stairs and service platforms, manholes, hatches, fittings for instrumentation and controls are provided for the maintenance
- ♦ Can be equipped with coils to heat gaseous and liquid fuel
- ♦ The coils can be supplied separately, to ensure reconstruction of the heaters

Heater Types

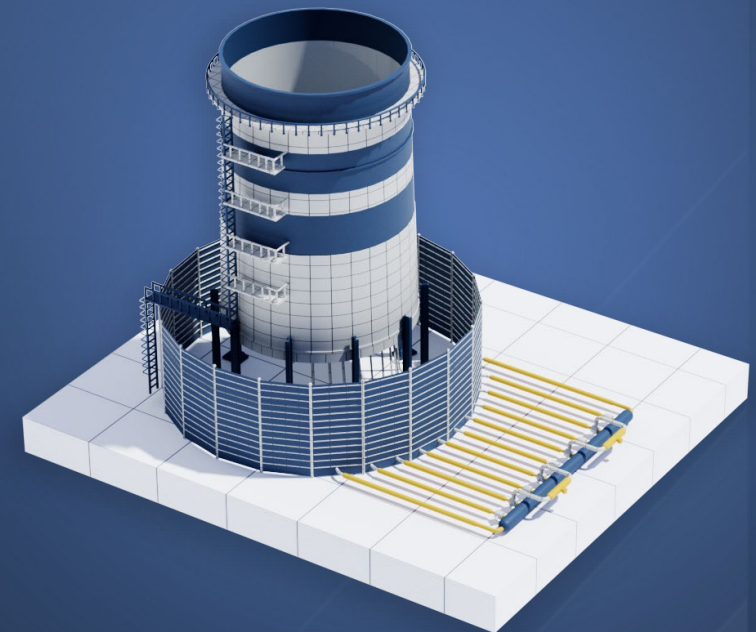
- ♦ **Line Heaters**
to heat oil and oil emulsions during transportation through pipelines at oil fields and units
- ♦ **Intermediate Heat-Carrier Heaters**
to heat oil emulsions in collection and transport systems for oil, natural or associated gas, field waste water at gas distribution units of the gas-lift oil production system
- ♦ **Combined Oil Heaters**
to heat oil of various viscosities and oil emulsions in oil treatment systems at fields as well as during the transportation
- ♦ **Modular Heaters (Tubular)**
to heat oil, gas, formation water, and their mixtures in the well production collection, transport, and treatment system



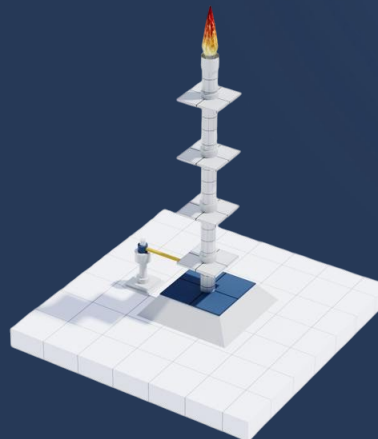
Flare Systems

Closed Flare Systems

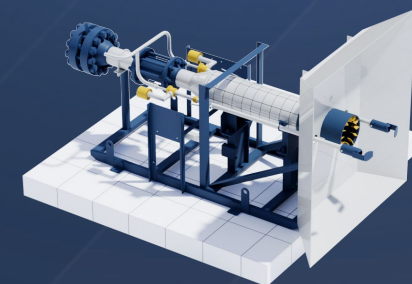
- Smoke-free combustion of discharges in a wide range of the unit capacities
- Low noise level, minimal atmospheric emissions, no thermal radiation or visible flame
- Suitable for installation adjacent to other production facilities
- Suitable for servicing without shutting the unit down or taking it out for repair
- Reduced operating costs, since no steam or additional air supply is required for smoke-free operation of the flare
- Highest level of safety owing to combination of advanced design methods and state-of-the-art technologies



Active Agent Heating Unit



Open Flare Systems

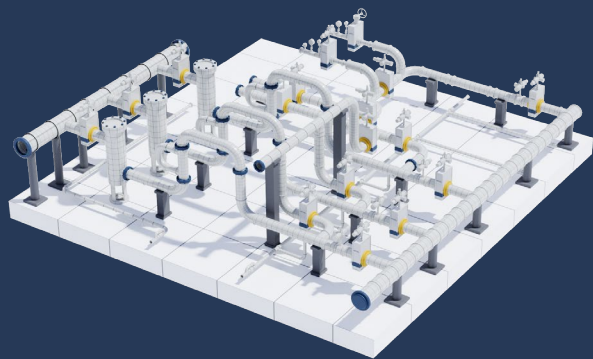
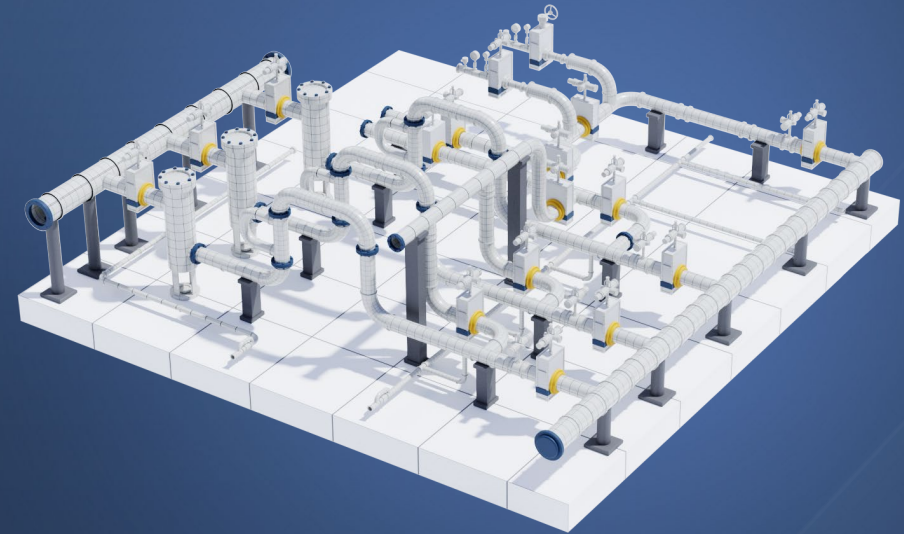


Horizontal Flare Systems

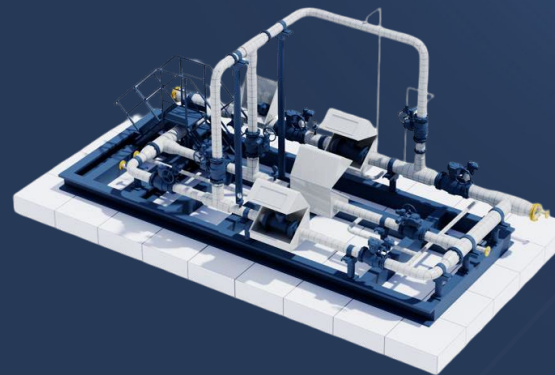
Metering Systems

- The module is supplied as a prefabricated unit
- The well-thought-out layout solution allows barrier-free access of the personnel to all units and parts of the modular devices in accordance with GOST 12.2.049-80 as well as removal of repair equipment
- The measuring instruments are certified in accordance with approved standards
- All equipment used in explosion-hazard areas has a certificate issued by an authorized organization of Gosenergonadzor of Russia

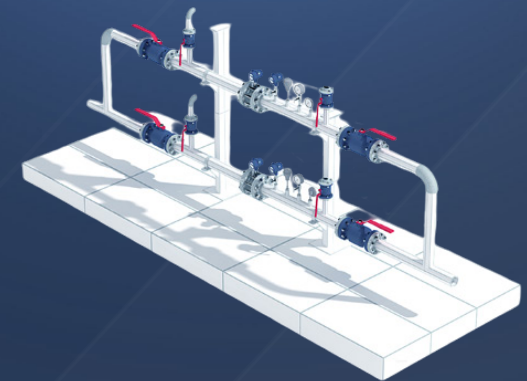
**NGL
Metering System**



**Oil and Petroleum Products Quality
and Quantity Metering System**



Water Metering System

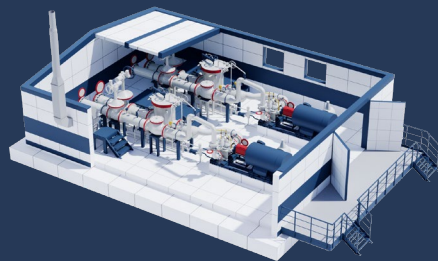
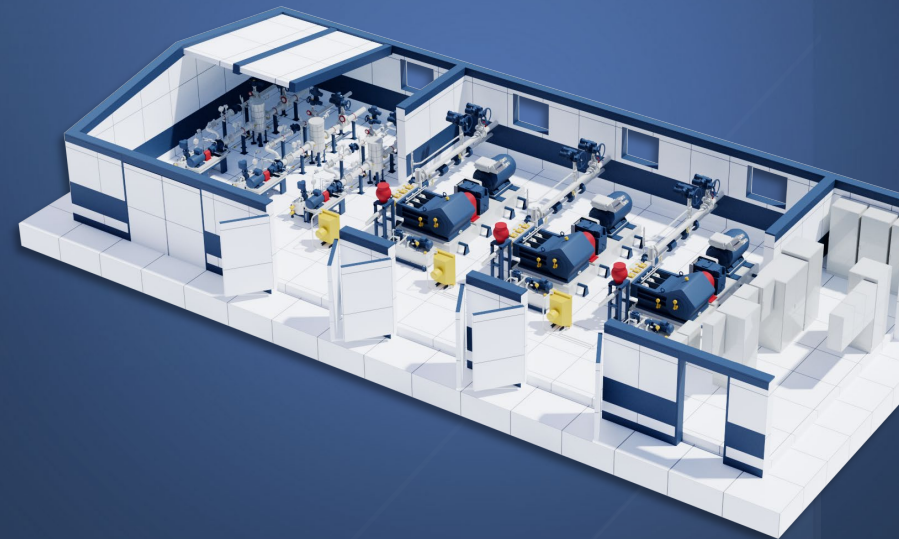


Gas Metering System

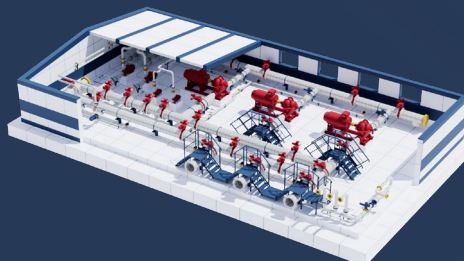
Pump Stations

- The station can be supplied as a part of the package together with lowvoltage distribution switchboards, power control cabinets, vessels, control rooms, and other auxiliary units. The power and control units can be designed both as free-standing, and combined into a system under the same roof with the pump unit
- Process calculation of best possible diameters of piping, efficient process diagrams, and the use of energy-saving equipment allow to use equipment in a wide range of feed rate and pressure values
- Mobile units designed for installation on temporary foundations, skids, or vehicle chassis can be manufactured
- The block-box design, foundation, and frame of pumping units provide for expansion in case of increase in capacity of the pump stations
- Vibration and thermal expansion compensation systems are used in the piping
- Fully automated control system allows unmanned operation
- Failure-free warranty during the warranty period and the entire declared service life, consultancy technical support during operation of equipment of the pump station

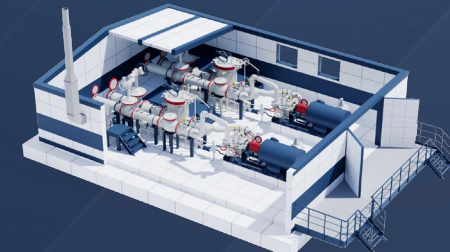
**Modular Cluster
Pump Stations**



Water Transfer Pump Stations



Fire Fighting Pump Stations



Oil Transfer Pump Stations

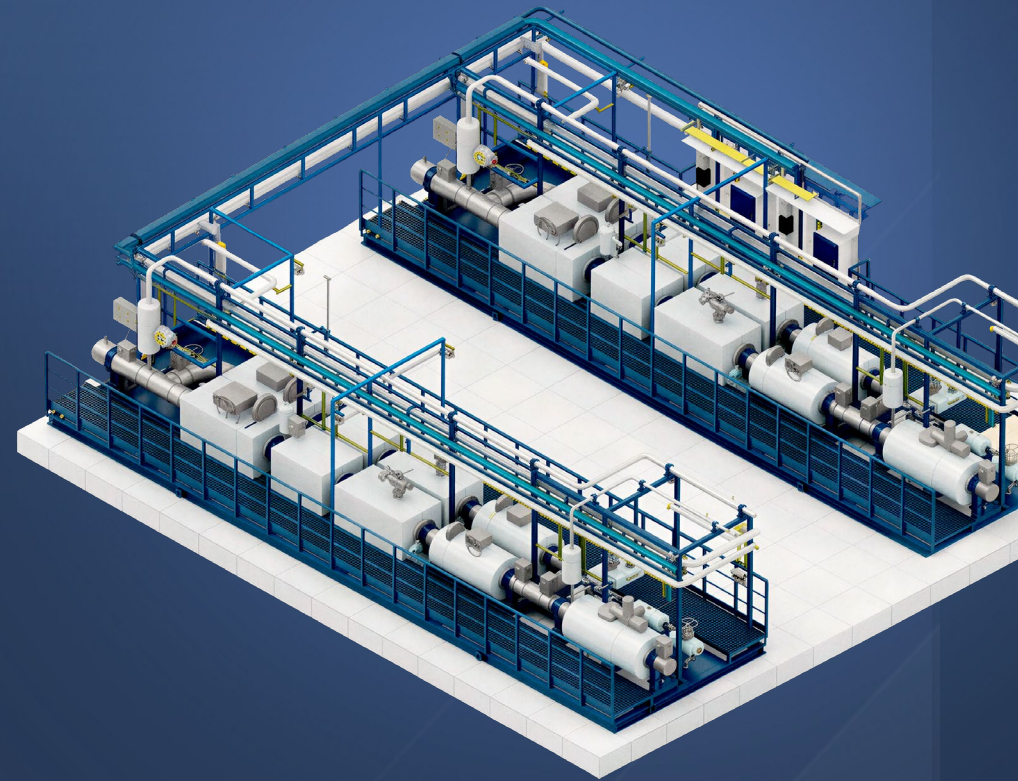
Valve Assemblies

Designed to perform main and auxiliary processes as follows:

- ◆ filtration;
- ◆ medium flow rate measurement;
- ◆ automatic pipeline shut-off;
- ◆ medium flow distribution;
- ◆ pressure or flow rate control;
- ◆ methanol supply metering and control, etc.

Benefits of Design Solutions

- ◆ The assemblies are supplied as prefabricated units. Installation at the construction site includes only their installation on the foundation, interconnection, and connection to external utilities
- ◆ The well-thought-out layout solution allows barrier-free access of the personnel to all units and parts of the modular devices in accordance with GOST 12.2.049-80
- ◆ Optimal reliability and aesthetics
- ◆ Minimum weight of building structures, owing to the use of new efficient materials

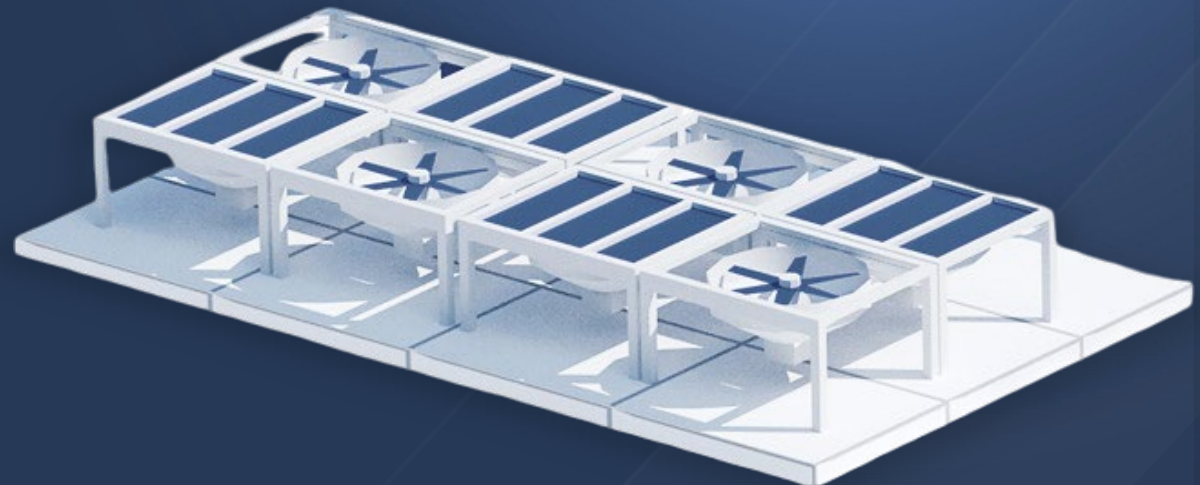


Air Cooling Units

- They can have various designs depending on purpose, specifics of the process for which they are used, properties of the medium, its speed and time of residence in the unit, operating pressure as well as requirements for operating temperature and the possibility of its control
- They can be used both as a part of a group of process equipment, and as separate units
- Upon the Customer's request, sections (tube bundles) can be supplied as separate units of the Air Cooling Unit
- They can be operated in any climatic zones at air temperatures of +35 °C to -60 °C and humidity up to 100 %
- Existing designs of the Air Cooling Units can be optimized in order to increase their efficiency
- A positive conclusion confirming compliance with industry requirements has been obtained from the Institute of Oil and Gas Technological Initiatives (INTI) (code 2.1)

Types of Air Cooling Units

- Horizontal, zigzag-type
- A-frame
- Modular
- Low-flow
- For viscous and highly viscous media

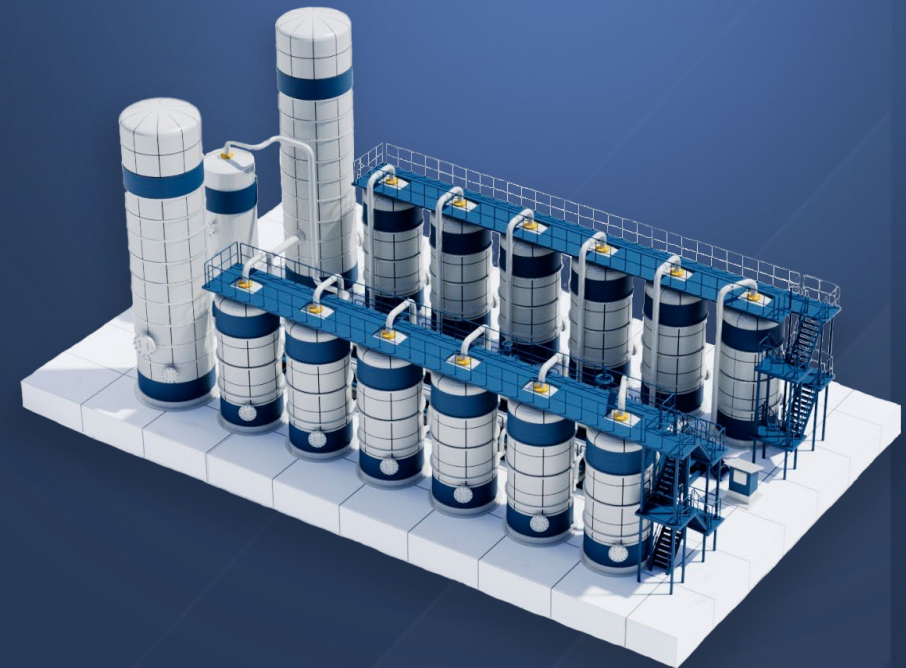


Pressure Swing Adsorption (PSA) Units for hydrogen recovery and purification

The main scope of application of this state-of-the-art process is to recover and purify hydrogen from untreated gases, for example, synthesis gases from steam reforming, partial oxidation or gasification processes, refinery off-gases, ethylene off-gases, coke oven gases, methanol and ammonia purge gases. The resulting hydrogen meets all purity requirements (up to 99.9999 %) with the highest hydrogen recovery rate

Benefits

- Over 20 years of experience of experts in the design, supply, and commissioning of PSA units
- High product recovery rate
- Automatic start-up from "zero" pressure. All pre-starting operations are performed in automatic mode
- Automatic removal of a faulty adsorber from service without shutting down the entire unit, while maintaining the product purity and recovery rate
- Special-purpose programmed switching valves designed for high cyclic life
- Specially selected adsorbent with a service life of 10 to 15 years
- Whenever required, an electrical heat tracing and thermal insulation system is provided for reliable and uninterrupted operation in winter
- Upon the Client's request, the entire valve assembly can be placed in a heated and ventilated shelter



Projects

TECHNOTECS has implemented
over 1 000 projects
of varying complexity for Russian
and foreign clients



**Gas Treatment Unit
UPG-02-57000-4.0-KhL1**

Development of the Zapadno-Tarkosalinskoe
field. Gas treatment facilities

Client
Gazpromneft-Zapolyarye LLC



**Methanol Recovery Unit for
Integrated Gas Treatment Plant**

Development of the Chonskaya group of fields

Client
Gazpromneft-Zapolyarye LLC



Combined Forced-Air Flare System

Development of the Pestsovoye field. Central
Gathering Plant

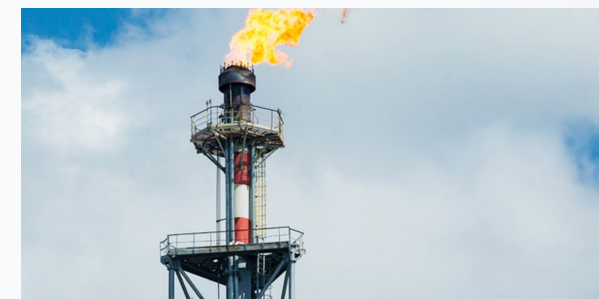
Client
Gazpromneft-Zapolyarye LLC



Flare System NTFS-800

Omsk Oil Refinery

Client
Gazpromneft-ONPZ JSC



**High-pressure flares supplied complete with valve
assemblies**

For development of the Priobskoye field

Client
Gazpromneft-Khantos LLC

Projects



Flare and Ignition System NTF-1000-35-GPN

Reconstruction of an Oil Treatment Unit of the Chayandinskoye OGCF

Client
Gazpromneft-Zapolyarye LLC



Modular Tubular Furnace PTB-10E

Expansion of a separator of the Zapadno-Zimneye licensed area

Client
Gazpromneft-Khantos LLC



Furnace PTB-5-40E

Booster pump station 2 at Southern part of Priobskoye field

Client
Gazpromneft-Khantos LLC



Heat-Carrier Heater TsS-180/12

Gas and condensate compression and treatment complex

Client
Gazpromneft-Yamal LLC



Oil Heater

Tazovskoye oil and gas condensate field

Client
Gazpromneft-Razvitie LLC



Intermediate Heat-Carrier Heater PPT-2.5GS-GPN.00.00.000

Tazovsky oil delivery and acceptance point

Client
Gazpromneft-Zapolyarye LLC

Projects



Shut-Off Valve Assemblies

Development of the 3rd Achimovsky section of the Urengoyskoye field.
A cluster of gas condensate wells

Client
Gazpromneft-Zapolyarye LLC



Mechanical Oil Sludge Dewatering Unit

Motor gasoline and aromatic hydrocarbons production facility. Off-site facilities

Client
Il'sky Oil Refinery LLC



Water Metering Unit

Expansion of a separator of the Zapadno-Zimneye licensed area

Client
Gazpromneft-Khantos LLC



Oil Metering System

Reconstruction of an Oil Treatment Unit of the Chayandinskoye OGCF. Oil Treatment Unit

Client
Gazpromneft-Zapolyarye LLC



Modular Water Pump Station with the capacity of 630 m²/h

Development of the Zapadno-Messoyakhskoye and Vostochno-Messoyakhskoye fields. Construction of a Free Water Knock Out Unit of the Vostochno-Messoyakhskoye field

Client
Messoyakhneftegaz JSC



Modular Cluster Pump Station

Development of the Gavrikovskoye field

Client
NZNP Trade LLC

Projects



Gasoline and Aromatic Hydrocarbons Production Facility

EPC-contract. Sewage treatment facilities

Client
KNGK-Ilsky Oil Refinery LLC



Biological Treatment Plant. Replacement of ultrafiltration membranes

Supply, installation, and commissioning of membrane modules JHM35 (1,440 pcs)

Client
Gazpromneft-MNPZ JSC



Modular Water Treatment Complex VOS-200-2-KhL1 BSO-2

Administrative and residential complex No. 4 of the southern part of the Priobskoye field. Water Treatment Plant

Client
Gazpromneft-Khantos LLC



Potable Water Treatment Unit

Temporary buildings and structures of the Priobskoye and Yuzhnoe fields

Client
Gazpromneft-Zapolyarye LLC



Recirculated Water Supply Unit

Integrated equipment supply, installation supervision, and commissioning.

Capacity: 2,000 m3/hour

Client
Gazpromneft-MNPZ JSC



Water Treatment Unit

Engineering, integrated equipment supply, installation supervision, and commissioning

Capacity: 240 m3/hour

Client
Slavneft-YANOS OJSC

Projects



Air Cooling Units designed for cooling or condensation of gas and condensate process flows

Client
Gazprom Pererabotka LLC



Air Cooling Units 900AVO1/1, 900AVO1/2, and 900AVO1/3

Equipped with a pipe wall temperature sensor, to prevent hydrate formation in the cooled gas

Client
Gazpromneft-Zapolyarye LLC



Air Cooling Units KhV-101 and KhV-102

A two-pass air heater consisting of two sections with a pipe slope in each section of at least 1:100 for each pass

Client
Slavneft-YANOS PJSC



PSA Unit Engineering Support

Commissioning without participation of the licensor (Linde)

Client
Afipsky Oil Refiner LLC



Replacement of adsorbent in a PSA Unit with a similar one

Replacement of adsorbent in a PSA Unit (licensor: Linde) with a similar one

Client
Linde-Azot Togliatti LLC



Separator Evaporator

Client
Khimtekhlogiya LLC

Quality Priority

TECHNOTECS has all the licenses and certificates required for implementation of integrated turnkey projects, from engineering and manufacture to warranty and post-warranty service

Awards

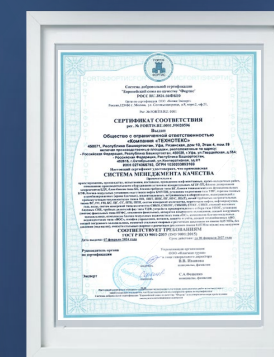
Russian National Olympus Award

"Excellent results in development of petrochemical industry"



"Top 10 IT-Projects for Oil and Gas Industry"

Laureate of the All-Russian competition



- ◆ INTI conformity assessment for production sites and manufactured equipment
- ◆ Personnel, technologies, and equipment certified according to the National Agency on Welding Qualification
- ◆ License for the right to design and manufacture equipment for nuclear facilities
- ◆ Quality Management System STO Gazprom 9001-2018
- ◆ Level 4 SRO for design (300 million RUB and more)
- ◆ Level 4 SRO for construction (with cost of works up to 10 billion RUB)
- ◆ Level 2 SRO for engineering surveys (with cost of works up to 50 million RUB)
- ◆ INTERGAZSERT certificates for the following types of equipment: pump stations, flare systems, furnaces and heating equipment

Benefits

Expertise

Our accumulated experience guarantees implementation of projects of any complexity

Focus on results

We achieve our goals owing to well-thought-out solutions

Reliability

We take full responsibility to the Client at all stages of work



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Production Facilities

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Engineering Centres

Ufa

Moscow

Yekaterinburg

Saint Petersburg





www.technotecs.ru