

# RNGS engineering LTD

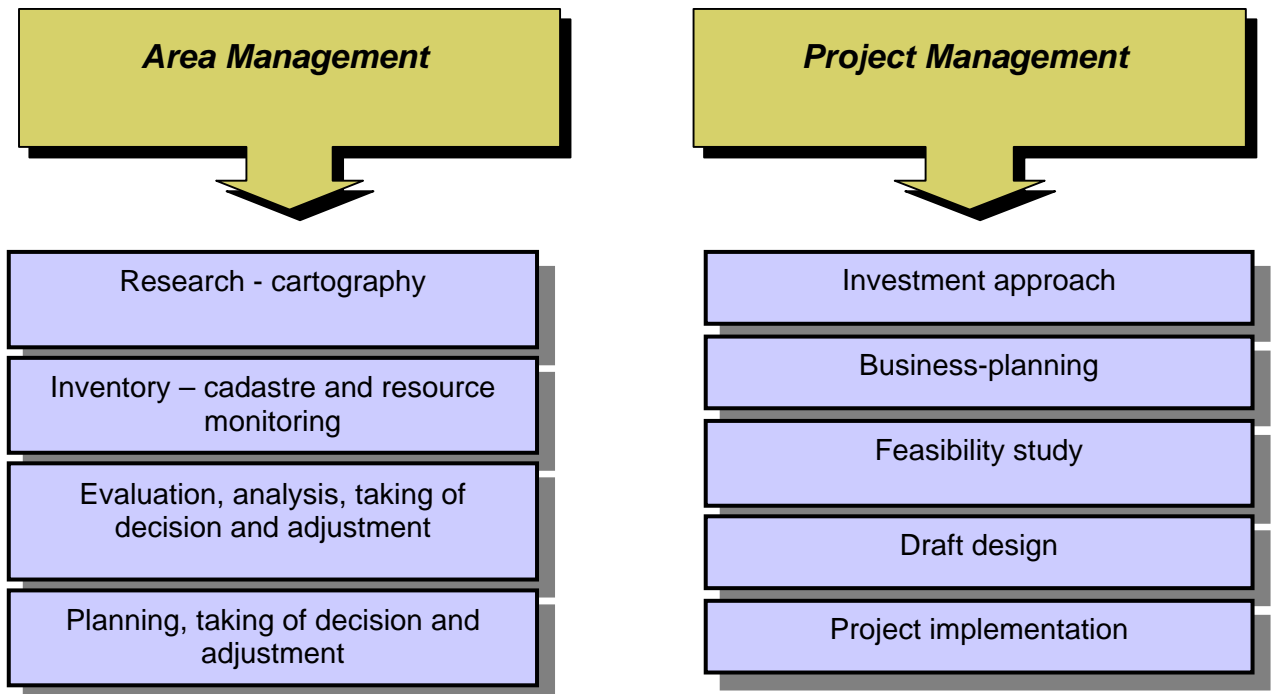
## General

“RNGS engineering” is the single engineering center in frame of OAO RAO “Rosneftegazstroy”.

The company was established in 1998 and is specialized for comprehensive solving in oil & gas construction field.

“RNGS engineering” successfully renders the wide range of services for oil & gas industry companies for area and project management including investment approaches in construction projects, project management, risk management, ecosystem modeling, etc.

## Main tasks & works

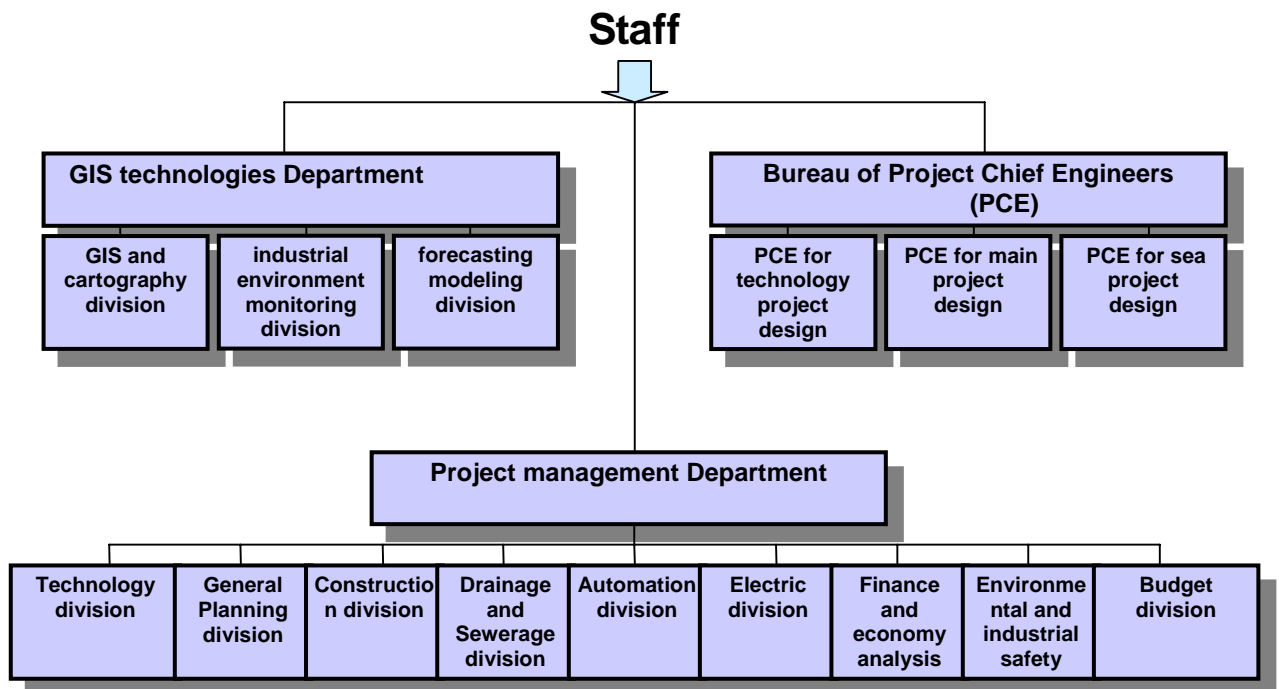
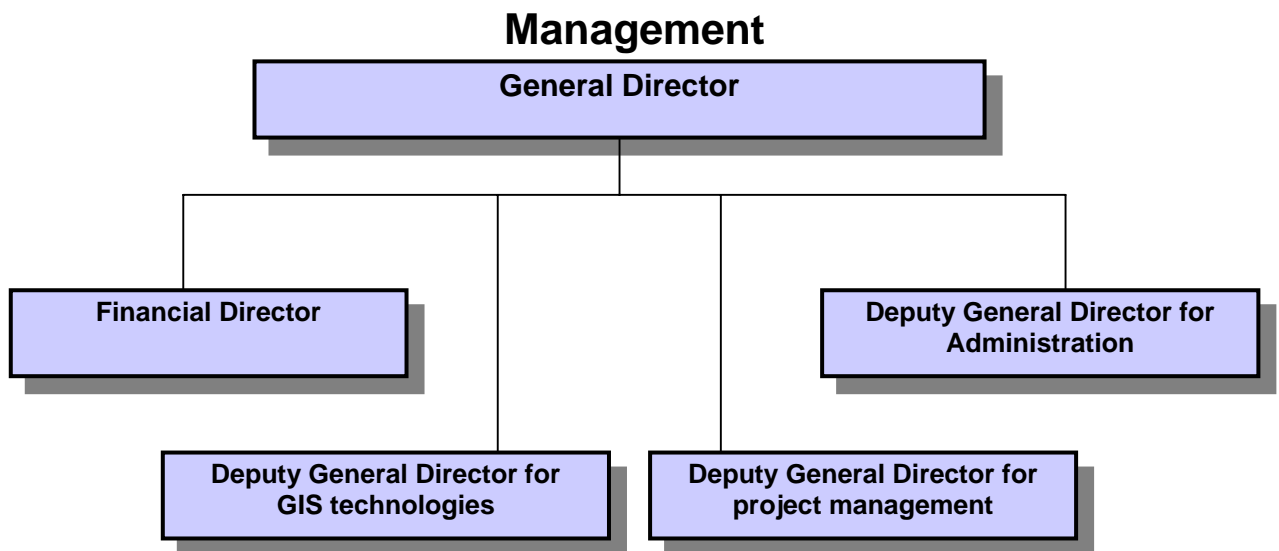


## Main activities

The main activities are creation of automatic management systems for projects and area and for space system information and also investment project design in oil & gas industry.

Our main principle of project development is an implementation of modern technology to provide the high degree of environmental and industrial safety.

Project documentation is made in accordance with requirements of the International Standards. The company has a possibility to develop the oil & gas project documentation in accordance with requirements and statements of the customer.



## Personnel

Personnel in “RNGS engineering” are highly qualified personnel with long experience in oil & gas industry. This gives to company a possibility to fulfill the most complicated works on highly qualified level. Invitation of scientific consulting specialists helps to solve complicated engineering matters.

“RNGS engineering” also has possibilities to invite specialists working outside company to solve very complicated tasks including international projects.

## Staff

Total number of “RNGS engineering” personnel is 103 persons including:

- senior specialists for design directions – 23 persons;
- chief engineers of projects – 3 persons;
- key specialists for design directions – 25 persons;
- CAD system engineers – 10 persons;

- specialists 7 persons;

## **“RNGS engineering” main systems**

### *Development of cybernetic systems:*

#### **Cybernetic Information System *CyberInfo*.**

- Cartography and inventory for land, waters, forests, vegetation, mineral resources, oil & gas complexes and infrastructure with implementation of geoinformation technologies for data processing of ground-based and aerospace surveys;
- Creation and up-grading of database, knowledgebase and metaknowledge about territory;
  - Creation 3-B cadastre of oilfield in shape of virtual model;

#### **Cybernetic System for industrial-ecological monitoring “*CyberExpert*” for the following:**

- Analysis of landscape changes in retrospective view and system modeling;
- Evaluation of antropogenic loads and impact of oil & gas complexes on environment;
  - Feasibility studies for environment damage and remuneration payments to environmental funds;

#### **Cybernetic system of area stable development management “*Cybermodel*”**

- Modeling of area stable development process and prevention of emergency situations;
- Measures and recommendations for area stable development: revegetation of damaged soils and water pollution treating, reconstruction of waters, forests and protection structures (dams, dikes), life support systems (water-, gas-, electro- and etc.)

## **Main works performed by “RNGS engineering”**

### **Project Management**

#### **- Oilfield Design**

- *gathering of oil & gas;*
- *preparation of oil, gas and water*
- *utilization of associated gas*
- **Design of sea oil & gas fields and related stations;**
- **Design of trunk pipeline systems and related facilities;**
- **Evaluation of environment impact;**
- **Risk management;**

### **List of completed projects by “RNGS engineering”**

- Feasibility study for oil pipeline “Angarsk-Gida” by order of “ECO” company;
- Feasibility study for oil pipeline by order of Administration of Nenetsk Autonomous Region;
- Project for temporary oil pipeline from “Urubchensk field” to railway station “Karabula” by order of Eastern Siberia Oil & Gas company;
- Development of concept for transportation of oil to South-East Asia by order of TOYO ENGINEERING CO. (Japan)

## Main projects executed by RNGS engineering

No.	Project	Customer
1	2	3
1.	«Project documentation for transferring of Kamchatka region for using of gas fuel»	ZAO «Rosneftegazinterstroy »
2.	«Development of 1 stage of “Complex Engineering Exploration” in frame of Project “Oil pipeline Urubchensk-Karabula railroad station”.	RAO «Rosneftegazstroy»
3.	Feasibility study for transportation of oil from Urubchensk oilfield to customers	OAO «East Siberian Oil Company»
4.	Development of study «Perspectives of oil & gas complex in Western Siberia».	RAO «Rosneftegazstroy»
5.	Feasibility study for transportation of oil from Urubchensk oilfield to North-Eniseysk».	RAO «Rosneftegazstroy»
6.	Installation of information system “GIS-Caspian”	RAO «Rosneftegazstroy»
7.	Tender documentation for “Sachalin –2” project	RAO «Rosneftegazstroy»
8.	Pilot-project for transportation of oil from Urubchensk oilfield.	RAO «Rosneftegazstroy»
9	Express-design for collection oil system “North part of Timano-Pechorskoy region”	ZAO “Varandeyneftegaz”
10.	Development of procedure for design and construction temporary oil pipeline Urubchensk oilfield - railroad.	OAO Eastern Siberia Oil & Gas company
11.	Establishment of information system “ Oil & Gas fields on Volga river region” for analyseses	RAO «Rosneftegazstroy»
12.	Investment design of line “Verhnechonskoe-Talakanskoe-Dulismanskoe-Yarakginskoe-Ust-Kut (600 km)”	RAO «Rosneftegazstroy»
13.	“ Development of forecast maps for exploration of sand for OAO “Slavneft-Megionneftegaz”	DZAO “Nizhnevartovsk NIPIneft”
14.	Investment design for ammonialine	OAO “Tolyattiazot”
15.	Engineering study for project “ Research of sand on Aganskiy oilfield”	DZAO “Nizhnevartovsk NIPIneft”
16.	“ Feasibility study for oil transportation from Musushor-Shorsandiyskogo location	OAO “Nenetskaya neft company”
17.	Investment Design oil and gas pipeline in Nenetskiy region	ZAO “RNGS-Sever”
18.	Feasibility study for technological systems of trunk oil pipeline of Nenetsk Pipeline Consortium	OAO RNGS Holding
19.	Engineering exploration of oil pipeline Russia – China from Angarsk to Gida	Scientific Institute
20.	Engineering exploration on oil pipeline Yuzhno-Khylchuuskiy oilfield	ZAO “Varandeyneftegaz”
21.	Concept Project of Unified Energetic Corridor for oil and gas transportation from oilfields of Eastern Siberia	OAO RAO “Rosneftegazstroy”
22.	Development and installation of cybernetic system for administration of stable development of Sakha Republic	Scientific Institute
23.	Exploration and design of line for trunk oil pipeline Urubchensk oilfield to Karabula railroad station	OAO VSNK
24.	Preparation of technical-commercial documentation for project “Sachalin-2”	OAO RAO “Rosneftegazstroy”

## **International contacts**

We are seeking to develop our business and cooperation with foreign companies and to participate in international projects.

### **Our partners in international projects:**

#### **Caspian Pipeline Consortia (CPC) (under completion)**

- Fluor Daniel (USA)
- MAN GHH Oil & Gas GmbH (Germany)
- Toyo Engineering Co. (Japan)

#### **Sakhalin I (preparation of tender bids)**

- Exxon Neftegaz Limited
- Technip Coflexip (France)

#### **Sakhalin II (preparation of tender bids)**

- Sakhalin Energy
- Technip Coflexip (France)

## **Our customers in Russia**

- LUKoil ZAO “Varandeyneftegaz”
- YUKOS “Eastern Siberia Oil & Gas Company”
- OAO “Gazprom”
- RAO “EES Rossiya”, managing company “Volzhskiy hydroenergetic cascade”
- OAO Tyumen Oil Company, DZAO “NizhnevartovskNIPIneft”
- OAO “Tolyattiazot”

## **Investment approaches for oil & gas projects**

“RNGS engineering” renders the wide range of services for oil & gas and investing companies in investments for oil & gas projects:

- Design of trunk pipelines and facilities
- Design of oil- and gas fields
- Design sea pipeline systems and structures

### ***Initial data & tasks***

***Solution of tasks for project design in oil & gas field includes the following directions:***

- analysis of existing legislation;
- determination of project characteristics and their composition;
- possibility of project realization in view of social and economic infrastructure, development of transport and energetic communications and natural features of area;

- evaluation of environment impact
- development of structure, technologies and process layouts (development, production, transportation)
- evaluation of capital investments;
- lead time and realization time of investment project;
- risk evaluation and management;

### ***Main works for investment project***

#### ***Investment project covers the following kinds of works:***

- Engineering geology survey: expert analysis of basic materials, deciphering of aerospace (satellite) photographs, issue of engineering geology maps;
- Engineering geodesy survey: electronic map-making of land for proposed construction site, job evaluation of pipeline route;
- Tracing and profiling, developing of routes of trunk oil- and gas pipelines;
- Electronic map-making data can provide interactive modeling of different versions for pipeline routes, operation conditions, environment impact with evaluation of possible consequents as a result of different accepted decisions ;
- Site option for placing of technological facilities, pumping and compressor stations;
- 3-D designing and strength analysis
- Development of oil and gas fields including data collection, reservoir pressure maintenance, internal field communications and etc. using the program complex Microstation technical decisions;
- Developing of construction management program and construction works program;
- Evaluation of possible expenses, project duration, investments and risks for proposed investment project;

## **Environment impact**

“RNGS engineering” provides evaluation of environment impact connecting to proposed project including following:

- evaluation of negative natural factors;
- evaluation of urban activity;
- ecological modeling;
- pipeline system impact;
- oilfield construction impact;
- ecological monitoring;

## **Risk management**

### **Risk evaluation**

#### ***1. Monitoring and diagnostics of technical conditions:***

- pipeline systems: linear part, terminals and reservoirs;
- transport systems: roads, railroads and dams;
- energy and communication systems;
- buildings and erections, etc.;

#### ***2. Evaluation of natural and man-caused risks (fairs, floods, seismotectonic, ecology and geomorphology):***

- monitoring and analysis of natural conditions;

- climate: weather, snow thawing and solar activity;
- endogenous processes: seismic activity, volcano and magnetism;
- exogenous processes: soil erosion, karst and frozen earth cases;
- ecological conditions: land and waters, vegetation (forests) and etc.

### **3. Evaluation of geopolitical risks;**

### **4. Evaluation of financial and social –demography risks;**

#### **Forecasting model:**

- crisis and emergency situations;
- geopolitical changes;
- pricing;
- other situations;

## **Technical support**

Due to the most modern program and technical equipment “RNGS engineering” is capable to develop and issue the qualified documentation including graphic parts.

To carry out different parts of projects it is used programs of the following leading companies: Bentley, Adobe, Autodesk, Inprise, Microsoft, Novell and also Russian companies: “IVTS Potok”, “Integral”, “Kredo Dialog”, “Lira”, “NTTS Truboprovod” and “Technosoft”;

Using of modern program complexes such as “Microstation”, “Terra Modeller”, “Prima Vera” and “Projectexpert” we essentially reduce the time of preparation of documents made in accordance with requirements of International Standards.

This gives us wide possibilities to develop a qualified documentation including drawings in 3-D Modeling format.

Issue and printing of documentation of A4 - A0 sizes is made on colour and white and black laser and bubblejet printers with high resolution and scanners and plotters of Hewlett Packard and Epson companies.

## **Licenses and Certificates**

**“RNGS engineering” has the following licenses:**

- Engineering survey for construction works
- Technological design for oil & gas field construction, technological pipelines and refineries
- Design of trunk oil, gas and product pipelines
- Architect and construction design including block-complex equipment
- Design of engineering systems: heating-water-electric supply, automation, roads and etc.
- Construction management program
- Ecology audit and environment impact
- Investment project support
- Development of tender bids including marketing, pre-bid qualifications and consultations for contract terms and conditions
- Project engineering including permissions, investment intends, feasibility studies, technical support for project, project documentation expertise
- Execution of functions as General Project Designer

# MAIN PROGRAM COMPLEXES

